Chapter 1. Introduction

1.1 Background

California's 58 counties and 478[1] cities own and maintain 141,554[2] centerline-miles of local streets and roads. This is an impressive 81% of the state's total publicly maintained lane-miles (see Figure 1.1 below). Conservatively, this network is valued at $271 billion.

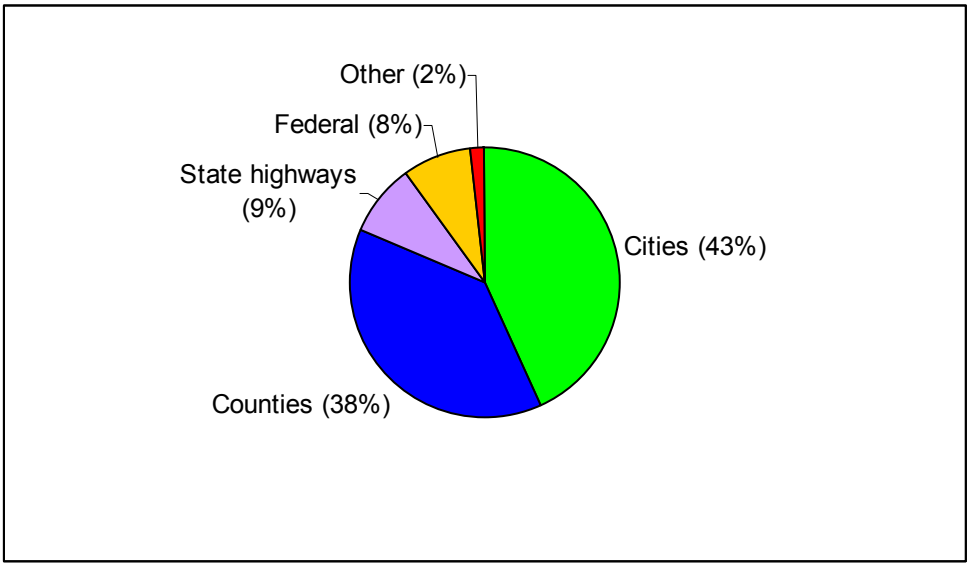

Figure 1.1 Breakdown of Maintained Road Centerline Miles by Agency[2]

Since 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) the table below 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.

Table1.1 Breakdown by Functional Classification & Unpaved Roads[2]

	Lane-miles			
	Major	Local	Unpaved	Total
Cities	76,629	100,912	887	178,428
Counties	51,821	72,652	14,563	139,036
Totals	**128,450**	**173,564**	**15,450**	**317,464**

Note: San Francisco is included as a city only.

[1] Two new cities, Wildomar and Menifee, were incorporated in 2008 and therefore not included in the original survey. However, their pavement network is included as part of the Riverside County's network.
[2] *2006 California Public Road Data – Statistical Information Derived from the Highway Performance Monitoring System*, State of California Department of Transportation, Division of Transportation System Information, July 2007.

There is no dispute that the transportation system has a significant role in the state's economy, as this road network is a critical contributor to maintaining California's status in the top 10 largest economies in the world[3]. The transportation system contributes to trade (import/exports), freight movement, retail, agriculture, tourism, mining, construction and manufacturing. In terms of jobs and trade, transportation and utilities comprise the largest sector in California in 2006 and second in terms of output[4].

Therefore, the maintenance of the transportation system should be a major concern for all Californian cities and counties.

In 1999, Senate Resolution 8[5] (Burton, 1999) requested the California Transportation Commission (CTC) to produce a "10 year needs assessment of the state's transportation system," that included the "unfunded rehabilitation and operations needs for state highways, local streets and roads, the state's intercity rail programs, and urban, commuter and regional transit systems, including ferry systems, over the next 10 years."

In the SR8 report, 57 counties and nearly 400 cities responded to a questionnaire regarding pavement rehabilitation. The estimated shortfall was an estimated $10.5 billion in unfunded needs, plus an annual shortfall of $400 million to keep up with annual maintenance and rehabilitation expenditures. This backlog, built up since the 1970s, represented nearly 8 years of rehabilitation needs. In addition, regional agencies also identified $13.1 billion in high priority local arterial expansion projects.

In the decade that has elapsed since then, the cost of rehabilitation has increased tremendously, but revenues have not kept up. Figure 1.2 illustrates the dramatic (more than ten-fold) increases in asphalt prices since 1997. Since the majority of local streets and roads are constructed of asphalt concrete (less than 0.5% are Portland cement concrete), this has a direct impact on the costs of maintenance and rehabilitation.

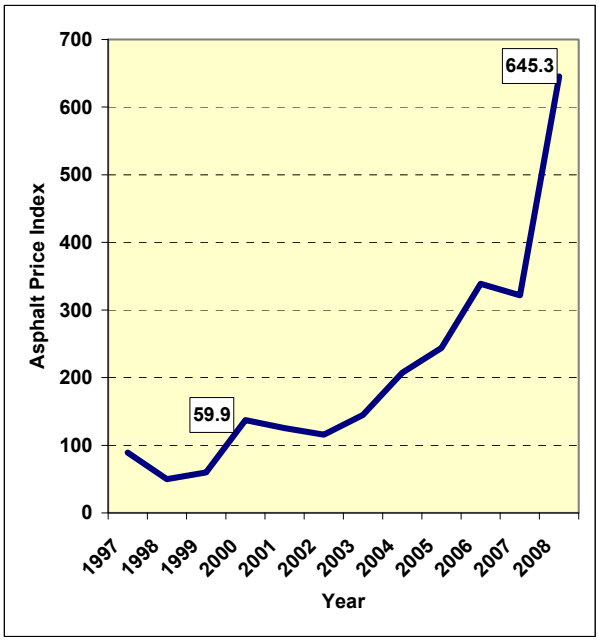

Figure 1.2 Caltrans Asphalt Price Index (1997 to 2008)[1]

However, increased material costs is not the only reason for increased maintenance costs. The cost of *deferring* maintenance is also a significant factor in higher maintenance costs. When agencies do not have sufficient funds to

[3] http://www.lao.ca.gov/2006/cal_facts/2006_calfacts_econ.htm

[4] http://www.census.gov/eos/www/naics/

[5] *Inventory of Ten-Year Funding Needs For California's Transportation Systems*, California Transportation Commission, May 5, 1999.

maintain their roads, maintenance efforts are delayed or postponed, which often results in a more expensive treatment later.

This study was commissioned to build upon, update the results of the previous study (SR8), and determine the funding needed to maintain the local streets and roads system for the next 10 years. However, state highways were not included as this was part of Caltrans State Highway Operation and Protection Plan (SHOPP).

1.2 Study Objectives

The objectives of this study may be 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, what is it?

Another objective was to develop a methodology that could be used for periodic updates by other agencies such as RTPAs or MPOs in the development of their Regional Transportation Plans.

A major goal of this study was to find the most cost-effective way of maintaining local streets and roads, and this is reflected in the methodology used (discussed in Chapter 3).

Finally, it was desirable to contact all 478 cities and 58 counties in California to get this information. Chapter 2 discusses in more detail the data collection efforts.

1.3 Study Assumptions

There were some important assumptions that were made during our analyses of the data received from cities and counties. These differ in several instances from those used in the SR8 report as well as Caltrans 2007 SHOPP[6]. Notably, they are:

1. The analysis period used in this study is 10 years, which is different from the SR8 report which only looked at a one-time backlog, but is consistent with SHOPP.

2. All numbers reported in this study are in constant 2008 dollars – this is consistent with both SHOPP and SR8.

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 80's (on a scale of 0 to 100, where 0 is failed and 100 is excellent). SR8 defined the goal as reaching a statewide index of 70. Caltrans SHOPP defines performance goals quite differently, i.e. the goal is to reduce the percentage of distressed highways from 28% to 10%.

[6] *Ten Year State Highway Operation & Protection Plan (FY 2008/09 to 2017/18*), Caltrans.

4. Two scenarios are reported in this study for the pavement analysis:
   a. Impacts of existing budget
   b. Funds needed to reach goal within 10 years

   These scenarios were not analyzed in the SR8 report.

5. It is assumed that no new streets or roads are added within the analysis period. This is consistent with both the SHOPP and SR8 analyses.

6. Capital improvement projects are not included, e.g. realignments, widening, grade separations etc.

7. The inclusion of safety, traffic and regulatory components of the roadway system such as sidewalks, ADA ramps, storm drains etc were was not previously included in SR8, although they are included in Caltrans SHOPP.

8. A bridge needs assessment was not included in this study, although both the SHOPP and SR8 did. However, a brief summary of the bridge projects that have been identified and approved for funding is included in Chapter 5.

Table 1.2 below summarizes the assumptions used in this study as well as in SR8 and Caltrans SHOPP.

Table 1.2 Summary of Study Assumptions

Assumptions	This Study	SR 8 Report	Caltrans SHOPP
Analysis Period	10 years	One-time backlog	10 years
Cost Basis	2008 dollars	1999 dollars	2007 dollars
Goals	Best management practices (PCI* = low 80's)	PCI = 70 ("Good" condition)	% of distressed pavements < 10%
Total Scenarios Evaluated	2	1	1
Capital Improvement Projects	No	Yes	Only related to operational improvement
Essential Components**	Yes	No	Yes
Bridges	Partial	Yes	Yes

*PCI = pavement condition index (scale of 0 to 100, with 0 = failed and 100 = excellent).
** Includes safety, traffic and regulatory components

1.4 Report Structure

Chapter 2 of this report discusses the data collection efforts, including the survey methodology used.

Chapter 3 presents the pavement needs assessments.

Chapter 4 presents the needs assessment for safety, traffic and regulatory components.

Chapter 5 presents a short description of bridges and the local projects identified for funding.

Chapter 6 summarizes the findings.

The appendices contain detailed explanations and tables to support the discussions in the above chapters. Appendix F includes a discussion of the needs assessment approach for future updates.

1.5 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)