Final Report

California Statewide Local Streets and Roads Needs Assessment

February 2011

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Executive Summary

California's local street and road system continues to be in crisis.

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. However, these are challenging times on many levels. Funding is at risk, and there is a significant focus on climate change and building sustainable communities, and the need for multi-modal opportunities on the local system has never been more essential. Every component of California's transportation system is critical to provide a seamless, interconnected system that supports the traveling public and economic vitality throughout the state. Sustainable communities cannot function without a well-maintained local street and road system.

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. This comprehensive 2010 update provides another look at this vital component of the state's transportation system and finds further deterioration and a growing funding shortfall.

As before, the objectives were to report the condition of the local system and provide the overall funding picture for California's local street and road transportation network. We needed answers to some important questions. What are the pavement conditions of local streets and roads? What will it cost to bring pavements to a Best Management Practices (BMP) or most cost-effective condition? How much will it cost to maintain them once we achieve the BMP or optimal pavement condition? What are the needs for the essential components to a functioning system? How much is the funding shortfall? What are the solutions? As part of this report, we also wanted to see how different funding scenarios would affect the local street and road system condition.

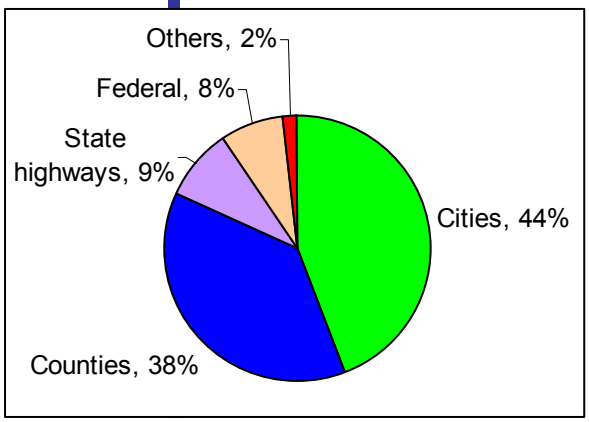


Figure 1. Breakdown of Maintained Centerline Miles by Agency

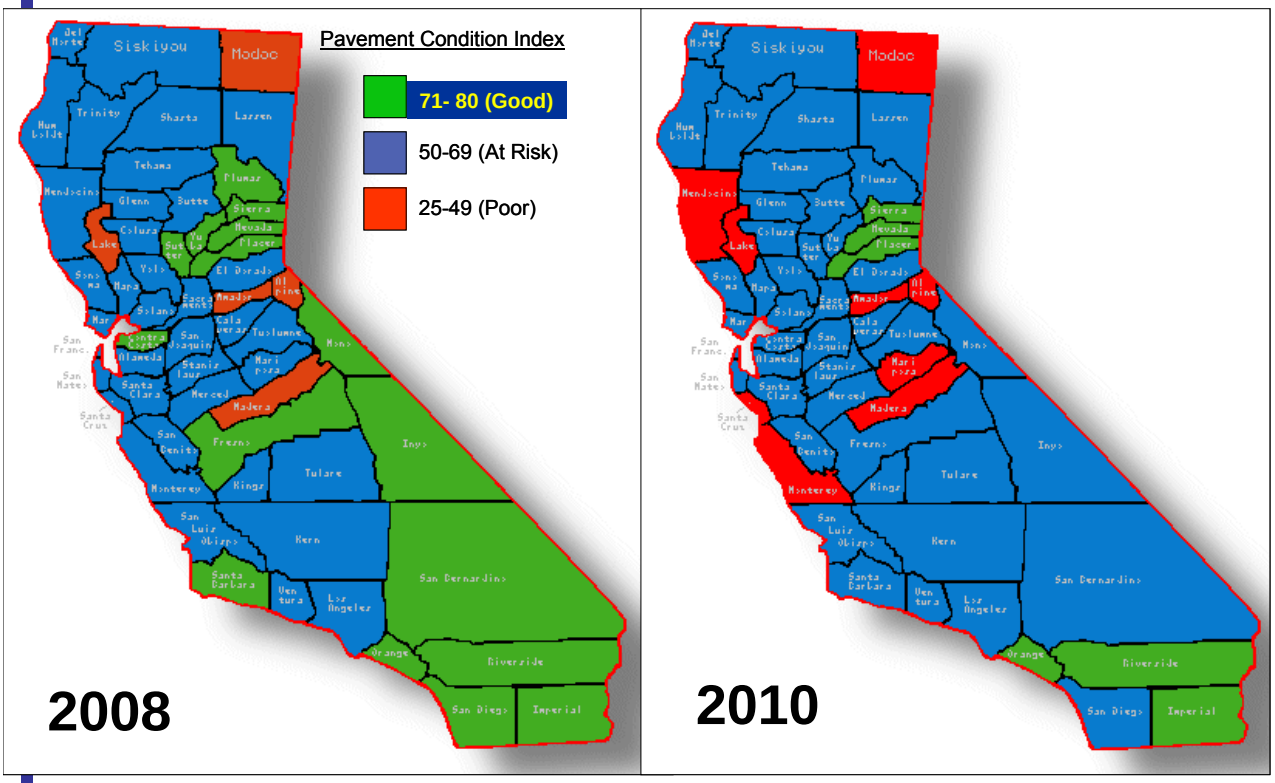
As owners and operators of 82 percent of the state's roads (Figure 1), cities and counties found that the 2008 study was of critical importance for several reasons. While federal and state governments' regularly assess their system needs, no such data existed for the local component of the state's transportation network. Historically, statewide transportation funding investment decisions have been made without recognition of the particular requirements of the local system, and without local pavement condition data. Thus, this assessment provides a critical piece in providing policy makers with a more complete picture of our transportation system funding needs.

The goal is to use the findings of this report to continue to educate policymakers at all levels of government about the infrastructure investments needed to provide California with a seamless, multi-modal transportation system. The findings of this study provide a credible and defensible analysis to support a dedicated, stable funding source for maintaining the local system at an optimum level. 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.

The study surveyed all of California's 58 counties and 480 cities in 2010. The information collected captured data from more than 97 percent of the state's local streets and roads! This level of

participation exemplifies the interest at the local level to provide comprehensive and defensible data in hopes of tackling this growing problem.

The results show that California's local streets and roads are moving ever closer to the edge of a cliff. On a scale of zero (failed) to 100 (excellent), the statewide average pavement condition index (PCI) has deteriorated from 68 in 2008 to 66 ("at risk" category) in 2010. If current funding remains the same, the statewide condition is projected to deteriorate to a PCI of 54 by 2020. Even more critical, the unfunded backlog will almost double from $39.1 billion to $63.6 billion. The maps on the next page illustrate the pavement deterioration that has resulted since the 2008 study. Approximately 67 percent of the state's local streets and roads are now "at risk" or in "poor" condition. Later in this report, we will define the consequences of this degradation and paint a clearer picture of what this will mean for the mobility and safety of the traveling public and ultimately the economic vitality of California.



To spend the taxpayer's money cost-effectively, it makes more sense to preserve and maintain our roads in good condition than to let them deteriorate, since deteriorated roads are more expensive to repair in the future. Consistent with that approach, the costs developed in this study are based on achieving a roadway pavement condition of what the industry calls Best Management Practices (BMPs). This condition represents improving the pavement condition to a level where roads need preventative maintenance treatments (i.e., slurry seals, chip seals, thin overlays). These treatments have the least impact on the public's mobility and commerce. Further, these treatment types are more environmentally friendly than the next level of construction that would be required (i.e., rehabilitation and reconstruction).

The importance of this approach is significant. As roadway pavement conditions deteriorate, the cost to repair them increases exponentially. For example, it costs twelve times less to maintain a BMP pavement compared to a pavement that is at the end of its service life. Even a modest resurfacing is four times costlier than a pavement in the BMP condition. At a time when counties and cities are on fixed budgets, employing maintenance practices consistent with BMP results in treating four to twelve times more road area. By bringing the roads to BMP conditions, cities and counties will be able to maintain streets and roads at the most cost-effective level. It is a goal that is not only optimal, but also necessary.

Local bridges are also an integral part of the local streets and roads infrastructure. There are approximately 12,562 local bridges, and approximately $3.3 billion is needed to replace or rehabilitate them. There is an estimated shortfall of $0.3 billion.

This study helps answer the following key questions:

What are the pavement conditions of local streets and roads?

The current average PCI is 66, and is expected to further decline to 54 by 2020 given existing funding levels. In addition, the percentage of "failed" streets will grow from 6.1 percent to almost 25 percent of the network by 2020.

Based on the results of this study, approximately $70.5 billion of funding is needed over the next ten years to bring the pavement condition of the state's local streets and roads to a level where the taxpayer's money is most cost-effective.

What will it cost to bring pavements to a BMP or most cost-effective condition?

It will cost $70.5 billion to reach BMP in 10 years.

How much will it cost to maintain them once we achieve the BMP or optimal pavement condition?

Once the BMP condition is reached, it will cost approximately $2.3 billion a year to maintain them at that condition.

What will it cost to maintain the network at its current condition?

In order to maintain the pavement network at its existing condition, $3.1 billion a year is required. This is more than twice the current funding level of $1.42 billion/year.

How will different funding scenarios affect the pavement conditions?

The State of California is facing severe budget challenges that are affecting a wide range of services throughout the state. Over the past two years, the results of the 2008 study have helped educate policy makers and prevented severe cuts to road funding. To further assist policy makers on how potential cuts will affect pavement conditions, this report includes the results of four different funding scenarios:

1. Existing funding ($1.42 billion per year).
2. Loss of old and new Highway User Tax Account (HUTA) funds for three years (i.e., resulting in a funding level of $0.763 billion/year for three years then returning to $1.42 billion/year for the next seven years).
3. Permanent loss of new HUTA (i.e., resulting in a funding level of $1.25 billion per year).
4. Funding to maintain current pavement condition at PCI = 66 (i.e., $3.1 billion/year).

The results are summarized in the table below:

Scenario	Projected Results in 2020: Pavement Condition (PCI)	Unfunded Backlog $ (billion)	% Pavements Failed Condition
1	54	$ 63.6	22.4%
2	53	$ 65.8	23.1%
3	53	$ 67.6	23.6%
4	66	$ 37.9	17.7%

What are the impacts of deferring maintenance?

Every dollar of maintenance deferred today will cost $1.53 in 2020. This assumes that labor and construction costs do not increase.

What are the needs for the essential components to a functioning system?

The transportation network includes essential safety and traffic components such as curb ramps, sidewalks, storm drains, streetlights and signals. These components require $29.1 billion over the next 10 years. However, this does not include the costs due to National Pollutant Discharge Elimination System (NPDES) regulations, which may be as much as an additional 10 percent of the transportation costs.

What is the total funding shortfall?

The table below shows the total funding shortfall of $78.9 billion over the next 10 years. For comparison, the 2008 results are also included.

Summary of 10 Year Needs and Shortfall for 2010 and 2008 ($Billion)

Transportation Asset	2010 Results: Needs	Funding Available	Shortfall	2008 Results: Needs	Funding Available	Shortfall
Pavements	$ 70.5	$ 14.2	$ (56.3)	$ 67.6	$ 15.9	$ (51.7)
Essential Components*	$ 29.1	$ 6.8	$ (22.3)	$ 32.1	$ 12.4	$ (19.7)
Bridges	$ 3.3	$ 3.0	$ (0.3)	N/A	N/A	N/A
Totals	**$ 102.9**	**$ 24.0**	**$ (78.9)**	**$ 99.7**	**$ 28.3**	**$ (71.4)**

* Does not include National Pollutant Discharge Elimination System (NPDES)

What are the Solutions?

To bring the state's local street and road system to a best management practice level where the taxpayer's money can be spent cost effectively, we will need approximately $56.3 billion of additional funding for pavements alone and a total of $78.6 billion for a functioning system over the next 10 years. The sooner this is accomplished, the less funding will be required in the future.

If cities and counties lose any additional funding from the state, the results will be disastrous for local streets and roads—and ultimately the entire transportation network—as all modes are interrelated.

The fact that more than twice the current funding level is needed just to maintain the current conditions is alarming.

To bring the local system back into a cost-effective condition, thereby preserving the public's $271 billion pavement investment and stopping further costly deterioration, almost $7.9 billion annually in new money is needed to stop the further decline and deterioration of local street and road system.

This is equivalent to about a 53-cent per gallon gas tax increase. It is imperative that cities and counties receive a stable and dedicated revenue stream for cost effective maintenance of the local system to avoid this crisis.

The conclusions from this study are inescapable. Given existing funding levels available to cities and counties for maintaining the local system, California's local streets and roads will continue to deteriorate rapidly within the next 10 years. Unless this condition is addressed, costs to maintain the local system will only continue to grow, while the quality of California's local transportation network deteriorates.

Chapter 1. Introduction

1.1 Background

California's 58 counties and 480 cities[1] own and maintain 141,235 centerline-miles of local streets and roads[2]. This is an impressive 82 percent of the state's total publicly maintained centerline miles (see Figure 1.1 below). Conservatively, this network is valued at $271 billion.

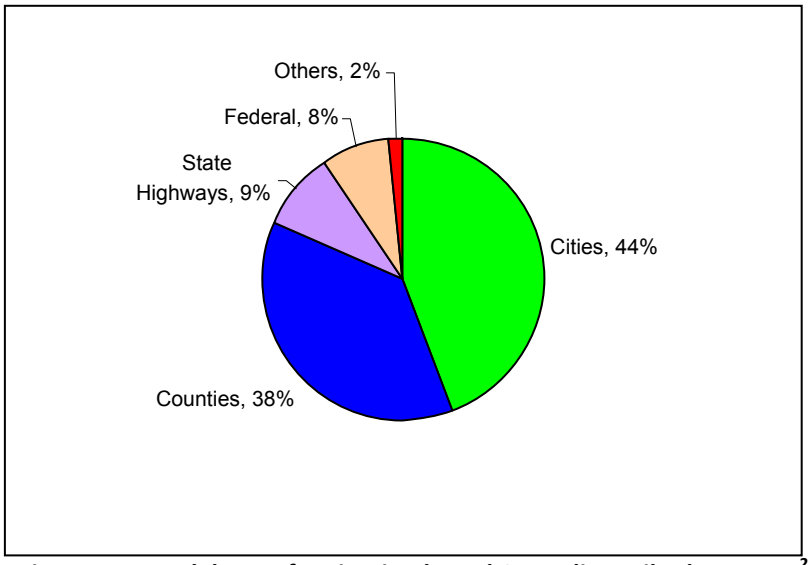


Figure 1.1 Breakdown of Maintained Road Centerline Miles by Agency[2]

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 depiction 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 are areas with 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] Two new Cities, Wildomar and Menifee, were incorporated in 2008 and were not included in the original 2008 study. They have been included in this update. Note too that San Francisco is traditionally counted as both a city and a county, but for purposes of analysis, their data have been included as a city only.

[2] *2009 California Public Road Data – Statistical Information Derived from the Highway Performance Monitoring System*, State of California Department of Transportation, Division of Transportation System Information, October 2010. The total miles come from a combination of this reference and survey results.

Table 1.1 Breakdown by Functional Classification & Unpaved Roads[2]

	Lane-miles by Functional Class					
	Urban		Rural			
	Major	Local	Major	Local	Unpaved	Total
Cities	73,191	99,233	1,204	2,064	969	176,660
Counties	25,629	36,268	22,700	34,631	12,392	131,620
Totals	**98,820**	**135,501**	**23,903**	**36,695**	**13,361**	**308,279**

Note: San Francisco is included as a city only.

From Table 1.1, it can be seen that 79 percent of the total paved miles are in urban areas, with the remaining 21 percent in rural areas. It should also come as no surprise that almost 95 percent of rural roads belong to the counties. Conversely, almost 74 percent of urban roads belong to the cities. Finally, unpaved roads comprise approximately 4.3 percent of the total network, and over 92 percent of this belongs to the counties.

1.2 Study Objectives

In 2008, a study was conducted to assess the statewide needs for the local streets and roads network and the final report released in October 2009[3]. The intent of the 2008 study was to determine the funding required to maintain the local streets and roads system for the next 10 years, so that the information could be reported to both the Legislature and the California Transportation Commission, 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?

In this update, the objectives are essentially the same, with the addition of the question highlighted in blue above to address different funding allocations. This is a result of the difficulties that the state is facing with the budget, where a potential deficit of more than $25 billion is projected for FY 2010-11. In addition, the combination of the transportation tax swap enacted by the Legislature in March 2010 and the passage of Propositions 22 and 26 in the November 2010 General Election have the potential to negatively affect transportation funding statewide unless the Legislature acts (see appendix for more information on the status of state transportation funding at the time of this writing).

Finally, since the development of the methodology used to answer these questions were well documented in the 2008 study (in Appendices B and D), they have not been included in this 2010

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

update. If the reader wishes to obtain a copy, an electronic version may be downloaded from www.SaveCaliforniaStreets.org.

1.3 Study Assumptions

As before, there were some important assumptions that were made during the analyses of the data received from cities and counties. Most are consistent with those used in the Caltrans 2009 State Highway Operation and Protection Program (SHOPP)[4]. The assumptions include:

1. The analysis period used in this study is 10 years, which is consistent with the SHOPP.

2. All numbers reported in this study are in constant 2010 dollars – this is consistent with the SHOPP.

3. The pavement condition goal was to reach a condition where best management practices (BMP) can occur. This translates to a PCI in the low 80s (on a scale of 0 to 100, where zero is failed and 100 is excellent). Caltrans SHOPP defines performance goals quite differently, i.e., the goal is to reduce the percentage of distressed highways from 28 percent to 10 percent. This is further discussed in Section 4.6.

4. 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, widening, grade separations etc. This is consistent with the SHOPP.

5. The inclusion of safety, traffic and regulatory components of the roadway system such as sidewalks, ADA ramps, storm drains, etc. is consistent with the SHOPP. Bicycle and pedestrian facilities are also included.

6. Although a detailed bridge needs assessment was not included in this study, a brief summary of the needs has been included in Chapter 5.

Table 1.2 Summary of Assumptions Used in 2010 Study and SHOPP

Assumptions	2010 Study Update	Caltrans SHOPP
Analysis Period	10 years	10 years
Cost Basis	2010 dollars	2009 dollars
Goals	Best management practices (PCI = low 80's)	% of distressed pavements < 10%
Total Scenarios Evaluated	5	1
Capital Improvement Projects	No	Only related to operational improvement
Essential Components*	Yes	Yes
Bridges	Yes	Yes

* Does not include NPDES costs.

[4] *Ten Year State Highway Operation & Protection Plan (FY 2010/11 to 2019/20)*, Caltrans, January 31, 2009..

1.4 Study Sponsors

This study was sponsored by the cities and counties of California and managed by the County of Los Angeles Department of Public Works. The Oversight Committee is composed of representatives from the following:

- League of California Cities (League)
- California State Association of Counties (CSAC)
- County Engineers Association of California (CEAC)
- County of Los Angeles, Department of Public Works
- California Regional Transportation Planning Agencies (RTPA)
- California Rural Counties Task Force (RCTF)

Chapter 2. Pavement Needs Assessment

In this chapter, the methodology and assumptions used for the pavement needs assessment are discussed, and the results of our analyses presented. The data collection efforts are described in more detail in Appendix A.

2.1. Methodology and Assumptions

Since not all 537 cities and counties responded to the survey, a methodology had to be developed to estimate the needs of the missing agencies. The following paragraphs describe in detail the methodology that was used in the study.

2.1.1 Filling In the Gaps

Inventory Data

Briefly, this process was to determine the total miles (both centerline and lane-miles) and pavement areas, as this is crucial in estimating the pavement needs for an agency. Missing inventory data were populated based on the following rules:

- If no inventory data were provided, then the 2008 data was used.
- If the inventory data provided was incomplete, Table 2.1 is used to populate the missing information. The average number of lanes and average lane width are summarized from agencies who submitted complete inventory data in the 2010 survey.

This differs slightly from the 2008 study in that averages are based on the data submitted from the agencies themselves instead of from the Highway Performance Monitoring System (HPMS) report[2].

Table 2.1 Assumptions Used to Populate Missing Inventory Data

Functional Class	Average Number of Lanes	Average Lane Width (ft)
Urban Major Roads	2.7	15.1
Urban Residential/Local Roads	2.1	14.9
Rural Major Roads	2.0	13.4
Rural Residential/Local Roads	2.0	11.9
Unpaved Roads	1.8	11.5

Pavement Condition Data

To assist those agencies who had no pavement condition data, the online survey provided a table with the average pavement condition index (PCI) collected in the 2008 study. They were then encouraged to look at the data from neighboring cities or counties to make their best estimate of the

pavement condition in their agency. This differs from the approach in 2008 when we actually had to assume that the pavement condition would be similar to geographically close agencies.

The 2010 survey also asked for condition data for different functional classifications, and additional rules were developed to populate the missing data:

- If the PCI is provided for one but not the other functional class(es), the same PCI would be used for all functional classes.

- If no pavement condition data were provided at all:

    - San Francisco Bay area agencies – data from the Metropolitan Transportation Commission (MTC) were used.
    - For all other agencies, their 2008 PCI was used, but we assumed a drop of 2 points. This deterioration rate is based on the performance curves developed by MTC from California cities/counties' data.

2.1.2 Pavement Needs Assessment Goal

The same needs assessment goal from the 2008 study was used in the 2010 update. To reiterate, the goal is for pavements to reach a condition where best management practices (BMP) can occur, so that only the most cost-effective pavement preservation treatments are needed. Other benefits such as a reduced impact to the public in terms of delays and environment (dust, noise, energy usage) would also be realized.

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

In short, the BMP goal is to reach a PCI in the low 80s and the elimination of 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[3], 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 described as a decision tree.

Figure 2.1 summarizes the types of treatments assigned in this study. Briefly, good to excellent 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 five to seven years depending on the traffic volumes.

As pavements deteriorate, treatments that address structural adequacy are required. Between a PCI of 25 to 69, asphalt concrete (AC) overlays are usually applied at varying thicknesses. Finally, when the pavement has failed (PCI<25), reconstruction is typically required. Note that if a pavement section has a PCI between 90 and 100, no treatment is applied. The 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 condition standards. The PCI thresholds shown in Figure 2.1 are generally accepted industry standards.

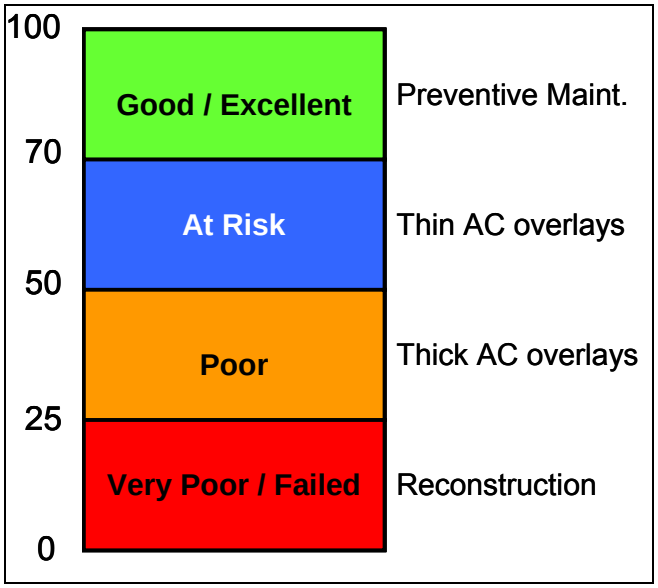


Figure 2.1 PCI Thresholds & Treatments Assigned

Unit cost data from 260 agencies were summarized and averaged for the reasons previously described in the 2008 study (See Table 2.2). The range in costs for each treatment is for the different functional classes of pavements, i.e., major roads have a higher cost than local roads.

Table 2.2 Unit Costs Used for Different Treatments & Road Classifications

Classification	Unit Costs ($/square yard)			
	Preventive Maintenance	Thin AC Overlay	Thick AC Overlay	Reconstruction
Major Roads	$4.30	$19.80	$29.10	$91.80
Local Roads	$4.20	$17.90	$26.40	$61.20

It should be noted that the costs for preventive maintenance treatments (e.g., seals) increased significantly from 2008. This is attributed to the higher demand for seals in the past two years. There could be two reasons for this:

- The economic climate has forced many agencies to use less expensive treatments such as seals, when compared to overlays or reconstruction; and/or
- More agencies understand the advantages and cost-effectiveness of seals, and therefore their use is more widespread.

Conversely, the cost for overlays and reconstruction have actually declined since 2008 by approximately 5 percent for overlays, and as much as 30 percent for reconstruction. This is reflected in the Asphalt Price Index[5] tracked by Caltrans (see Figure 2.2), which shows more than a 10-fold increase from 2000 to 2008, but then a drop of almost 50 percent in 2009.

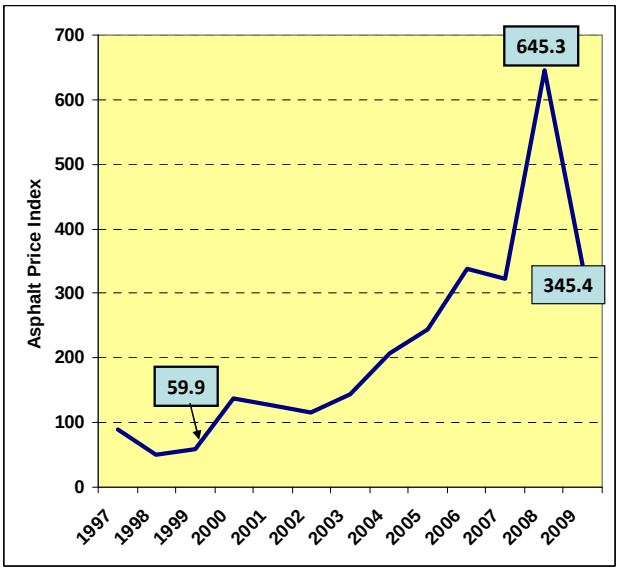


Figure 2.2 Caltrans Asphalt Price index[5] (1997-2009)

However, there is no expectation that the cost of road construction during the worst recession since the Great Depression will stay at this level for the next 10 years. Rather, most agencies have the opinion that this is a temporary situation. Given the volatility of crude petroleum prices in recent years, it was decided that the 2008 unit costs for overlays and reconstruction would be used in this analysis.

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 (less than 0.5 percent of the total network), that it was deemed not significant for this report.

2.1.4 Escalation Factors

As with the 2008 study, no escalation factors were used in this analysis. All numbers are in constant 2010 dollars, and this is consistent with the SHOPP as well as many Regional Transportation Plans (RTPs).

Nonetheless, a brief review of the Consumer Price Index (CPI) for urban areas for the two-year period from July 2008 to July 2010 indicates a small decline of 0.6 percent; therefore, the financial analysis in this chapter can be directly compared with the 2008 study.

[5] http://www.dot.ca.gov/hq/esc/oe/asphalt_index/astable.html

2.2. Average Network Condition

Based on the results of the surveys, the current (2010) pavement condition statewide is 66, a drop of approximately 2 points from 2008, when it was estimated at 68. Table 2.3 includes the current pavement condition index (PCI) for each county (includes cities within the county). Again, this is based on a scale of 0 (failed) to 100 (excellent). This is weighted by the pavement area, i.e., longer roads have more weight than short roads when calculating the average PCI.

From this table, we can see that the statewide ***weighted average*** PCI for all local streets and roads is 66, with major roads slightly better (68) and local roads slightly worse (65). The PCI ranges from a high of 77 in Placer County to a low of 31 in Lake County. Again, it should be emphasized that the PCI reported above is only the ***weighted average*** for each county and ***includes*** the cities within the county. This means that Lake County may well have pavement sections that have a PCI of 100, although the average is 31.

The average pavement condition index for streets and roads statewide dropped from 68 to 66. This rating is considered to be in the "at risk" category.

As was discussed in the 2008 study, an average pavement condition of 66 is not especially good news. While it seems just a couple of points shy of the "good/excellent" category, it has significant implications for the future. Figure 2.3 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. 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.

The factors that are causing this rapid deterioration in pavement condition include:

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

Therefore, a PCI of 66 should be viewed with caution – it indicates that our local streets and roads are, as it were, poised on the edge of a cliff.

Figure 2.4 shows the distribution of pavement conditions by county for both 2008 and 2010. As can be seen, a majority of the counties in the state have pavement conditions that are either "At Risk" (blue) or in "Poor" (red) condition. For 2010, this is 62 percent and 5 percent of the state's local streets and roads, respectively. Further, there has been an increase in the "blue" and "red" counties from 2008. Finally, despite their color, none of the "green" counties have a PCI greater than 77; in fact, the majority are in the low 70's, indicating that they will turn "blue" in a few years.

2/3 of California's local streets and roads have a PCI less than 70.

As a final note, the 2008 study predicted what the 2010 PCI would be given the expected funding (approximately $1.59 billion/year). The PCI was predicted to be 66, which is exactly where we are today.

Table 2.3 Summary of Inventory & Pavement Condition Data by County (Cities Included)

County*	Centerline Miles				Lane Miles				Current Average PCI**		
	All	Major	Local	Unpaved	All	Major	Local	Unpaved	All	Major	Local
Alameda County	3,394	1,262	2,132	0	7,841	3,586	4,255	0	67	70	65
Alpine County	135	38	15	82	270	75	30	164	45	50	30
Amador County	476	202	252	22	955	408	503	44	34	37	31
Butte County	1,782	530	978	274	3,643	1,203	1,932	508	67	72	65
Calaveras County	715	323	297	95	1,344	656	593	95	53	55	50
Colusa County	987	277	474	236	1,524	541	746	236	60	67	56
Contra Costa County	3,236	923	2,307	6	6,716	2,186	4,515	14	70	71	69
Del Norte County	334	79	146	109	675	178	290	207	68	68	68
El Dorado County	1,251	416	760	75	2,480	841	1,531	108	58	68	53
Fresno County	6,087	1,570	4,432	85	12,951	3,949	8,833	169	70	75	68
Glenn County	950	363	444	143	1,899	731	885	284	68	71	65
Humboldt County	1,484	715	591	178	2,968	1,491	1,178	300	56	53	59
Imperial County	2,994	1,244	1,743	6	6,088	2,610	3,468	11	72	72	73
Inyo County	1,142	61	465	616	2,158	122	928	1,108	57	64	56
Kern County	5,051	1,687	3,158	206	11,698	4,795	6,495	407	63	70	58
Kings County	1,328	425	833	70	2,796	962	1,694	140	62	69	58
Lake County	1,067	239	677	152	2,123	477	1,347	299	31	36	29
Lassen County	429	354	76	0	875	727	148	0	69	68	69
Los Angeles County	21,035	7,387	13,461	188	48,535	19,697	28,473	366	67	67	66
Madera County	1,822	564	1,193	66	3,680	1,151	2,416	113	48	58	43
Marin County	1,016	279	736	1	2,090	632	1,457	1	61	65	58
Mariposa County	1,122	176	542	404	561	88	271	202	44	64	38
Mendocino County	775	356	417	2	1,519	719	797	3	49	54	43
Merced County	2,330	868	1,299	163	4,954	1,967	2,661	326	58	65	53
Modoc County	1,515	394	631	490	3,041	800	1,260	980	40	52	32
Mono County	233	137	96	0	465	280	184	0	68	74	59
Monterey County	1,834	1,283	543	8	4,187	3,125	1,051	11	45	39	60
Napa County	718	223	494	1	1,504	502	1,001	1	60	66	57
Nevada County	764	278	338	148	1,550	581	673	296	71	69	74
Orange County	6,187	1,982	4,205	0	16,025	6,935	9,090	0	76	76	77
Placer County	2,012	503	1,449	60	4,183	1,173	2,890	120	77	80	75
Plumas County	704	220	271	212	1,409	442	543	424	66	70	62
Riverside County	7,332	2,656	4,626	49	16,328	6,818	9,416	94	72	74	71
Sacramento County	4,968	1,414	3,529	26	10,936	3,763	7,122	51	66	69	65
San Benito County	411	231	149	31	833	476	295	62	66	67	65
San Bernardino Co	8,667	3,243	4,717	707	20,139	9,057	9,619	1,463	70	70	70
San Diego County	7,676	4,068	3,507	101	18,743	10,806	7,735	202	69	69	70
San Francisco	912	325	587	0	2,061	937	1,124	0	63	59	65
San Joaquin County	3,402	1,033	2,350	19	7,159	2,500	4,620	39	70	72	70
San Luis Obispo Co	1,939	715	984	241	4,078	1,707	1,889	482	64	65	63
San Mateo County	1,872	579	1,278	15	3,909	1,349	2,531	29	70	73	68
Santa Barbara Co	1,597	594	988	15	3,391	1,410	1,951	30	70	73	68

County*	Centerline Miles				Lane Miles				Current Average PCI**		
	All	Major	Local	Unpaved	All	Major	Local	Unpaved	All	Major	Local
Santa Clara County	4,114	1,221	2,894	0	9,317	3,508	5,810	0	69	72	67
Santa Cruz County	871	185	686	0	1,812	454	1,358	0	48	60	43
Shasta County	1,722	669	817	236	3,547	1,470	1,628	449	67	76	58
Sierra County	499	182	106	211	1,001	368	211	423	71	71	71
Siskiyou County	1,495	535	463	497	3,005	1,088	924	993	57	62	52
Solano County	1,688	548	1,021	118	3,566	1,276	2,053	236	66	73	62
Sonoma County	2,350	723	1,627	0	4,901	1,643	3,258	0	50	62	42
Stanislaus County	2,694	867	1,785	42	5,912	2,289	3,540	83	51	53	49
Sutter County	1,029	279	587	163	2,106	624	1,156	326	56	59	54
Tehama County	1,197	328	595	275	2,401	658	1,194	549	65	69	63
Trinity County	916	286	406	223	1,608	572	813	223	50	55	46
Tulare County	3,957	947	2,896	113	8,181	2,218	5,738	225	68	70	67
Tuolumne County	532	211	284	37	1,228	511	643	74	62	62	62
Ventura County	2,416	764	1,647	4	5,297	2,063	3,225	9	66	67	65
Yolo County	1,346	431	793	122	2,611	939	1,498	175	67	70	64
Yuba County	724	282	340	102	1,504	592	708	204	56	55	57
Total or Average	**141,235**	**48,675**	**85,117**	**7,443**	**308,279**	**122,723**	**172,196**	**13,361**	**66**	**68**	**65**

* All cities within a county are included.

** Average PCI is weighted by pavement area.

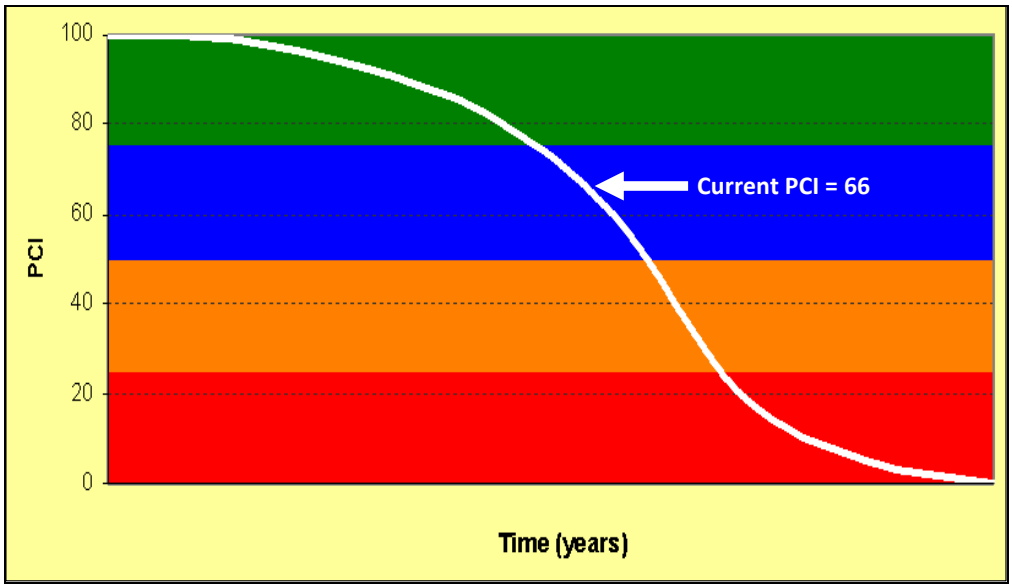


Figure 2.3 Generalized Pavement Life Cycle Curve

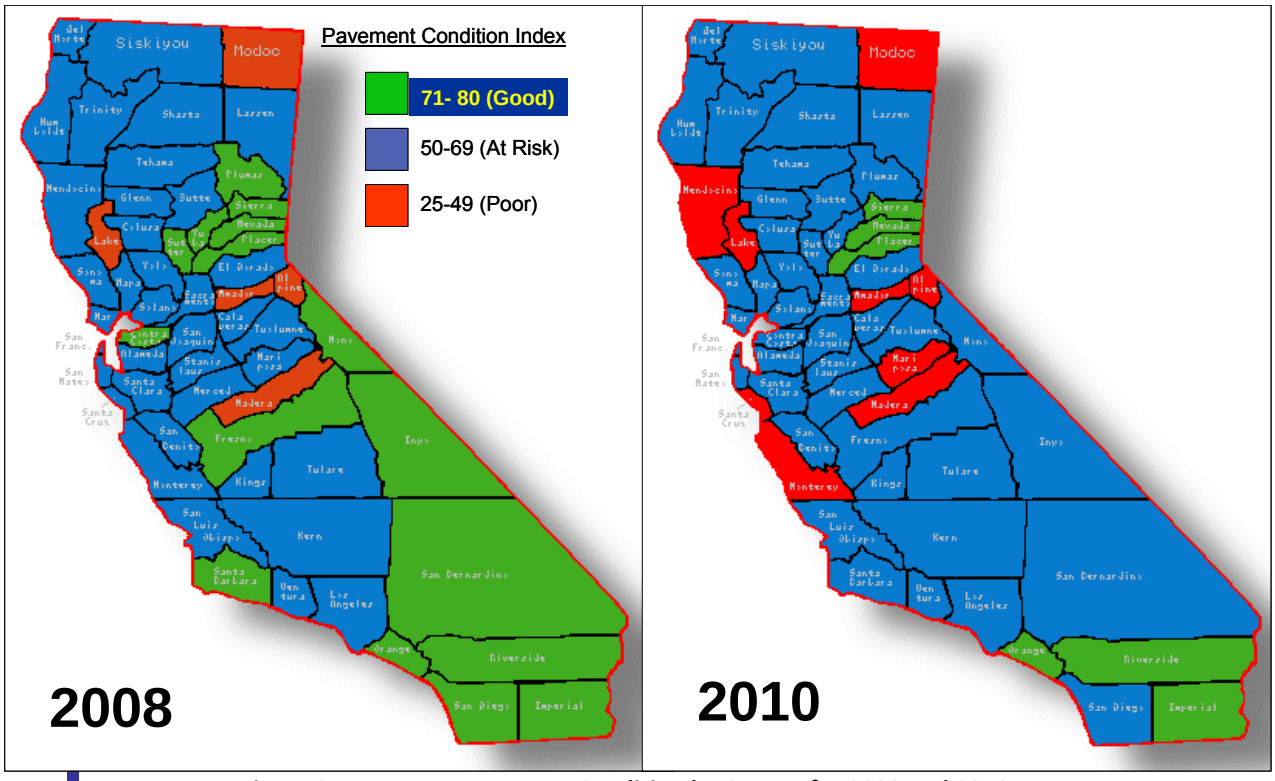


Figure 2.4 Average Pavement Condition by County for 2008 and 2010

2.3 Unpaved Roads

The needs assessment for unpaved roads is much simpler – 87 agencies reported data for a total unpaved road network of 7,443 centerline miles. The average cost of maintenance is $9,800 per centerline mile per year. Any pavement management software like StreetSaver® only analyzes paved roads, so the average cost for unpaved roads from the survey was used for those agencies that did not report any funding needs.

This results in a total 10-year needs of $729.4 million for 10 years.

2.4 Pavement Needs

The determination of pavement needs and unfunded backlog was described in detail in the 2008 report (see Appendix B^3 of 2008 report) and is therefore not duplicated here, but to briefly summarize, it requires four main elements for the analysis:

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

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 time period, e.g., Walnut Avenue may be overlaid in Year 1, and then slurried 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 possible to fully fund ***all*** the needs in the first year, thereby reducing the backlog to zero. However, the funding constraint for the scenario is to achieve our BMP goal within 10 years. Assuming a constant annual funding level for each scenario, the backlog will gradually decrease to zero by the end of year 10.

The results are summarized in Table 2.4 and indicate that $70.5 billion is required to achieve the BMP goals in 10 years. Again, this is in constant 2010 dollars. Detailed results by county for each scenario are included in Appendix B.

Table 2.4 Cumulative Pavement Needs

Cumulative Needs (2010 dollars)		
Year No.	**Year**	**Reach BMP Goal in 10 Years ($Billion)**
1	2011	$7.2
2	2012	$14.1
3	2013	$21.2
4	2014	$28.2
5	2015	$35.3
6	2016	$42.3
7	2017	$49.4
8	2018	$56.4
9	2019	$63.5
10	2020	$70.5

In 2008, the total 10-year need was $67.6 billion, so this is an increase of $2.9 billion or approximately 4.3 percent. Since the CPI between July 2008 and July 2010 was almost zero, these two values, for all intents and purposes, are comparable.

Pavement needs have increased to $70.5 billion.

The increase in needs may be attributable to two reasons:

- The overall pavement condition has decreased, from 68 to 66
- Some treatments have increased in costs.

Chapter 3. Essential Components' Needs Assessment

The analyses for the essential components (i.e., safety, traffic and regulatory elements) are quite different from those for the pavements. A regression equation developed in the 2008 study was used, and a case study approach applied to NPDES (National Pollutant Discharge Elimination System) costs.

3.1 Data Collection

A total of 296 survey responses were received compared to 188 in 2008. Agencies were asked to provide specific information on the inventory and replacement costs for the following twelve asset categories:

Asset Category	Essential Components
1	Storm Drains
2	Curb and gutter
3	Sidewalk (public)
4	Curb ramps
5	Traffic signals
6	Street Lights
7	Sounds Walls/Retaining walls
8	Traffic signs
9	Other elements e.g. manholes, inlets, culverts, pump stations etc
10	NPDES (addressed through the case studies)
11	Other ADA compliance needs
12	Other physical assets or expenditures

In the 2008 analysis, only the first eight categories were included because we had little or no data on the last four categories. In the 2010 update, significantly more data on the last four categories were received, so our approach was modified to address them. Essentially, we used the model from 2008 to determine the needs of the first eight categories, and then added the needs of the remaining four categories as a percentage.

3.2 Model Verification

The regression model developed in 2008 for the replacement cost of the **first eight categories** is:

$$ln\ Cost = 17.9 + 0.00189\ Total\ Miles - 2.09\ Type\_Rural + 0.682\ Climate\_Central$$

As part of the calculations, we first wanted to verify that the model was still valid. Combining both the 2010 and 2008 survey results, a total of 305 agencies with less than 1,700 centerline miles of roads reported their essential component replacement costs. Table 3.1 is a comparison between the total *reported* replacement cost and the total *calculated* replacement cost from the model.

Table 3.1 Comparison Between Calculated and Actual Replacement Costs

Reported Replacement Cost	Calculated Replacement Cost	Difference
$52,059,717,782	$53,852,175,263	3.4%

As can be seen, the difference is only about 3.4%, which validated the model for agencies with less than 1,700 centerline-miles.

However, 13 agencies with more 1,700 centerline miles also reported their replacement costs. The difference between their calculated and reported replacement costs was much larger and therefore, we concluded that the model was NOT valid when the network is more than 1,700 miles. This is not entirely surprising, since the model was developed with a much smaller dataset in 2008, and the agencies who responded had smaller networks— less than 1,700 miles.

There was only one agency with more than 1,700 miles that did not report their costs (Kern County, with 3,285 miles). Therefore, the replacement costs was estimated by using an average replacement cost per mile ($7,295/mile) from two other similar agencies (Fresno County and Tulare County, both in the same vicinity and with the same mixed climate as Kern County).

Finally, there were a few agencies who reported huge replacement costs, up to $1 billion/mile. Their costs were not used, and instead, the model was used to estimate their costs.

3.3 Determination of Essential Components' Needs

The regression model estimates the total replacement cost for only the first eight categories. To estimate the needs, this cost needs to be converted to an annual amount based on the estimated service life of the different non-pavement assets. This procedure was described in detail in Appendix D the 2008 report and has not been duplicated here.

Finally, the survey data submitted showed that the last four categories comprised 16.6 percent of the replacement costs of the first 8 categories. Therefore, 16.6 percent was added to the 10-year needs calculated from the model.

The needs for essential components is $29.1 billion in 2010 (does not include NPDES).

The 10-year needs figure was estimated to be **$29.1 billion**.

3.4 Impact of NPDES Regulations

In the 2008 study, very little information was received on the cost impacts of the NPDES permits. Anecdotally, however, many agencies believed that this had a significant cost impact on their transportation expenditures. Therefore, for the 2010 update, it was decided that a series of case studies should be performed to see if these impacts could be documented and quantified.

3.4.1 Background & Overview

As authorized by the Clean Water Act, the NPDES Permit Program controls water pollution by regulating sources that discharge pollutants into waters of the United States. The NPDES Program is responsible for significant improvements to our Nation's water quality. Under this program, all facilities which discharge ***pollutants*** from any ***source*** into ***waters of the United States*** are required to obtain a NPDES permit. In California, the NPDES Program is administered by the state.

Polluted stormwater runoff is commonly transported through Municipal Separate Storm Sewer Systems (MS4s), from which it is often discharged untreated into local water bodies. To help mitigate this problem, operators must obtain a NPDES permit and develop a stormwater management program. Dischargers are covered under Phase I or Phase II.

- **Phase I**, issued in 1990, requires *medium* and *large* cities or certain counties with populations of 100,000 or more to obtain NPDES permit coverage for their stormwater discharges (generally covered by individual permits).
- **Phase II**, issued in 1999, requires regulated small MS4s in urbanized areas, as well as small MS4s outside the urbanized areas that are designated by the permitting authority, to obtain NPDES permit coverage for their stormwater discharges (generally covered by a general permit).

Dischargers whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the ***General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ.*** Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

As part of this study, four case studies that included an urban and rural county, and a small and large city, were undertaken to determine the anticipated costs of the NPDES Program as it relates to transportation. The case studies were performed through an interview process with selected individuals from each jurisdiction and an examination of their financial records was conducted (where available). The four jurisdictions selected for this analysis included:

- Contra Costa County (urban county)
- El Dorado County – Tahoe Basin Portion Only (rural county)
- City of Encinitas (small city)
- City of San Jose (large city)

All four agencies represent a range of California Regional Water Boards, so that a representative sample of costs could be obtained. The case studies are presented below and include the location, population, NPDES permit coverage, transportation related tasks, and transportation related expenditures and expectations for each jurisdiction.

3.4.2 Contra Costa County

Location: Contra Costa County is a primarily suburban county in the San Francisco Bay Area. The County includes 19 incorporated cities and is 733 square miles in area.

Population: 1,051,677 as of January 1, 2008

NPDES Permits: The County is located within the jurisdiction of two Regional Water Quality Control Boards, each of which issues a separate MS4 NPDES Permit to the County. County projects are also subject to regulation by the State NPDES Construction General Permit.

- MS4 NPDES Permit (San Francisco Bay Regional Water Quality Board – Region 2) R2-2009-0074, NPDES Permit No. CAS612008 (Expires 2014)
- MS4 NPDES Permit (Central Valley Regional Water Quality Control Board – Region 5) R5-2010-0102 Permit No. CAS083313 (Expires 2015) – This permit was recently issued to bring it roughly into alignment with the Region 2 Permit (above) to provide coordination and prevent duplicative efforts.
- State NPDES Construction General Permit (CGP) No. 2009-009-DWQ, NPDES No. CAS000002 (Expires 2014)

NPDES transportation related tasks include:

- Street Sweeping
- Operations and Maintenance (including road maintenance, drainage facilities maintenance, sidewalk/plaza maintenance, catch basin inspections and maintenance, washing, graffiti removal, stormwater pump stations, and rural road construction)
- Permanent Drainage Facilities and BMPs (best management practices)
- Green Street Pilot Projects
- Low Impact Development (stormwater treatment to be implemented with harvest and use, infiltration and evaportranspiration, or bioretention)
- Capital Improvement Program (CIP) Project Construction Site Controls (Transportation Related)
- Storm Drain Inlet Markings
- Trash Capture Devices
- Litter Control
- Tracking and Reporting (Transportation Related)
  State NPDES Construction General Permit (CGP) No. 2009-009-DWQ, NPDES No. CA S000002
- "SMARTS" System Reporting
- SWPPP/WPCP Compliance
- Construction Site Management
- Erosion Control and Stormwater Treatment Measures

NPDES Transportation Related Expenditures: Contra Costa County estimated their NPDES transportation related expenditures to total $2.2 million for the 2009/2010 fiscal year. The County found it difficult to estimate expenditures because they do not have a NPDES tracking system or one specific budget dedicated to NPDES. This number is a rough estimate as expenditures occur across multiple departments and are not tracked specifically as NPDES expenditures in most cases. Another factor that complicates estimating costs is the fact that only certain projects are required to implement costly permanent stormwater treatment and flow control facilities. There can be a great deal of year-to-year variation in the number and magnitude of such projects undertaken by the County.

Future Expectations: Contra Costa County sees a general trend in their permit requirements towards more restrictive measures and increased costs. The County anticipates that for the remaining years of their current permits that the annual cost will increase by approximately 55 percent ($1.2 million) over the 2009/2010 fiscal year for a total of approximately $3.5 million per year for NPDES transportation related tasks.

3.4.3 El Dorado County (Tahoe Basin Portion)

Location: El Dorado County is a primarily rural county that ranges from the Lake Tahoe Basin through the Sierra foothills. This case study was conducted for the Lake Tahoe Basin portion of the County only. The Lake Tahoe Basin portion of the County includes one incorporated city (South Lake Tahoe) and is 219 square miles.

Population: approximately 34,327 as of January 1, 2008

NPDES Permits: The County is covered under the following NPDES permits:

- MS4 NPDES Permit (Lahontan Regional Water Quality Control Board – Region 6) R6T-2005-0026, NPDES Permit No. CAG616001 (Expired 2010 – Under permit until new permit is issued)
- NPDES General Construction Permit in the Lake Tahoe Hydrologic Unit (Lahontan Regional Water Quality Control Board – Region 6) R6T-2005-0007, NPDES Permit No. CAG616002 (Expired 2010 – Under permit until new permit is issued)

NPDES transportation related tasks include:

- Street Sweeping
- Operations and Maintenance
- CIP Projects/Environmental Improvement Program (EIP) Projects (erosion control measures and stormwater infiltration facilities)
- Stormwater Facilities Inventory
- Storm Drain Stenciling Program
- Inspections
- Monitoring
- Pollutant Load Reduction Strategy Development
- Tracking and Reporting (Transportation Related)
- SWPPP/WPCP Compliance
- Construction Site Management
- Erosion Control and Stormwater Treatment Measures

NPDES Transportation Related Expenditures: El Dorado County (Tahoe Basin Portion) estimated their NPDES transportation related expenditures to total $5.8 million for the 2009/2010 fiscal year. It is worth noting that the County is a unique case study as it covers a relatively small, rural area but includes some strict and unique permit requirements. The County found it difficult to estimate expenditures because they do not have a NPDES tracking system or one specific budget dedicated to NPDES. This number is a rough estimate as expenditures occur across multiple departments and are not tracked specifically as NPDES expenditures in most cases. This number includes the total costs of all transportation related EIP projects.

Future Expectations: The County sees a general trend in their permit requirements towards more restrictive measures and increased costs. The County anticipates that for the future permit term the annual cost will increase by 10 to 25 percent, but for the purposes of this effort, the County estimated the increase to be approximately 15 percent ($0.9 million) over the 2009/2010 fiscal year for a total of approximately $6.7 million per year for NPDES transportation related tasks. As more EIP projects are implemented, this number could be affected. This is a difficult number to estimate, as the new permit has yet to be issued. This number is based on the expected permit conditions based on conversations between the Lahontan Regional Water Quality Control Board and the County.

3.3.4 City of Encinitas

Location: The City of Encinitas is a small coastal beach city located along six miles of Pacific coastline in northern San Diego County. The City is 19.4 square miles.

Population: 64,145 as of January 1, 2009

NPDES Permits:

The City is covered under the following NPDES permits:

- MS4 NPDES Permit (San Diego Regional Water Quality Control Board – Region 9) R9-2007-0001, NPDES Permit No. CAS0108758 (Expires 2012)
- State NPDES Construction General Permit (CGP) No. 2009-009-DWQ, NPDES No. CAS000002 (Expires 2014)

NPDES transportation related tasks include:

- Development Planning (including City of Encinitas Stormwater Manual, San Diego Region Hydromodification Management Plan, and Treatment Control BMP Inventory Management Program)
- Operations and Maintenance (including inspections, verifications, and maintenance)
- Construction (including construction site inventory and prioritization, BMPs for Construction Activities, and inspections)
- Illicit Discharge Detection and Elimination (including inspections and monitoring)
- Municipal (including Jurisdictional Urban Runoff Management Program (JURUMP), street sweeping, and MS4 facilities [catch basins, storm drain inlets, open channels, etc.])
- Capital Improvement Program (CIP) Project Construction Site Controls (Transportation Related)
- Tracking and Reporting (Transportation Related)
- "SMARTS" System Reporting
- SWPPP/WPCP Compliance
- Construction Site Management
- Erosion Control and Stormwater Treatment Measures

NPDES Transportation Related Expenditures: The City of Encinitas roughly estimated their NPDES transportation related expenditures to total $1.7 million for the 2009/2010 fiscal year. The City found it difficult to estimate and quantify expenditures due to NPDES requirements affecting nearly all departments, functions, resources, and programs. The San Diego region has started a concerted effort to standardize fiscal assessments to better capture all costs related to stormwater mandates. As such, it is conceivable that as stormwater programs continue to evolve, it will be easier to define expenditures.

Future Expectations: The City anticipates costs related to NPDES transportation related tasks to increase in the future based upon the perpetual evolution of the regulatory dynamic that mandates measures that are more restrictive. The City anticipates that for the remaining years of their current permit that the annual cost will increase by approximately 10 percent ($0.17 million) over the 2009/2010 fiscal year for a total of approximately $1.9 million per year for NPDES transportation related tasks.

3.4.5 City of San Jose

Location: The City of San Jose is the largest city in the San Francisco Bay Area, located roughly 50 miles south of San Francisco in Santa Clara County. The City covers 178 square miles.

Population: 1,023,000 as of January 1, 2010

NPDES Permit:

The City is covered under the following NPDES permits:

- MS4 NPDES Permit (San Francisco Bay Regional Water Quality Board – Region 2) R2-2009-0074, NPDES Permit No. CAS612008 (Expires 2014)
- State NPDES Construction General Permit (CGP) No. 2009-009-DWQ, NPDES No. CAS000002 (Expires 2014)

NPDES transportation related tasks include:

- Street Sweeping
- Operations and Maintenance (including road maintenance, drainage facilities maintenance, sidewalk/plaza maintenance, catch basin inspections and maintenance, washing, graffiti removal, stormwater pump stations, and rural road construction)
- Permanent Drainage Facilities and BMPs
- Green Street Pilot Projects
- Low Impact Development (stormwater treatment to be implemented with harvest and use, infiltration and evaportranspiration, or bioretention)
- Capital Improvement Program (CIP) Project Construction Site Controls (Transportation Related)
- Storm Drain Inlet Markings
- Trash Capture Devices
- Litter Control
- Tracking and Reporting (Transportation Related)
- "SMARTS" System Reporting
- SWPPP/WPCP Compliance
- Construction Site Management
- Erosion Control and Stormwater Treatment Measures

NPDES Transportation Related Expenditures: The City of San Jose estimated their NPDES transportation related expenditures to total $13.4 million for the 2009/2010 fiscal year. The City found it difficult to estimate expenditures because they do not have a NPDES tracking system or a specific budget dedicated to NPDES. This number is a rough estimate as expenditures occur across multiple departments and are not tracked specifically as NPDES expenditures in most cases.

Future Expectations: The City sees a general trend in their permit requirements towards more restrictive measures and increased costs. The City anticipates that for the remaining years of their current permits that the annual cost will increase by approximately 10 percent ($1.3 million) over the 2009/2010 fiscal year for a total of approximately $14.8 million per year for NPDES transportation related tasks.

3.4.6 Conclusions

The NPDES program is an excellent example of a regulatory requirement that is not funded. Because of new and evolving criteria, it is also difficult for cities and counties to estimate future needs with any degree of accuracy.

Therefore, the information presented in the above case studies is anecdotal in nature for a number of reasons:

- Expenditures are difficult to estimate due to lack of detailed and consistent tracking of NPDES expenditures across multiple departments, functions, resources, and programs. Estimates were made based on the best available information.
- Future expectations (and therefore expenditures) are difficult to estimate due to unforeseen future permit conditions, constantly changing requirements, and TMDL implementation.
- Permit conditions and requirements vary greatly between jurisdictions which make direct comparisons difficult.

Although this information includes rough estimates, it still lends itself to making general conclusions about transportation related NPDES expenditures. Table 3.2 compares the estimates provided by each jurisdiction for transportation related NPDES expenditures for fiscal year 2009/2010.

Table 3.2 – NPDES Case Study Summary (FY 2009/2010)

Jurisdiction	Contra Costa County	El Dorado County (Tahoe Basin)	City of Encinitas	City of San Jose
NPDES Expenditures ($ M)	$ 2.24	$ 5.82	$ 1.70	$ 13.41
Anticipated Future Increase ($ M/year)	$ 1.23	$ 0.87	$ 0.17	$ 1.34

Assumptions/Notes:

* Difficult to estimate due to lack of detailed and consistent tracking across all departments, functions, resources, and programs

* The above numbers are estimates based on the best available information

* Transportation Expenditures includes Capital Improvement Program Expenditures

* Huge variability between the permit conditions and requirements for each jurisdiction

* El Dorado County (Tahoe Basin) is a unique case study as it is for a relatively small area but includes some strict/unique requirements

Based on the case studies, the following conclusions may be made:

- Transportation related NPDES costs (as well as NPDES costs in general) are anticipated to increase in the future due to the perpetual evolution of the regulatory dynamic that mandates measures that are more restrictive. Costs are anticipated to increase between 10 percent and 55 percent. This increase varies greatly due to the size and type of the

jurisdiction, the permit(s) that covers the jurisdiction, and unknown future permit and TMDL requirements.

- Improved tracking of NPDES expenditures needs to take place in order to better estimate actual expenditures. Each of the jurisdictions are working on systems to better track NPDES expenditures in a consistent and accurate manner, but most are still a few years out in this effort.
- There is a large range in costs, from a low of 2 percent to a high of 55 percent. Much of the variability is probably due to differences in how costs are collected, as well as the different permit requirements and the existing practices of condition of the agencies.

Because of the large variability in costs, it was not possible to extrapolate any of these results statewide. However, it seems clear that there is a significant impact on transportation costs. Therefore, we recommend that future updates include a more intensive study of NPDES impacts.

Chapter 4. Funding Analyses

4.1 Pavement Revenue Sources

The online survey also asked agencies to provide both their revenue sources and pavement expenditures for FY 2008-09, FY 2009-10, as well as estimating an annual average for future years. A total of 300 agencies responded with financial data in 2010, compared to only 137 in 2008. This huge improvement was attributable to the fact that the contact letters (see Appendix A) were also mailed to the Directors of Finance or Controllers for all the agencies in this update.

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):

Federal

- Regional Surface Transportation Program (RSTP)
- Congestion Mitigation & Air Quality Improvement (CMAQ)
- Emergency Relief
- High Risk Rural Roads (HR3)
- Safe Routes to School (SRTS)
- Transportation Enhancement Activities (TE)
- Community Development Block Grants (CDBG)
- ARRA Stimulus Funds
- Public Lands

State

- Gas taxes (Highway User Tax Account or HUTA)
- Proposition 1B
- Proposition 42/AB 2928
- State Transportation Improvement Program (STIP)
- AB 2766 (vehicle surcharge)
- Bicycle Transportation Account (BTA)
- Safe Routes to School (SR2S)
- Transportation Development Act (TDA)
- AB 1546 Vehicle License Fees (VLF)
- Integrated Waste Management Board grants
- State Local Partnership Program (SLPP)
- State Water Resource Control Board
- Traffic Safety Fund
- Transportation Uniform Mitigation Fee (TUMF)

Local

- General funds
- Local sales taxes
- Developers fees
- Various assessment districts – lighting

- Redevelopment
- Traffic impact fees
- Traffic safety/circulation fees
- Utilities
- Transportation mitigation fees
- Parking and various permit fees
- Flood Control Districts
- Enterprise Funds (solid waste and water)
- Investment earnings
- Parcel taxes

Table 4.1 summarizes the percentage of funding sources from the different categories for FY 2008-09 to FY 2009-10, as well as the estimated sources for future years. The breakdown is similar to the results from the 2008 study.

Table 4.1 Funding Sources for Pavements

Revenue Sources	Annual Funding ($ million) FY 2008/09	FY 2009/10	Estimated for FY 10/11 Onwards	% of total
Federal	$ 167*	$ 390*	$ 68	6%
State	$ 1,032	$ 819	$ 698	61%
Local	$ 458	$ 453	$ 374	33%
Total	**$ 1,658**	**$ 1,663**	**$ 1,140**	**100%**

Data based on 300 survey responses.

*ARRA accounted for $50 million in FY 08/09 and $293 million in FY 09/10

Cities and counties rely on the state for almost two-thirds of their funding.

Note that most of the American Recovery and Reinvestment Act (ARRA) is reflected in FY 2009-10, although there were some shown for FY 2010-11 for the second wave of projects. The more important item to note is that cities and counties do not rely heavily on federal funds, with the exception of ARRA. Rather, state and local funds typically make up almost 90 percent of pavement funding, with state funds as the predominant source with 61 percent. Finally, there is a disturbing trend in Table 4.1, showing that total funding sources are declining. The survey responses indicate that they expect a drop in funding of almost $500 million in future years.

Funding from the Highway User Tax Account (HUTA), more commonly known as the gas tax, is by far the single largest funding source for cities and counties. For this survey, new HUTA, which replaced the sales tax on gasoline (Proposition 42) under the March 2010 transportation tax swap, and old HUTA have been combined in Table 4.2, which shows the gas tax trends. Although the status of new HUTA funding is uncertain due to recent passage of Propositions 22 and 26 in the November 2010 General Election, the total amount of gas tax shows a declining trend (See Appendix D for more information on the status of state transportation funding as of January 2011).

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 who receive General Funds is markedly declining. Given the economic climate and predictions that California will lag behind the economic recovery in the rest of the nation, it is expected that this trend will continue in the near future.

Of final interest is the trend in local sales tax measures that have passed. Table 4.4 shows an increasing reliance on the revenues from this source. Although it was only 10 percent of total pavement revenues in the previous two years, that is expected to jump to 16 percent beginning in FY 2010-11.

Table 4.2 Gas Tax Trends

	Annual Funding ($ million)		
Gas Tax*	**FY 2008/09**	**FY 2009/10**	**Estimated for FY 10/11 Onwards**
New HUTA (Section 2103)	$ 223	$ 144	$ 83
Old HUTA (Section 2104-2107)	$ 457	$ 421	$ 472
Total	**$ 680**	**$ 564**	**$ 555**
% of state revenues	66%	69%	79%
% of total revenues	41%	34%	49%

*Data from 300 responses

Table 4.3 General Fund Trends

	FY 2008/09	FY 2009/10	Estimated for FY 10/11 Onwards
# agencies	132	62	55
General Fund ($M)	$ 123	$ 74	$ 101

Table 4.4 Local Sales Tax Trends

	FY 2008/09	FY 2009/10	Estimated for FY 10/11 Onwards
Sales Tax ($M)	$ 174	$ 160	$ 185
% of local funds	38%	35%	49%
% of total funds	10%	10%	16%

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
- Operations and maintenance

Table 4.5 shows the breakdown in pavement expenditures for cities, counties and cities/counties combined. These were consistent for all the years reported. Encouragingly, approximately 14-16 percent of pavement expenditures are for preventive maintenance, which indicates that many agencies are cognizant of the need to preserve pavements. This is similar to the trend reported in the 2008 study.

Table 4.5 Breakdown of Pavement Expenditures ($M)

Type of Expenditures	FY 2008/09	FY 2009/10*	Estimated for FY 10/11 Onwards
Prev.Maint	$ 239	$ 236	$ 203
Rehab & Recon.	$ 744	$ 884	$ 762
Other	$ 122	$ 108	$ 82
Opns & Maint.	$ 348	$ 343	$ 366
Total	**$ 1,453**	**$ 1,571**	**$ 1,414**

Data from 300 responses

* Includes ARRA (approximately $290 million)

Cities and counties are estimated to spend $1.42 billion annually on pavements.

On average, anticipated pavement expenditures for the next ten years are expected to be **$5,089/lane-mile for counties** and **$3,734/lane-mile for cities.** This analysis is slightly different than that used in the 2008 study, which was based on a centerline-mile basis. Since lane-mile is a better indicator of expenditures, it was used in this study.

The resulting total pavement expenditures for all 537 cities and counties were therefore estimated to be $1.42 billion annually. This is less than the $1.59 billion that was reported in the 2008 study. However, the $1.42 billion is consistent with the expenditures from the previous two years (see Table 4.5) if ARRA funds are not included. This indicates that cities and counties are actually spending less than what they projected in 2008.

To put this funding level in perspective, $1.42 billion/year is only 0.5 percent of the total investment in the pavement network, which is estimated to be $271 billion.

4.3 Essential Components' Revenue Sources

Similarly to the analysis in Section 4.1, the revenue sources for the essential components is shown in Table 4.6 below. Again, federal funds have a small contribution to the cities and counties, in the order of 10 percent. However, unlike pavements, local sources now account for almost 60 percent of total revenues, with state revenues only accounting for 31 percent. Again, the general declining trend is similar to that for pavements.

Table 4.6 Funding Sources for Essential Components ($M)

Revenues Sources	FY 2008/09	FY 2009/10	Estimated for FY 10/11 Onwards	% of total
Federal*	$ 47	$ 65	$ 35	10%
State	$ 125	$ 119	$ 105	31%
Local	$ 268	$ 219	$ 201	59%
Totals	**$ 440**	**$ 403**	**$ 341**	**100%**

Based on 300 responses.

* ARRA accounted for $20 million in FY 2009/10.

Since local revenues form the majority of the funding, Table 4.7 explores the four largest funding sources: general funds, development/redevelopment funds, local sales taxes and other. In the last

category are mostly stormwater, sanitary, NPDES related sources. Again, the overall trend shows declining revenues.

Table 4.7 Local Revenue Sources for Essential Components ($M)

	Annual Funding ($ million)		
Local Revenue Sources	FY 2008/09	FY 2009/10	Estimated for FY 10/11 Onwards
General Fund	$ 51	$ 46	$ 71
Development/Redev.	$ 69	$ 39	$ 22
Local Sales Tax	$ 41	$ 34	$ 32
Other	$ 107	$ 99	$ 76
Totals	**$ 268**	**$ 219**	**$ 201**

4.4 Essential Components' Expenditures

Table 4.8 details the expenditures by category. Traffic signals are the largest component, but five large agencies account for half of the expenditures in this category. Storm drains, curb and gutters, street lights and sidewalks round off the next largest categories. As was noted in previous tables, there is a declining trend in expenditures.

Table 4.8 Breakdown of Expenditures for Essential Components

	Annual Expenditures ($ million)			
Essential Components	FY 2008/09	FY 2009/10	Estimated for FY 10/11 Onwards	% of total
Traffic signals*	$ 124	$ 110	$ 106	28.8%
Storm Drains	$ 75	$ 121	$ 73	19.7%
Curb & gutter/ADA ramps	$ 43	$ 53	$ 45	12.3%
Street Lights	$ 47	$ 44	$ 43	11.7%
Sidewalk	$ 34	$ 38	$ 33	8.9%
Other elements	$ 45	$ 43	$ 32	8.6%
Traffic signs	$ 30	$ 28	$ 27	7.3%
Sounds Walls/Retaining walls	$ 9	$ 11	$ 10	2.6%
Totals	**$ 408**	**$ 449**	**$ 368**	**100%**

* 5 agencies account for 40-50% of expenditures

Cities and counties are estimated to spend almost $679 million annually on essential components.

On average, anticipated expenditures for essential components over the next ten years are expected to be $1,213/lane-mile for counties and $2,898/lane-mile for cities. The resulting total expenditures for all 537 cities and counties were therefore estimated to be $678.9 million annually. This is almost half of the $1.24 billion that was reported in the 2008 study! Again, it appears that cities and counties have significantly reduced budgets, even from two years ago.

4.5 Funding Shortfalls

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

Table 4.9 summarizes the results of all the preceding analyses and determines the funding shortfall to be $78.6 billion. This does not include any NPDES costs, since it was not possible to determine what these statewide impacts were (see Section 3.4).

Table 4.9 Summary of 10 Year Needs & Shortfall (2010 $ Billion)

Transportation Asset	Needs	Funding Available	Shortfall
Pavements	$ 70.5	$ 14.2	$ (56.3)
Essential Components*	$ 29.1	$ 6.8	$ (22.3)
Totals	**$ 99.6**	**$ 21.0**	**$ (78.6)**

* Does not include NPDES

In the 2008 study, the funding shortfall identified was $71.4 billion, so this is an increase of $7.2 billion, or approximately 10 percent.

The shortfall for local streets and roads is estimated at $78.6 billion!

4.6 Pavement Funding Scenarios

The State of California is facing severe budget difficulties that will affect a wide range of services throughout the state including transportation. There is an expected deficit of over $25 billion for FY 2010/11 alone. Together with the potential implications on state transportation funding from the passage of Propositions 22 and 26 in the November 2010 General Election, the funding outlook for local streets and roads is grim. Over the past two years, the results of the 2008 study have helped educate policy makers and prevented severe cuts to road funding. To further assist policy makers on how potential cuts will affect pavement conditions, this update included the results of four different funding scenarios:

1. Existing funding ($1.42 billion per year).
2. Loss of old and new Highway User Tax Account (HUTA) funds for three years (resulting in $0.763 billion per year for the first three years, then reverting to $1.42 billion for the next seven years).
3. Permanent loss of new HUTA (i.e., resulting in a funding level of $1.25 billion per year).
4. Funding to maintain current pavement condition at PCI = 66
5. Existing Funding – (Fix worst streets first - $1.42 billion per year) - this is similar to Scenario 1, but the worst streets are repaired first. This is commonly known as a "worst first" scenario.

The first scenario was the result of the funding analysis described previously in this chapter, and looks at the impacts of the existing funding available. Scenario 2 determines the impacts of losing both old HUTA and new HUTA (replacement to the sales tax or Prop. 42) funds for the first three years, and

then reverting to the existing level of $1.42 billion/year for the remaining seven years of the analysis period.

The third scenario was in anticipation of Proposition 26 passing in the November 2010 election. Based on preliminary legal opinions, the passage of Prop. 26 invalidates the tax swap that occurred in March 2010, which eliminated the sales tax on gasoline (Prop. 42), and replaced it with an increase in the excise tax (aka "new HUTA"). Therefore, one potential impact is that cities and counties would lose the new HUTA funding, thus reducing the annual funding to an estimated $1.25 billion for pavements.

Scenario 4 determines the funding required to maintain the average pavement condition at a PCI of 66. Finally, a fifth scenario was added to address a common question – why don't we fix the worst streets first?

Scenario 1: Existing Funding ($1.42 billion/year)

In this scenario, the most cost-effective treatments are placed first, which tend to be preventive maintenance or preservation strategies, such as seals. Therefore, at the existing funding level of $1.42 billion/year, the pavement condition is expected to deteriorate to 54 by 2020, and the unfunded backlog will almost double, from $39.1 billion to $63.6 billion. Again, these are in constant 2010 dollars. Figure 4.1 graphically illustrates these two trends. Note that the 2011 PCI for all the scenarios is the result ***after*** the first year's budget has been spent.

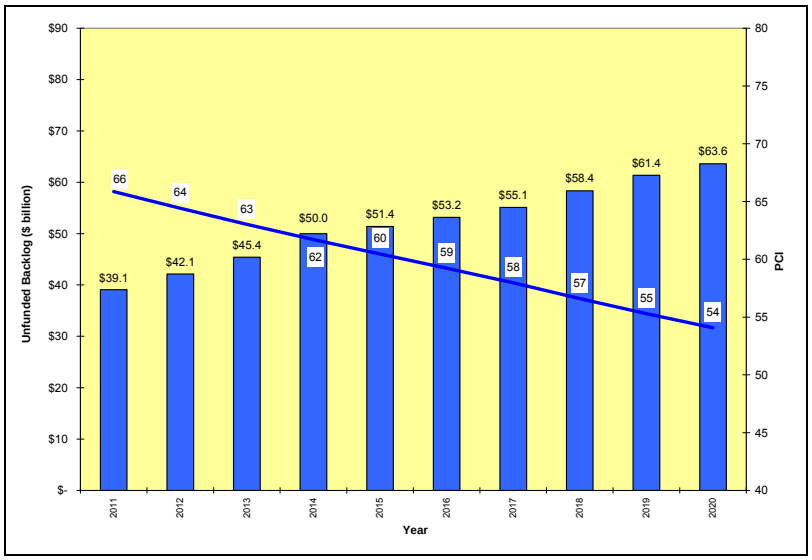


Figure 4.1 Results of Scenario 1: Existing Budget ($1.42 billion/year)

Scenario 2: Loss of HUTA for Three Years ($763 million/year then $1.42 billion/year)

In this scenario, both old and new HUTA funds are assumed to be lost for the first three years, resulting in a funding level of $763 million/year, before reverting back to $1.42 billion/year. The pavement condition is expected to deteriorate to 53 by 2020. The unfunded backlog will almost double, from $39.1 billion to $65.8 billion (see Figure 4.2). Again, note that the 2011 PCI for all the scenarios is the result ***after*** the first year's budget has been spent.

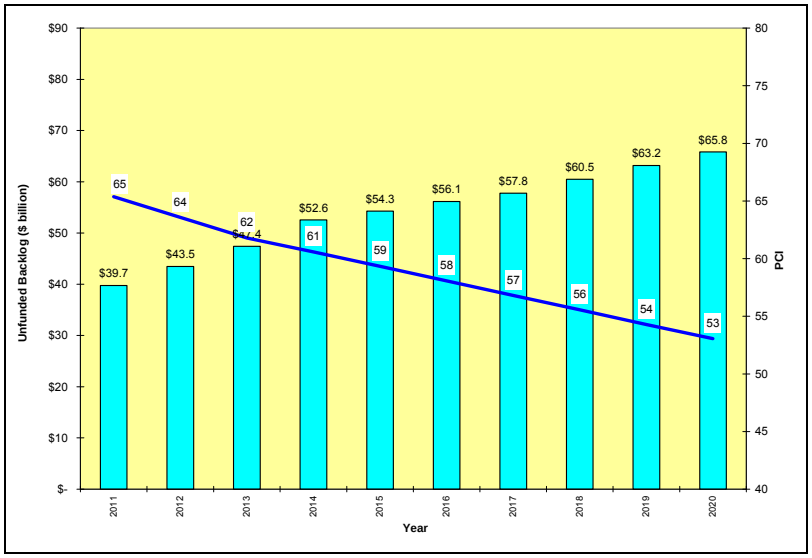


Figure 4.2 Results of Scenario 2: Loss of HUTA for Three Years

Scenario 3: Loss of New HUTA ($1.25 billion/year)

Assuming the permanent loss of new HUTA funds (i.e., potential consequence of Proposition 26), Scenario 3 would mean a funding level of $1.25 billion/year. Therefore, the pavement condition will also deteriorate to 53. However, the more significant impact is the unfunded backlog that will grow to $67.6 billion by 2020 (see Figure 4.3). Again, note that the 2011 PCI for all the scenarios is the result ***after*** the first year's budget has been spent.

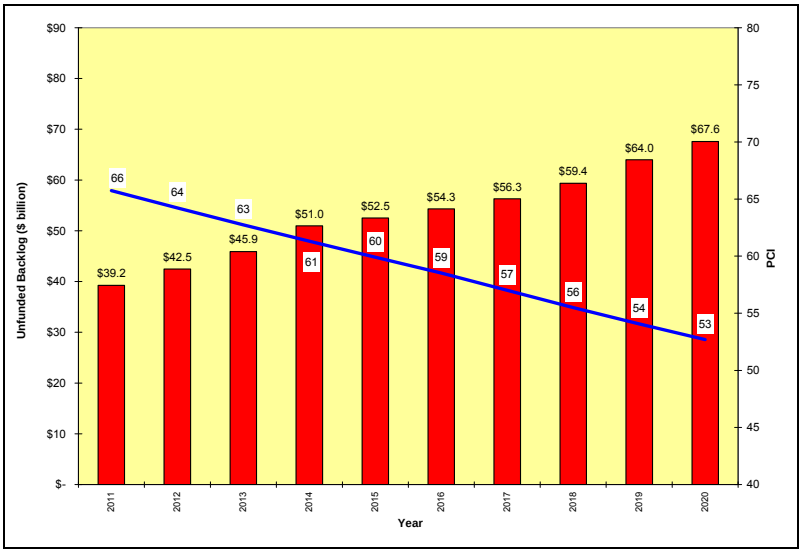


Figure 4.3 Results of Scenario 3: Permanent Loss of new HUTA ($1.25 billion/year)

Scenario 4: Maintain PCI at 66 ($3.1 billion/year)

Finally, in order to maintain the pavement condition and unfunded backlog at existing conditions (i.e., PCI = 66 and unfunded backlog at $37 billion), an annual funding level of $3.1 billion is required (see Figure 4.4). This funding level is more than twice the current level of $1.42 billion/year. Again, note that the 2011 PCI for all the scenarios is the result ***after*** the first year's budget has been spent.

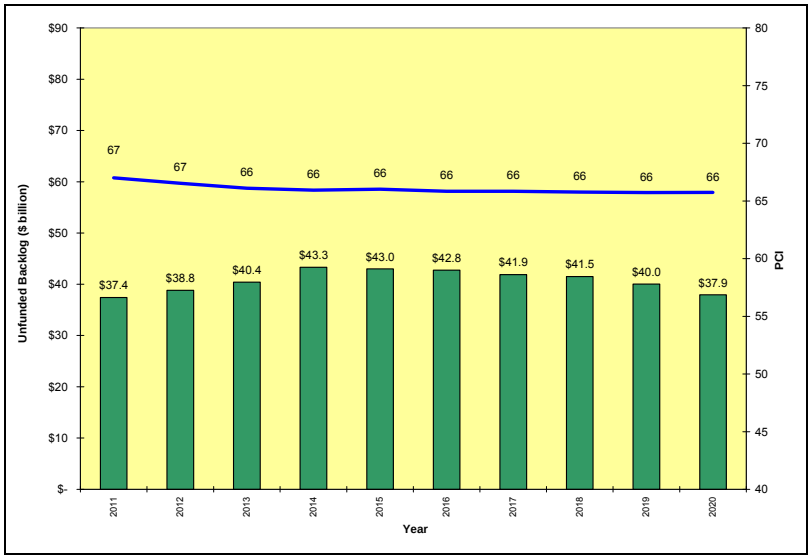


Figure 4.4 Results of Scenario 4: Maintain PCI = 66 ($3.1 billion/year)

Scenario 5: Existing Funding ($1.42 billion/year) – "Worst First" Strategy

A common question often asked is "Why don't we repair the worst streets first?" The results of this strategy is illustrated below in Figure 4.5. The only difference between this scenario and Scenario 1 is how repairs are prioritized. In Scenario 1, the most cost-effective treatments are selected first. In Scenario 5, the worst streets are repaired first. However, because the worst streets all require reconstruction, and reconstruction costs are so high, the $1.42 billion/year has little impact on the total number of streets in this condition. In addition, the "good" streets that needed relatively inexpensive seals are allowed to deteriorate, and eventually will require more expensive treatments.

Therefore, the resulting PCI is 52, and the unfunded backlog is significantly higher than in Scenario 1: $68.4 billion instead of $63.6 billion. The conclusion is that a "worst first" strategy would result in a lower pavement condition overall, and a higher unfunded backlog.

Again, note that the 2011 PCI for all the scenarios is the result ***after*** the first year's budget has been spent.

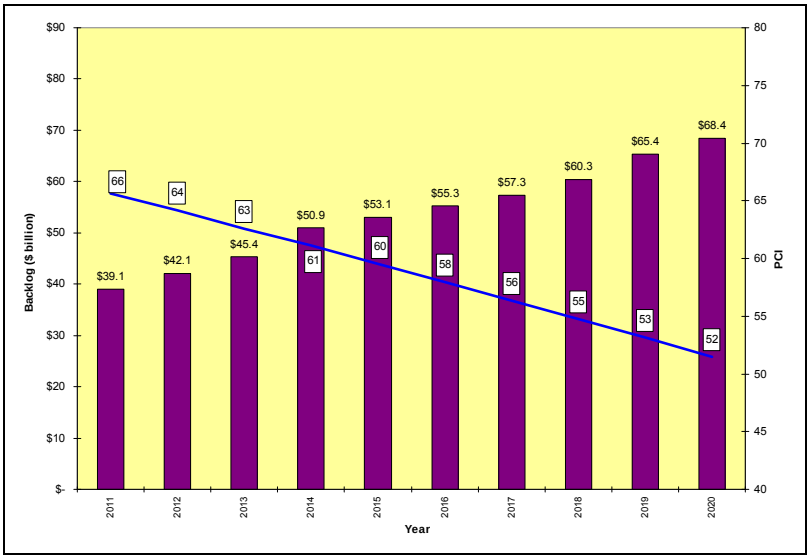


Figure 4.5 Results of Scenario 5: Existing Funding ($1.42 billion/year) – Worst First Strategy

Other Perfomance Measures

Although both PCI and the unfunded backlog are common performance measure 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 4.10 below illustrates the breakdown in pavement area for each funding scenario.

Table 4.10 Percent of Area by Condition Category in 2020 for Each Funding Scenario

Condition Category	Current Breakdown (2010)	Scenario 1: Existing Budget	Scenario 2: Lose HUTA+Prop 42 for 3 years	Scenario 3: Lose Prop. 42	Scenario 4: Maintain PCI at 66	Scenario 5: Existing Budget, Worst First
PCI 70-100 (Good to Excellent)	57.0%	43.3%	41.1%	39.3%	77.6%	25.6%
PCI 50-69 (At Risk)	21.5%	22.3%	22.4%	23.9%	0.0%	36.4%
PCI 25-49 (Poor)	15.4%	12.0%	13.4%	13.2%	4.7%	21.8%
PCI 0-24 (Failed)	6.1%	22.4%	23.1%	23.6%	17.7%	16.2%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	100%

The biggest impact that jumps out is that the percentage of pavements in failed condition today is estimated to be approximately 6.1 percent; however, under Scenarios 1 to 3, this will grow from 22 percent to 24 percent by 2020. Or to be blunter, almost a quarter of local streets and roads will be considered "failed" by 2020. The photos below are examples of "failed" pavements.

Almost a quarter of California's streets will be in "failed condition" by 2020 with existing funding.

Another trend of note is that while Scenario 4 maintains the existing condition and unfunded backlog, there is still a significant growth in the percentage of pavements that are "failed" (from 6.1 percent to 17.7 percent). The good news is that the preservation strategies will also dramatically improve the percent of pavements in the "good to excellent" category from 57 percent to 77.6 percent.

Finally, note the differences in results between Scenarios 1 and 5. Although the same budget is used, the "worst first" strategy in Scenario 5 results in a much lower percentage of roads in good condition (25.6 percent vs. 57 percent in Scenario 1). Conversely, almost 75 percent of streets will be at risk or worse, compared to 43 percent.

Finally, a short note on the definitions of a "distressed highway." As was described in Chapter 1, Caltrans has a goal of reducing the percentage of distressed highways from the current level of 28 percent to 10 percent. Distressed highways in this definition are those highways that require capital preventive maintenance and rehabilitation. When applied to a local street or road, this includes all the streets in the "At Risk" category and below. Applying the Caltrans definition would mean that currently, 43 percent of local streets and roads are "distressed".

4.7 Funding to Maintain Network at BMP

Additional analyses were performed to determine the funding required to *maintain* the pavement network after the BMP goal was reached in 10 years. An iterative process was used to calculate the funding level required to maintain the pavement condition at this level .

This was determined to be $2.3 billion annually, an increase from the $1.8 billion that was reported in the 2008 study. The difference is almost entirely due to the increase in the cost of seals that preserve the pavements once they have reached the BMP.

4.8 Summary

From the results of the four funding scenarios, it is apparent that:

1. The first three funding scenarios show the negative impacts of inadequate funding on local streets and roads, in that the pavement condition is expected to deteriorate and the unfunded backlog will grow over the next ten years.
2. Although the resulting PCI in 2020 is not dramatically different for the three scenarios, it should be kept in mind that the PCI is a relatively insensitive indicator. Rather, the more significant impact is the unfunded backlog; Scenario 3 (permanent loss of new HUTA) has a worst impact, because the unfunded backlog will almost double to $67.6 billion by 2020.
3. Comparing Scenarios 1 and 5, the best strategy is the "best first" strategy, not the "worst first".
4. In order to maintain the existing pavement condition, it will require a funding level of $3.1 billion/year, more than twice the existing level. This would dramatically improve the percentage of pavements in the "good to excellent" category from 57 percent to 77.6 percent. Unfortunately, the percentage of pavements in the "failed" category also grows from 6.1 percent to 17.7 percent.
5. If the BMP goal is met in 10 years, then it will require approximately $2.3 billion/year to maintain the pavements at the level in subsequent years.
6. A $1 deferred today will result in a higher cost of $1.53 in 10 years, assuming that there is no increase in construction or labor costs.

Chapter 5. Bridges

Bridges are an integral part of the transportation system, and therefore a study such as this one would be incomplete without a short discussion of their needs. Unfortunately, as with the 2008 study, there have been no statewide local bridge needs assessment performed in California. Some MPOs such as MTC have performed bridge assessments[6] for their regions, but these are just pieces of the bigger picture.

However, for this study, Los Angeles County was able to provide some estimates performed by Quincy Engineering (QE). The data and assumptions come from both Caltrans as well as past bridge projects from QE.

As before, local bridges are defined as bridges that are owned by a county, city or town or by a local park. Transit or railroad bridges (e.g. bridges owned and maintained by BART – Bay Area Rapid Transit) are not included in this category. According to Caltrans, there are approximately 12,000 state bridges and 12,562 local bridges[7]. However, this does not include structures such as culverts and bridges that have a span of less than 20 feet.

Caltrans maintains a bridge management system (PONTIS) that contains inventory and condition data for all the bridges in the state, regardless of whether a city/county owns it. This condition data assists in determining what bridge repairs would be necessary (seismic retrofits, bridge replacements or maintenance).

Bridge condition is typically characterized by a bridge health index or sufficiency rating (SR), similar to the PCI used for pavements. The sufficiency rating ranges from zero (insufficient) to 100 and is based on four factors:

- Structural adequacy and safety
- Serviceability and functional obsolescence
- Essentiality for public use
- Special reductions, i.e., detours, safety features

The sufficiency rating is used to determine eligibility for Federal Highway Bridge Program (HBP) funding. Structures are eligible for rehabilitation funding when the structure is structurally deficient or functionally obsolete and has a sufficiency rating ≤ 80. Replacement funding is available when the structure is structurally deficient or functionally obsolete and the sufficiency rating is ≤ 50.

5.1 Replacement & Rehabilitation Costs

Table 5.1 summarizes the estimated bridge replacement and rehabilitation costs for 12,562 city and county bridges by county. The total estimated cost is almost $3.3 billion.

[6] *MTC Local Bridge Needs Update – Final Report*, Metropolitan Transportation Commission, April 2008.
[7] http://www.dot.ca.gov/hq/structur/strmaint/

Table 5.1 Estimated Replacement and Rehabilitation Bridge Costs by County

County	Total Number of Bridges	Number of Bridges for Reconstruction or Rehabilitation	Replacement Cost ($M)	Rehabilitation Cost ($M)	Total Cost (SM)
Alameda	258	45	$19.8	$41.0	$60.8
Alpine	12	3	$1.4	$0.3	$1.7
Amador	39	19	$10.2	$3.5	$13.8
Butte	305	72	$71.9	$10.4	$82.3
Calaveras	68	20	$16.0	$3.1	$19.1
Colusa	150	22	$16.7	$5.7	$22.3
Contra Costa	358	65	$45.5	$39.3	$84.8
Del Norte	40	18	$21.0	$2.7	$23.7
El Dorado	91	47	$27.2	$5.8	$32.9
Fresno	535	66	$48.7	$40.4	$89.1
Glenn	167	27	$48.7	$1.5	$50.3
Humboldt	176	68	$85.8	$11.8	$97.7
Imperial	141	16	$14.3	$2.3	$16.6
Inyo	32	5	$1.3	$0.6	$1.9
Kern	276	28	$21.5	$29.5	$51.0
Kings	105	5	$1.8	$1.8	$3.7
Lake	80	32	$28.9	$4.1	$33.0
Lassen	64	13	$8.7	$1.7	$10.4
Los Angeles	1589	309	$82.0	$348.4	$430.4
Madera	152	29	$28.4	$5.7	$34.2
Marin	122	40	$29.3	$6.3	$35.6
Mariposa	53	26	$14.1	$2.8	$16.9
Mendocino	162	59	$43.7	$10.4	$54.1
Merced	293	42	$31.4	$6.2	$37.6
Modoc	53	7	$1.4	$1.0	$2.4
Mono	9	2	$3.6	$0.0	$3.6
Monterey	145	56	$106.1	$8.2	$114.3
Napa	105	36	$24.3	$7.7	$31.9
Nevada	58	21	$32.7	$1.5	$34.2
Orange	544	90	$14.0	$59.8	$73.8
Placer	183	40	$35.6	$5.5	$41.1
Plumas	92	30	$32.2	$4.3	$36.6
Riverside	426	66	$40.2	$45.2	$85.4
Sacramento	358	68	$91.0	$40.1	$131.1
San Benito	46	9	$3.2	$1.2	$4.4
San Bernardino	502	136	$182.5	$45.2	$227.7
San Diego	496	56	$32.1	$48.6	$80.7
San Francisco	52	16	$11.9	$12.1	$24.0
San Joaquin	357	51	$52.0	$19.5	$71.4
San Luis Obispo	195	66	$56.7	$13.2	$70.0

County	Total Number of Bridges	Number of Bridges for Reconstruction or Rehabilitation	Replacement Cost ($M)	Rehabilitation Cost ($M)	Total Cost (SM)
San Mateo	150	51	$20.3	$31.8	$52.1
Santa Barbara	185	38	$21.4	$11.0	$32.4
Santa Clara	474	111	$66.0	$57.0	$123.0
Santa Cruz	112	54	$40.4	$13.1	$53.6
Shasta	294	72	$54.6	$19.7	$74.4
Sierra	32	11	$12.7	$1.0	$13.6
Siskiyou	172	34	$30.5	$3.4	$34.0
Solano	187	23	$17.7	$13.6	$31.3
Sonoma	422	117	$111.6	$28.0	$139.6
Stanislaus	283	59	$43.1	$32.0	$75.1
Sutter	96	18	$7.3	$4.0	$11.3
Tehama	309	94	$90.3	$16.5	$106.8
Trinity	96	25	$19.7	$3.4	$23.1
Tulare	397	46	$5.4	$16.9	$22.3
Tuolumne	55	23	$13.7	$2.7	$16.4
Ventura	178	42	$24.3	$32.0	$56.2
Yolo	144	32	$27.3	$10.3	$37.6
Yuba	87	28	$33.4	$3.2	$36.6
Totals	**12562**	**2704**	**$2,077**	**$1,198**	**$3,276**

5.2 Bridge Funding

There are two primary sources of funding for local bridges – the Federal HBP and a local match. The local match is usually from local sales taxes, gas taxes or general funds. For those bridges in the mandatory seismic retrofit program, Proposition 1B (the Highway Safety, Traffic Reduction, Air Quality, and Port Security measure approved by the voters in November 2006) provides the funding for the local match. The HBP program provides approximately 88.53 percent of the total funding.

The "needs" for bridges can be broadly categorized into preservation, rehabilitation, replacement and improvement needs. Improvement needs include safety, strengthening (including seismic strengthening), widening or raising a structure.

Of the $3.3 billion in bridge needs from Table 6.1, local agencies are required to finance 11.47 percent or approximately $375.8 million. Therefore, the shortfall is approximately $0.3 billion.

However, the shortfall does not include bridges that have a span of less than 20 feet, nor does it include maintenance costs.

Chapter 6. Summary

As outlined in Chapter 1, the study objectives were to determine the answers to a series of questions:

1. What are the conditions of local streets and roads?
2. What will it cost to bring them up to an acceptable condition?
3. How much will it cost to ***maintain*** them in an acceptable condition for the next 10 years?
4. Similarly, what are the needs for safety, regulatory and operational components?
5. How much is the funding shortfall?
6. What are the impacts of different funding scenarios?

The results of this study continue to be sobering. It is clear that California's local streets and roads are not just at risk; they are on the edge of a cliff with an average PCI of 66. With this pavement condition and the existing funding climate, there is a clear downward trend.

By 2020, with the current funding, the pavement condition index will continue to deteriorate to 54. Even more critically, the backlog will increase from $39.1 billion to $63.6 billion. This is assuming that construction costs do not outstrip the anticipated revenues. It also does not include any additional costs due to new roads/streets that will be added. Further, it is estimated that almost a quarter of California's local streets and roads will be in "failed" condition.

Table 6.1 summarizes the results from Chapters 3, 4 and 5 and the answers to Questions 2 to 5 above. The total funding needs over the next 10 years is $102.9 billion, and the resulting shortfall is $56.3 billion for pavements, $22.3 billion for the safety, regulatory and operational components and $0.3 billion for bridges. The total shortfall is $78.9 billion.

Table 6.1 Summary of 10-Year Needs and Shortfall Calculations (2010 $ Billion)

Transportation Asset	Needs	Funding Available	Shortfall
Pavements	$ 70.5	$ 14.2	$ (56.3)
Essential Components*	$ 29.1	$ 6.8	$ (22.3)
Bridges	$ 3.3	$ 3.0	$ (0.3)
Totals	**$ 102.9**	**$ 23**	**$ (78.9)**

* Does not include NPDES

The cost of NPDES regulations continue to be of concern; the case studies show that these costs may range from 2 to 10 percent of an agency's transportation expenditures. However, this does not include additional costs from other expenditures that are transportation related, such as flood control or clean water programs. While the information provided was not sufficient to extrapolate statewide, one trend was clear: all four agencies interviewed expected significant increases in NPDES expenditures in the future.

The conclusions that can be drawn from this study are inescapable. Given existing funding levels, California's local streets and roads can be expected to deteriorate rapidly within the next 10 years. In addition, costs of any deferred maintenance will only continue to grow. The additional funding scenarios analyzed also serve to emphasize this point. The loss of revenue sources such as the gas tax, even for a short period, will have negative impacts on the local street and road network. One

dollar of maintenance deferred today will cost $1.53 in 2020, assuming no increases in labor or construction costs.

To bring the transportation network to an acceptable level will require more than double the existing level of funding. For pavements, that would require an increase of at least $56.3 billion. For essential components, it would require $22.3 billion for a total of $78.6 billion.

However, once the BMP goal is reached, it would only require approximately $2.3 billion annually to maintain the pavement network at this level.

Even just to maintain the existing pavement condition at 66 would require $3.1 billion/year, more than double the existing funding level.

To put the shortfall in perspective, $78.6 billion over 10 years translates to an additional 53 cents per gallon at the pump (based on an estimated 14.8 billion gallons of fuel purchased in California in 2009).

APPENDIX A

Data Collection

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

A.1 Outreach Efforts

As with the 2008 study, significant efforts were made to reach all 537 agencies April-May 2010. This included letters sent out by the League and CSAC, followed up by emails and phone calls from Nichols Consulting Engineers, Chtd. (NCE). The contact database had over 2,100 contacts for all the cities and counties. This was compiled from a variety of sources including contacts from the 2008 study, the memberships of both CSAC and the League, and NCE's contacts.

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

Over 2,100 contact letters were mailed out in early March 2010 (see Exhibit 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 15, 2010, but this was later extended to May 19, 2010, as there were numerous requests from agencies for more time to respond.

In the last two weeks of the April 2010, NCE made follow-up phone calls to agencies with more than 100 centerline miles of streets or roads to encourage them to respond to the survey if they had not already done so.

A.2 Project Website

The website at www.SaveCaliforniaStreets.org (see Figure A.1) was originally designed and developed for the 2008 study. This was modified to accommodate the 2010 update. The intent of this website was to act as both an information resource on this study and as a repository of related reports that might be of interest to cities and counties. More importantly, it was a portal to the online survey that is described in Section A.3.

The domain name was registered for five years (expiring February 27, 2013) and can be used for future updates after this study is completed. The County of Los Angeles currently hosts the website.

A.3 Online Survey Questionnaire

A survey questionnaire was prepared and finalized in early April 2008, and a blank example included in Exhibit 1. Briefly, it included a request for the following information:

1. Contact name and information for both pavements and financial data
2. Pavements
    a. Pavement management software used , if any
    b. Network inventory data
    c. Distress survey procedures
    d. Pavement condition ratings and needs
3. Safety, Traffic, and Regulatory Components
    a. Asset inventory
    b. Replacement costs

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

4. Funding sources and expenditures

Unlike the 2008 study, 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. A custom database was also designed and developed for this update to overcome the limitations of the previous survey. Also, multiple validation fields were added to prevent some of the data entry errors that were discovered in the 2008 study, thus mitigating the significant effort in follow-up calls as well as extensive validation checks.

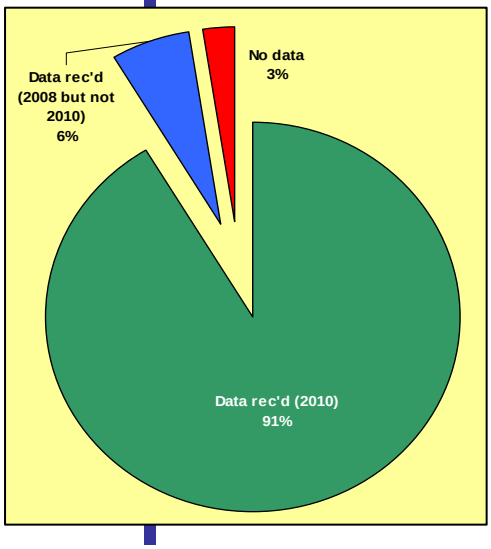


Figure A.2 Responses to Survey (% centerline miles)

A.4 Results of Data Collection

A total of 399 agencies responded to the survey. In addition to the 82 agencies who responded in 2008, but not 2010, this added up to 481 agencies. More importantly, this represented more than 97 percent of the total centerline miles of local streets and roads in the state (see Figure A.2). It also represented 97 percent of the state's population. This was an improvement over 2008, when data were received from 93 percent of the state's street network.

In general, more agencies responded with more information in all the data categories (see Table A.1). Of particular

97% of the state's local streets and roads are included in this study.

importance was the number of agencies who responded with unit cost and financial data. In 2008, the survey did not ask for unit cost data, and the information used at the time was based on NCE's personal contacts with approximately 50 agencies around the state. This time, 260 agencies reported unit cost data that made the analysis much more robust. In addition, 300 agencies reported financial data, almost tripling the number of responses from 2008.

Of the missing 56 agencies, 47 had less than 100 centerline miles, and 50 had populations less than 50,000. Many had limited resources in terms of staff time to respond to the survey.

Table A.1 Number of Agencies Responding by Data Type

Data Reported	# of Agencies Reporting Data	
	2008	2010
Pavements	314	344
Unit Costs	50*	260
Essential Components	188	296
Financial	137	300

* From NCE's database

A.4.1 Are Data Representative?

Throughout the data collection phase, it was important to ensure that the data received were representative in nature. This was critical for the analyses – as with the 2008 study, the criterion used was network size.

The distribution of responses with respect to network size is shown in Figure A.3. Small agencies are those that have less than 100 centerline miles; medium between 101 to 300 miles, and large agencies have more than 300 miles. Figure A.3 shows all the agencies who responded in 2010 (green), those who responded in 2008 but not 2010 (blue) and the ones who did not respond in either 2008 or 2010 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 215 responses (82%) in this size category, so our confidence in the responses were validated.

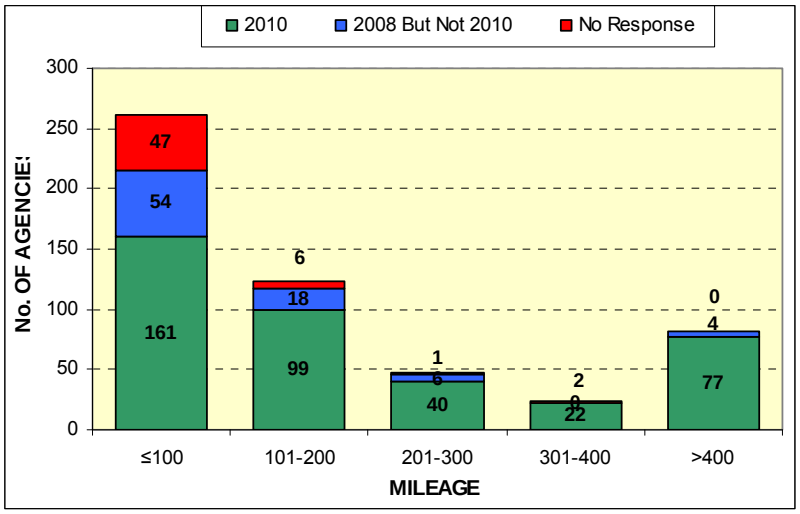


Figure A.3 Distribution of Agency Responses by Network Size (centerline miles)

An important point to note too is that small agencies account for a very small percentage of the state's pavement network. There are 275 cities with less than 100 centerline miles of streets, and 167 cities with less than 50 centerline miles of streets. However, they comprise only 8.7 percent and 3.2 percent of the total miles in the state, respectively. Their impact on the statewide needs is consequently minimal.

A.4.2 PMS Software

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.

The survey responses showed that 83 percent of the responding agencies had a pavement management system (PMS) in place (see Figure A.4). The StreetSaver® (39%) and MicroPAVER (23%) software programs are the two main ones in the state, not surprising given their roots in the public domain and reasonable costs. StreetSaver® was developed and supported by the Metropolitan Transportation Commission (MTC) and MicroPAVER supported by the American Public Works Association (APWA).

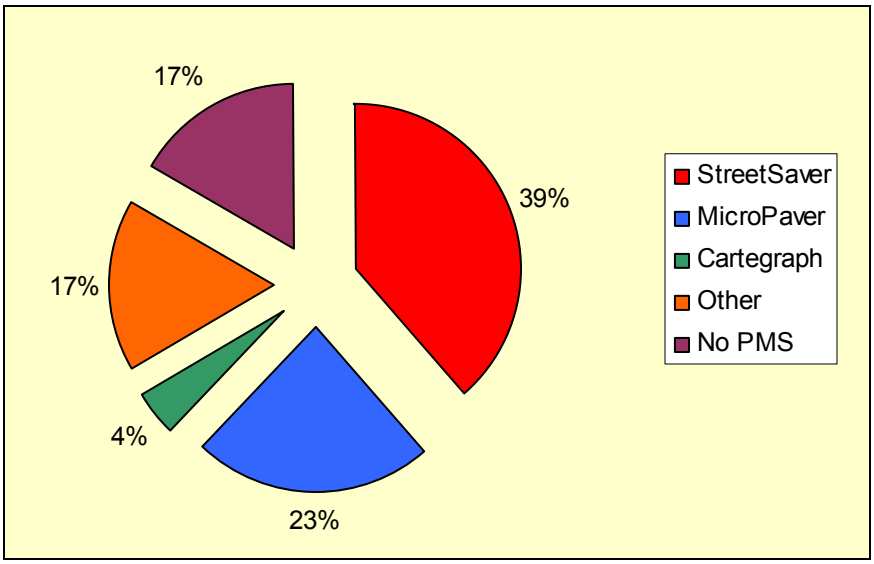


Figure A.4 PMS Software Used from Survey Responses

A.5 Summary

Overall, the number and quality of the survey responses received again exceeded expectations and more than met the needs of this study. To obtain data on more than 97 percent of the state's local streets and roads network was a remarkable achievement. That 83 percent of agencies that responded also had some pavement management system in place removed many obstacles in the technical analyses. In particular, the consistency in the pavement conditions reported contributed enormously to the validity of the study. Finally, to obtain significant increases in responses for the financial data was very encouraging.

EXHIBIT 1

Contact Letter, Survey Questionnaire & Fact Sheet

March 8, 2010

NAME
TITLE
AGENCY
ADDRESS #1
ADDRESS #2

SUBJECT: CALIFORNIA STATEWIDE LOCAL STREETS AND ROADS NEEDS ASSESSMENT 2010 UPDATE

Dear XXX:

Your help in responding to our survey in 2008 made a difference! We are asking for your help again in updating the information you provided two years ago.

As you may know, the 2008-09 Statewide Needs Assessment Report identified a funding shortfall of over $70 billion for local streets and roads pavement and non-pavement needs. This information assisted in protecting the Highway User Tax Account (HUTA) and Prop. 42 funds in 2009-10 (a project fact sheet is enclosed and a copy of the final report is available at www.SaveCaliforniaStreets.org.).

Transportation funding for cities and counties is still at risk in the current budget discussions between the Governor and State Legislature. We need to be vigilant and continue to make it clear to the Governor and State Legislators of the critical funding shortfall for Cities and Counties, and that there are detrimental consequences to deferring or reducing our transportation funds. 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).

To assist cities and counties in communicating these needs to policy makers, and to secure sufficient funding, Nichols Consulting Engineers, Chtd. (NCE), will assist us in performing the 2010 update of the Statewide Needs Assessment.

YOU CAN 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 and 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:

Login: XXXX Password: XXXX

It is essential that we have this data no later than April 15, 2010. NCE will be in touch with you within two weeks to answer any questions you may have. Should you have any questions, please do not hesitate to contact:

Ms. Margot Yapp, P.E.
Vice President/Project Manager
Nichols Consulting Engineers, Chtd.
501 Canal Blvd, Suite I
Pt. Richmond, CA 94804
(510) 215-3620
myapp@nce.reno.nv.us.

We appreciate your help in providing this information.

Very truly yours,

Patrick V. DeChellis, President
County Engineers Association of California
Deputy Director of Public Works
County of Los Angeles

Larry A. Patterson, President
Public Works Officers Department
League of California Cities
Director of Public Works
City of San Mateo

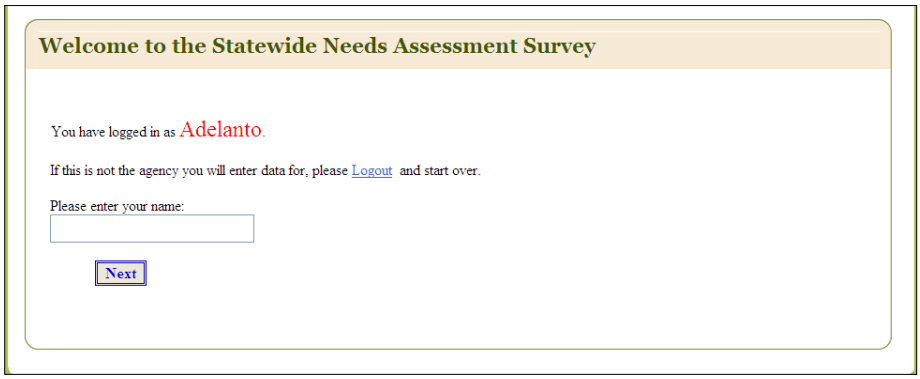
Enclosures: Fact Sheet
Instructions for Online Survey

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 2008 survey, the information you entered at that time 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 Melissa Holzapfel at (510) 215-3620 or at mholzapfel@nce.reno.nv.us.

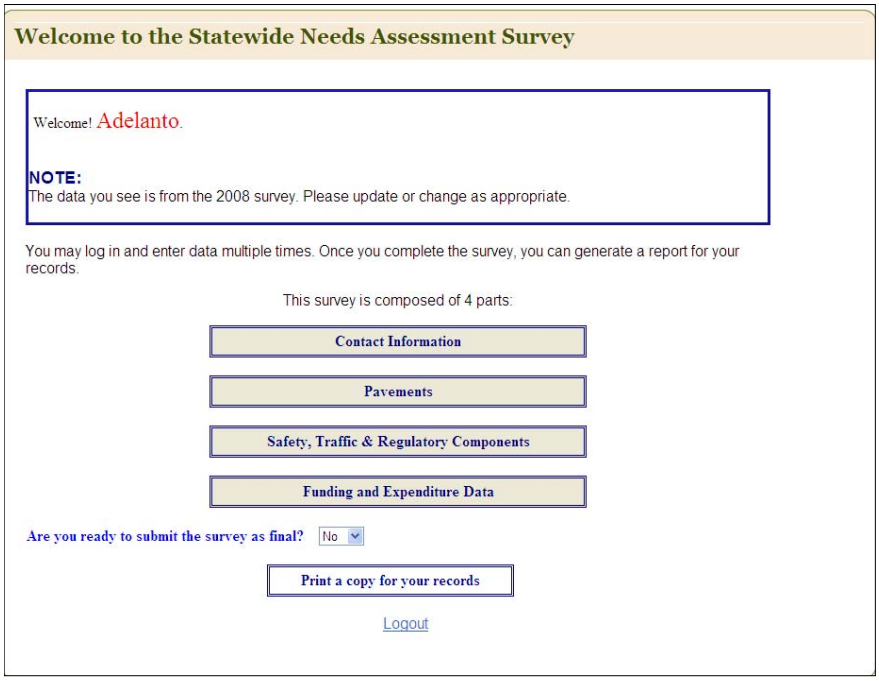
Step 3. Enter your name, then click “Next” to the main survey page.



Step 4. There are four (4) parts in this survey:

- Contact information;
- Pavements;
- Safety, Traffic & Regulatory components; and
- Funding sources and expenditures.

Click on each button to enter the relevant information.



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 on “Logout” button when done.

Statewide Needs Assessment Survey Report

Agency: --- Please Select ---

A. 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										

B. Pavement Management System and Pavement Distress Survey Procedures

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

Your agency's PMS software:
MicroPaver

Your agency's PMS software (if 'Other' is selected above):
Test

2. What pavement distresses do you collect for AC (Asphalt Concrete)? 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 PCC (Portland Cement Concrete) 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	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. 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:

C. 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						

D. Pavement treatment unit costs

Urban Major Roads:

Pavement Treatment	PCI Range	Unit Cost ($/sq. yd.)
Do Nothing	90 - 100	$0.00
Preventive Maintenance (e.g. slurry, chip seal, cape seal)	65 - 89	
Thin overlay (e.g. less than or equal to 2 inches)	50 - 64	
Thick overlay (e.g. more than 2 inches)	22 - 49	
Reconstruction (e.g. remove & replace)	0 - 21	

Urban Residential/Local Roads:

Pavement Treatment	PCI Range	Unit Cost ($/sq. yd.)
Do Nothing	90 - 100	$0.00
Preventive Maintenance (e.g. slurry, chip seal, cape seal)	66 - 89	
Thin overlay (e.g. less than or equal to 2 inches)	50 - 65	
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	$0.00
Preventive Maintenance (e.g. slurry, chip seal, cape seal)	67 - 89	
Thin overlay (e.g. less than or equal to 2 inches)	50 - 66	
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	$0.00
Preventive Maintenance (e.g. slurry, chip seal, cape seal)	68 - 89	
Thin overlay (e.g. less than or equal to 2 inches)	50 - 67	
Thick overlay (e.g. more than 2 inches)	25 - 49	
Reconstruction (e.g. remove & replace)	0 - 24	

E. Safety, Traffic and Regulatory Components

Category	Inventory (Quantity)	Unit	Total Replacement Cost	Accuracy
Storm Drains - pipelines		mile		
Other elements e.g. manholes, inlets, culverts, pump stations etc		ea		
Curb and gutter		ft		
Sidewalk (public)		sq. ft.		
Curb ramps		ea		
Traffic signals		ea		
Street Lights		ea		
Sounds Walls/Retaining walls		sq. ft.		
Traffic signs		ea		
NPDES (National Pollutant Discharge Elimination System) requirements		Lump Sum		
Other ADA compliance needs (not included in above)		Lump Sum		
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		

F. Actual/Estimated Revenues for Pavement-related Activities

Funding Source	Type	Amount (FY2008/09)	Amount (FY2009/10)	Annual Average (FY2010/11 to 2014/15)

G. Actual/Estimated Revenues for Safety, Traffic & Regulatory Components

Funding Source	Type	Amount (FY2008/09)	Amount (FY2009/10)	Annual Average (FY2010/11 to 2014/15)

H. Expenditures on Pavements

Name	Amount (FY2008/2009)	Amount (FY 2009/2010)	Annual Average (FY2010/11 to 2014/15)
Preventive Maintenance e.g. crack seals, slurry seals etc			
Rehabilitation & reconstruction e.g. overlays			
Other (pavement related)			
Other Operations & Maintenance e.g. vegetation, cleaning ditches, sweeping etc			

I. Expenditures on Safety, Traffic & Regulatory Components

Name	Amout (FY2008/2009)	Amount (FY2009/2010)	Annual Average (FY2010/11 to 2014/15)
Storm Drains - pipelines			
Other elements e.g. manholes, inlets, culverts, pump stations etc			
Curb and gutter			
Sidewalk (public)			
Curb ramps			
Traffic signals			
Street Lights			
Sounds Walls/Retaining walls			
Traffic signs			
NPDES (National Pollutant Discharge Elimination System) requirements			
Other ADA compliance needs (not included in above)			
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)			

FACT SHEET

California Statewide Needs Assessment Project

www.SaveCaliforniaStreets.org

Why are we updating the 2008 study?

Transportation funding for Cities and Counties are still at risk.

The 2008 statewide needs study identified a funding shortfall of over $70 billion for local streets and roads (the final report is available on the www.SaveCaliforniaStreets.org website). This information was used to help protect gas tax and Proposition 42 funds in FY 2009/10.

However, the current budget discussions between the Governor and the Legislature make it clear that the prospect of having our already insufficient local road funds reallocated to address the state's budget woes is a very real concern. This update will help us once again with our efforts to protect our transportation funds.

Why is this update important?

Performing a needs assessment biennially is important to provide updated information to maintain and obtain transportation funding, similar to what Caltrans does. Hopefully, the information from this study will embed into the decision makers minds the importance of maintaining sufficient transportation funding for local streets and roads. Additionally, we need to make it clear what the detrimental consequences are for deferring or reducing local street and road funds. This study is the only comprehensive and systematic statewide approach to quantify local streets and roads needs.

How can Cities and Counties help?

Your help in 2008 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
- Recent Pavement condition data
- Safety, traffic, and regulatory data
- Funding/expenditure projections

There are a few new items that were not included in the 2008 survey such as the breakdown between urban and rural roads that have been added to the survey and need your input. 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. We will be in touch with them soon to obtain this information. The deadline for responding to this survey is April 15th, 2010.

FACT SHEET

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 (League)
- County Engineers Association of California (CEAC)
- County of Los Angeles
- California Regional Transportation Planning Agencies (RTPA)
- California Rural Counties Task Force (RCTF)

The Oversight Committee is composed of representatives from each organization, with the County of Los Angeles, Department of Public Works acting as the Project Manager.

Who should I contact for more information?

Margot Yapp, Vice President
Nichols Consulting Engineers, Chtd.
501 Canal Blvd, Suite I
Pt. Richmond, CA 94804
(510) 215-3620

Patrick DeChellis, Deputy Director
Project Manager
County of Los Angeles
Dept. of Public Works
(626) 458-4004

Greg Kelley, Assistant Deputy Director
County of Los Angeles
Dept of Public Works
(626) 458-4911

APPENDIX B

Pavement Needs by County

Table B.1 Funding Needs by County (2010 $M Dollars)

County (Cities Included)	Center Line Miles	Lane Miles	Area (sq. yd.)	2010 PCI	10-year Needs (2010 $M)
Alameda County	3,394	7,841	70,927,039	67	**$1,878**
Alpine County	135	270	2,029,409	45	**$59**
Amador County	476	955	6,428,601	34	**$370**
Butte County	1,782	3,643	32,578,860	67	**$760**
Calaveras County	715	1,344	9,054,592	53	**$355**
Colusa County	987	1,524	12,503,304	60	**$328**
Contra Costa County	3,236	6,716	61,303,966	70	**$1,414**
Del Norte County	334	675	5,545,540	68	**$117**
El Dorado County	1,251	2,480	17,968,873	58	**$562**
Fresno County	6,087	12,951	105,285,737	70	**$2,320**
Glenn County	950	1,899	14,089,811	68	**$343**
Humboldt County	1,484	2,968	24,199,861	56	**$896**
Imperial County	2,994	6,088	80,968,096	72	**$1,745**
Inyo County	1,142	2,158	15,044,476	57	**$298**
Kern County	5,051	11,698	103,031,172	63	**$2,918**
Kings County	1,328	2,796	20,026,009	62	**$590**
Lake County	1,067	2,123	14,059,325	31	**$727**
Lassen County	429	875	6,406,058	69	**$185**
Los Angeles County	21,035	48,535	448,776,948	67	**$12,056**
Madera County	1,822	3,680	23,490,290	48	**$967**
Marin County	1,016	2,090	18,617,946	61	**$578**
Mariposa County	1,122	561	3,949,440	44	**$149**
Mendocino County	775	1,519	13,980,447	49	**$616**
Merced County	2,330	4,954	37,182,870	58	**$1,207**
Modoc County	1,515	3,041	18,552,824	40	**$701**
Mono County	233	465	3,458,006	68	**$89**
Monterey County	1,834	4,187	37,387,835	45	**$1,984**
Napa County	718	1,504	12,526,932	60	**$391**
Nevada County	764	1,550	9,969,993	71	**$222**
Orange County	6,187	16,025	138,479,303	76	**$2,611**
Placer County	2,012	4,183	34,437,515	77	**$577**
Plumas County	704	1,409	11,409,902	66	**$210**
Riverside County	7,332	16,328	147,737,727	72	**$3,201**
Sacramento County	4,968	10,936	96,288,353	66	**$2,505**
San Benito County	411	833	5,547,794	66	**$157**
San Bernardino County	8,667	20,139	167,073,405	70	**$3,897**
San Diego County	7,676	18,743	163,153,949	69	**$4,314**
San Francisco County	912	2,061	20,246,499	63	**$617**
San Joaquin County	3,402	7,159	58,917,807	70	**$1,347**
San Luis Obispo County	1,939	4,078	36,423,738	64	**$863**
San Mateo County	1,872	3,909	33,863,701	70	**$780**
Santa Barbara County	1,597	3,391	30,447,475	70	**$692**
Santa Clara County	4,114	9,317	89,357,474	69	**$2,133**

County (Cities Included)	Center Line Miles	Lane Miles	Area (sq. yd.)	2010 PCI	10-year Needs (2010 $M)
Santa Cruz County	871	1,812	14,516,524	48	**$592**
Shasta County	1,722	3,547	24,815,711	67	**$579**
Sierra County	499	1,001	8,010,229	71	**$152**
Siskiyou County	1,495	3,005	20,340,302	57	**$600**
Solano County	1,688	3,566	28,059,211	66	**$719**
Sonoma County	2,350	4,901	40,001,939	50	**$1,577**
Stanislaus County	2,694	5,912	48,009,735	51	**$1,973**
Sutter County	1,029	2,106	15,865,482	56	**$502**
Tehama County	1,197	2,401	15,834,143	65	**$396**
Trinity County	916	1,608	12,529,435	50	**$451**
Tulare County	3,957	8,181	60,632,842	68	**$1,446**
Tuolumne County	532	1,228	16,984,138	62	**$500**
Ventura County	2,416	5,297	47,161,769	66	**$1,271**
Yolo County	1,346	2,611	22,887,115	67	**$589**
Yuba County	724	1,504	12,862,583	56	**$448**
TOTAL	**141,235**	**308,279**	**2,651,240,057**	**66**	**$70,525**

APPENDIX C

Essential Component Needs by County

Table C.1 Summary of Essential Component Needs by County

County (Cities Included)	Replacement Cost ($ millions)	10-year Needs ($ millions)
Alameda	$7,105	$2,418
Alpine	$9	$3
Amador	$10	$4
Butte	$349	$112
Calaveras	$20	$8
Colusa	$114	$36
Contra Costa	$2,443	$738
Del Norte	$140	$43
El Dorado	$152	$51
Fresno	$1,225	$386
Glenn	$69	$21
Humboldt	$492	$161
Imperial	$363	$114
Inyo	$26	$8
Kern	$1,896	$601
Kings	$514	$166
Lake	$88	$29
Lassen	$65	$21
Los Angeles	$19,932	$6,263
Madera	$365	$115
Marin	$773	$234
Mariposa	$18	$6
Mendocino	$173	$53
Merced	$390	$141
Modoc	$8	$3
Mono	$18	$6
Monterey	$2,468	$788
Napa	$620	$191
Nevada	$126	$41
Orange	$5,875	$1,783
Placer	$1,566	$492
Plumas	$81	$30
Riverside	$4,143	$1,352
Sacramento	$2,821	$944
San Benito	$142	$45
San Bernardino	$5,536	$1,549
San Diego	$6,454	$2,017
San Francisco	$5,074	$1,494
San Joaquin	$1,846	$602
San Luis Obispo	$814	$259
San Mateo	$2,483	$761
Santa Barbara	$856	$275
Santa Clara	$5,104	$1,381
Santa Cruz	$557	$175

County (Cities Included)	Replacement Cost ($ millions)	10-year Needs ($ millions)
Shasta	$462	$149
Sierra	$26	$8
Siskiyou	$113	$36
Solano	$1,609	$495
Sonoma	$2,001	$641
Stanislaus	$1,769	$557
Sutter	$452	$133
Tehama	$26	$10
Trinity	$39	$13
Tulare	$1,188	$376
Tuolumne	$136	$65
Ventura	$1,507	$486
Yolo	$694	$211
Yuba	$81	$27
TOTALS	**$93,427**	**$29,125**

APPENDIX D

Transportation Funding in California Fact Sheet: Proposition 42, the March 2010 Transportation Tax Swap, and Propositions 22 and 26

When the 2008 California Statewide Local Streets and Roads Needs Assessment was released, the state charged an 18-cent per gallon excise tax on gasoline dedicated to transportation purposes (also known as the Highway User Tax Account or HUTA) as well as a sales tax on each gallon of gasoline sold in California. The sales tax revenues were dedicated for transportation purposes by voters when Proposition 42 was passed in 2002.

Prop 42 would have generated approximately $1.52 billion for improvements to the state highway system, the local streets and roads network, and transit in FY 2010-11. However, in March 2010, the Legislature approved and the Governor enacted the Transportation Tax Swap package. Among other things, the Transportation Tax Swap eliminated the sales tax on gas (Prop. 42) and replaced it with a 17.3-cent excise tax increase on gasoline (new HUTA), indexed to keep pace with what the sales tax on gasoline would have generated in a given fiscal year to ensure true revenue neutrality. The sales and excise taxes were also adjusted to provide similar results for transit funding. Finally, the Transportation Tax Swap provided the state significant general fund relief by dedicating a portion of the new HUTA to transportation related bond debt service.

Under the new funding scenario, the state now levies a 35.3-cent excise tax on gasoline for transportation purposes and transportation is funded at the same level as under the previous funding environment. The Legislature was motivated to enact the Transportation Tax Swap so as to remove transportation funding from the annual budget debate in the state.

In November 2010, voters passed Propositions 22 and 26, both which have potentially negative consequences for transportation funding in the state related to invalidating certain actions authorized under the Transportation Tax Swap. Prop. 22 prevents the state from using new HUTA revenues for bond debt service as agreed to under the transportation Tax Swap. Prop. 26 invalidates the replacement 17.3-cent excise tax because it was not enacted by a two-thirds vote of the Legislature.

While the state of transportation funding is unknown at the time of this final report, there are efforts among transportation stakeholders and a general agreement within the Legislature and Brown Administration to enact a fix that would keep intact the 17.3-cent excise tax and the same level of transportation funding into the future.