

**2000**  
**Ten-Year State Highway Operation and Protection Plan**  
**(2000/01 through 2009/10 FY's)**  
**Updated April 2000**



**Prepared by: Department of Transportation**

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## Table of Contents

	<u>Page</u>
<b>Table of Contents</b>	1
<b>Executive Summary</b>	2
<b>Introduction</b>	
Authority	4
Findings	4
Time Horizon	5
Funding Options	6
<b>Part 1. Recommended Funding</b>	8
<b>Part 2. The Plan</b>	
Overview	10
Safety	11
Roadway Rehabilitation	15
Roadside Rehabilitation	20
Operations	24
Other Needs	28
Process Improvements	29
<b>Appendix 1. Funding Recommendation Details</b>	31
<b>Appendix 2. Definitions</b>	32
<b>Appendix 3. Distressed Pavement Lane Miles</b>	35
<b>Appendix 4. California Transportation Commission Comments</b>	36

## Executive Summary

The state highway system is the foundation on which the vitality of California's economy is built, connecting people and goods to growing urban centers, urbanized areas and major gateways. It links the Pacific Rim to markets and manufacturing centers throughout the country. The system represents a significant public investment. Its current worth is estimated at \$300 billion. Much of that investment was planned, designed and built in the 1950's, 1960's and 1970's.

Increasing demands to carry more people and goods challenge our highway system. Annual vehicle miles traveled (VMT) on the State Highway System are projected to increase to nearly 192 billion by 2012, a 40% increase since 1992. Nearly 800 million tons of goods will move over the system each year, an increase of more than 30% since 1992. This level of usage significantly exceeds levels anticipated when the system was first designed and results in faster rate of pavement deterioration, new accident concentration locations and increased hours of traffic congestion.

As the state's transportation needs have changed, Caltrans has struggled to keep up. Investment strategies over the past twenty years have not kept pace with the need to preserve the investment in the State Highway System. Currently, about one-third of our state highways need pavement work. More than half the bridges are over 30 years old, and many need expensive rehabilitation or replacement.

In 1998, Caltrans announced a new strategy focused on protecting the public's investment in the State Highway System. The *1998 Ten-Year State Highway System Rehabilitation Plan (1998 Plan)* established the concept of investment protection as the framework for future programming and recommended significant increases in funding. It recognized the ten-year planning horizon to provide stability and underscore the need for continuous investment to keep the system functioning at optimal levels. It focused on safety, roadway rehabilitation, roadside rehabilitation and operational improvements. Among other things, it established the goal of no more than 5,500 lane miles of distressed pavement by Fiscal Year 2007/08.

Since the *1998 Plan* was issued, Caltrans has made progress toward achieving the goals and objectives set forth in the Plan, and delivered 480 projects worth \$1.6 billion. These accomplishments are detailed in this report. Highlights include:

- Awarded bridge rehabilitation projects at 130 locations
- Rehabilitated 5,766 lane miles of pavement
- Restored 1,089 acres of highway landscape
- Installed more than 250 miles of median barriers

Caltrans also implemented a number of process improvements to improve SHOPP management and streamline project delivery. Those improvements include:

- Quicker delivery of programmed pavement rehabilitation projects because the California Transportation Commission's (CTC) delegated authority to Caltrans to allocate construction funds.
- Replaced three older information systems with California Transportation Improvement Program System (CTIPS) to improve accessibility and reliability.

Despite Caltrans' progress to date, much more remains to be done. In response to the challenges posed by the demand to move more people and goods on the existing system, Caltrans has identified state-of-the-art operational improvements to reduce congestion and improve traffic flow. Costs for implementation of the Traffic Operations Strategies (TOPS), developed this past year, are still being refined. Opportunities to achieve near-term benefits from additional investments in safety and roadside improvements have been identified. Finally, while some performance measures have been developed, further refinements are needed to improve the link between completion of projects and the resulting benefit to travelers and the system as a whole.

This *2000 Ten Year State Highway Operation and Protection Plan (2000 Plan)* proposes some changes to the *1998 Plan* and funding needed for system protection, preservation and enhancement. In addition, Caltrans proposes to create a "forebay" of projects to ensure that quality projects consistent with the *2000 Plan*, are ready to be built as funds become available. Caltrans proposes to implement a corridor management concept that makes more efficient use of resources and reduces inconvenience to the motoring public caused by multiple, uncoordinated projects along a single corridor.

As originally submitted to the California Transportation Commission, the *Draft 2000 Plan* was consistent with the Fund Estimate adopted by the Commission in November 1999. The *Draft 2000 Plan* had proposed to redirect funding to meet additional safety and roadside needs identified since the *1998 Plan* was adopted. During its March 2000 meeting, the Commission expressed concern because the redirection of funding would delay achieving the approved roadway rehabilitation improvement goal to reduce deteriorated pavement to no more than 5,500 lane miles by fiscal year 2007/08. The Commission asked Caltrans to prepare a SHOPP workshop for the May meeting to present funding options for consideration in adopting the four-year SHOPP program. The options (discussed in the Introduction to this Plan) are:

- 1.) **"1998 Plan" - Maintain SHOPP funding levels as contained in the Fund Estimate adopted in November 1999, with funding for pavement rehabilitation as adopted in the 1998 Ten-Year SHOPP Plan for Fiscal Years 2000/01 through 2003/04.**
- 2.) **"Draft 2000 Plan" - Maintain SHOPP funding levels as contained in the Fund Estimate adopted in November 1999, redirecting funds from roadway rehabilitation and operations to the safety and roadside elements during Fiscal Years 2000/01 through 2003/04.**
- 3.) **"Updated 2000 Plan" - Increase SHOPP funding levels by \$247 million for Fiscal Years 2000/01 through 2003/04, to maintain funding levels for pavement rehabilitation as adopted in the 1998 Plan, and the new SHOPP needs identified in the Draft 2000 Plan for the safety, roadside and operations elements.**

These options are discussed in the Introduction to the *Plan* immediately following the Executive Summary. Caltrans recommends Option 3.

At the May Commission meeting the Department presented the 3 options described immediately above. Based on that presentation the Commission has provided comments which are contained in Appendix 4. In those comments the Commission states it will "increase the 4-year 2000 SHOPP funding level by \$247 million". By this action the Commission has indicated its concurrence with the "Updated 2000 Plan."

## **Introduction**

### **AUTHORITY**

Streets and Highways Code Section 164.6 requires Caltrans to prepare and transmit to the Governor and Legislature a 10-year state rehabilitation plan for the rehabilitation and reconstruction of all state highways and bridges owned by the state. The 10-Year Plan is submitted to the California Transportation Commission (CTC) for review and comment. The Plan is then transmitted to the Legislature and Governor by May 1 of each even-numbered year.

Government Code Section 14526.5 requires development of a four-year State Highway Operation and Protection Program (SHOPP). SHOPP projects are limited to capital improvements relative to maintenance, safety and rehabilitation of state highways and bridges that do not add a new traffic lane to the system. The SHOPP is included in the first four years of the 10-Year Plan. The operation, maintenance and rehabilitation of the state highway system are the first priorities for use of state highway account funds (*Streets and Highways Code Section 167*).

As originally submitted to the California Transportation Commission, the *Draft 2000 Plan* was consistent with the Fund Estimate adopted by the Commission in November 1999. The *Draft 2000 Plan* proposed to redirect funding to meet additional safety and roadside needs identified since the *1998 Plan* was adopted. During its March 2000 meeting, the Commission expressed concern because the redirection of funding would delay achieving the approved roadway rehabilitation goal to reduce the level of deteriorated pavement to no more than 5,500 lane miles by fiscal year 2007/08. The Commission asked Caltrans to present a workshop during the May meeting presenting SHOPP funding options for consideration in adopting the four-year SHOPP program.

The Commission following the May workshop has provided comments to the Department. These comments are contained in Appendix 4. In the comments the Commission states it will “increase the 4-year SHOPP funding level by \$247 million”. This funding commitment is consistent with the Option 3 described throughout this plan.

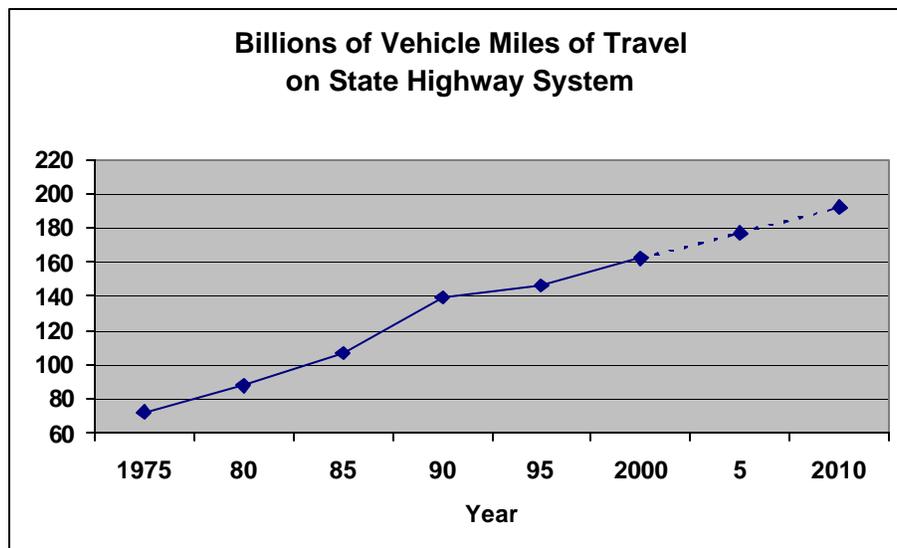
### **FINDINGS**

- *The system is valuable.* It is worth an estimated \$300 billion and took over 100 years to build. This investment must be protected.
- *The system is aging.* Much of the highway system was built in the 50’s, 60’s and 70’s. Over 50% of the state highway bridges are over 30 years old. An increasing number are reaching the age where major rehabilitation or replacement will be required. About one third of the state highway pavement needs rehabilitation.

- *Demand for use of the system is growing.* The 1998 California Transportation Plan – Statewide Goods Movement Strategy projected the following growth:

	1992	2012	% Change
<b>Population</b>	31.3 million	43.6 million	+39%
<b>Vehicles in Use</b>	21.5 million	30.3 million	+41%
<b>Annual Highway Freight</b>	586 million tons	769 million tons	+31%

- *The rate of system deterioration is accelerating.* Annual vehicle miles traveled (VMT) on the system increased from 139 billion in 1990 to 153 billion in 1997, and are projected to increase to 192 billion by the year 2010 (see following chart). While state highways make up 9% of the highway mileage in California, they accommodate 54% of the VMT. The increased VMT results in a faster rate of pavement deterioration, new accident concentration locations, and increased hours of traffic congestion.



## TIME HORIZON

This 2000 Plan includes information and funding recommendations for the fiscal years 2000/01 through 2009/10. The 2000 STIP Fund Estimate establishes the overall funding available during the first four fiscal years, 2000/01 through 2003/04, with projections for fiscal years 2004/05 and 2005/06. Funding recommendations in the 2000 10-Year Plan will be considered during development of the 2002 STIP Fund Estimate.

## FUNDING OPTIONS

**Option 1. “1998 Plan” - Maintain SHOPP funding levels as contained in the Fund Estimate adopted in November 1999, with funding for pavement rehabilitation as adopted in the 1998 Ten-Year SHOPP Plan for Fiscal Years 2000/01 through 2003/04.**

This option would not permit Caltrans to meet increased safety needs or legislative mandates for roadside beautification and stay within the funding level approved in the November 1999 Fund Estimate.

**Option 2. “Draft 2000 Plan” - Maintain SHOPP funding levels as contained in the Fund Estimate adopted in November 1999, redirecting funds from roadway rehabilitation and operations to the safety and roadside elements during Fiscal Years 2000/01 through 2003/04.**

This option would permit Caltrans to meet increased safety needs and legislative mandates for roadside beautification, but would result in a one-year delay in meeting completion dates pavement rehabilitation as established in the *1998 Ten-Year SHOPP Plan*.

**Option 3. “Updated 2000 Plan” - Increase SHOPP funding levels by \$247 million for Fiscal Years 2000/01 through 2003/04.**

This option would permit Caltrans to maintaining targeted completion dates for pavement rehabilitation as established in the *1998 Ten-Year SHOPP Plan* (no more than 5,500 miles of distressed pavements by 2007/08), and meet the increased safety, roadside and operations needs.

<b>Summary Of 4-Year SHOPP Funding Options Fiscal Years 2000/01 Through 2003/04 (\$ millions)</b>			
<b>Element</b>	<b>Option 1 “1998 Plan”</b>	<b>Option 2 “Draft 2000 Plan”</b>	<b>Option 3 “Updated 2000 Plan”</b>
SAFETY	\$284	\$472	\$472
ROADWAY	\$2,673	\$2,436	\$2,673
ROADSIDE	\$175	\$203	\$203
OPERATIONS	\$426	\$444	\$457
<b>TOTAL</b>	<b>\$3,558</b>	<b>\$3,555</b>	<b>\$3,805</b>

**Comparison Of 4-Year SHOPP Funding Options To 1998 Plan  
Fiscal Years 2000/01 Through 2003/04  
(\$ millions)**

Element	Option 1 "1998 Plan"	Option 2 "Draft 2000 Plan" (Change from <i>1998 Plan</i> )	Option 3 "Updated 2000 Plan" (Change from <i>1998 Plan</i> )
SAFETY	\$284	+\$188	+\$188
ROADWAY	\$2,673	-\$237	\$0
ROADSIDE	\$175	+\$28	+\$28
OPERATIONS	\$426	+\$18	+\$31
<b>TOTAL</b>	<b>\$3,558</b>	<b>-\$3</b>	<b>+\$247</b>

## PART 1. RECOMMENDED FUNDING

The *1998 Plan* (as adjusted for the revised escalation factor) identified \$9,800,000 needed to meet goals and objectives established in the *Plan* over the ten-year period. The *2000 Plan* has evaluated the funding options summarized in the following table. (NOTE: The 1998 Plan described throughout this report has been projected through fiscal year 2009/10 for comparison purposes and was updated to reflect a 3.5% escalation rate. This same rate was used to develop recommendations for the *2000 Plan*. Both Plans exclude Federal Emergency Repair and Phase 2 and Toll Bridge Seismic Retrofit funding.)

<b>Summary Of 4-Year SHOPP Funding Options</b> <b>Fiscal Years 2000/01 Through 2003/04</b> (\$ millions)			
Element	Option 1 "1998 Plan"	Option 2 "Draft 2000 Plan"	Option 3 "Updated 2000 Plan"
SAFETY	\$284	\$472	\$472
ROADWAY	\$2,673	\$2,436	\$2,673
ROADSIDE	\$175	\$203	\$203
OPERATIONS	\$426	\$444	\$457
<b>TOTAL</b>	<b>\$3,558</b>	<b>\$3,555</b>	<b>\$3,805</b>

<b>Summary Of 10-Year SHOPP Funding Options</b> <b>Fiscal Years 2000/01 Through 2009/10</b> (\$ millions)			
Element	Option 1 "1998 Plan"	Option 2 "Draft 2000 Plan"	Option 3 "Updated 2000 Plan"
SAFETY	\$727	\$1212	\$1212
ROADWAY	\$7,441	\$7,797	\$7,768
ROADSIDE	\$466	\$648	\$648
OPERATIONS	\$1,171	\$1,443	\$1,456
<b>TOTAL</b>	<b>\$9,805</b>	<b>\$11,100</b>	<b>\$11,084</b>

**Recommendation:** Option 3, the "Updated 2000 Plan" is recommended for approval with an increased SHOPP funding level of \$247 million for Fiscal Years 2000/01 through 2003/04. The increased funding allows attainment of the pavement rehabilitation goal approved in the *1998 Plan* for reduction of deteriorated pavement to not more than 5,500 lane miles by fiscal year 2007/08, and provides funding for the new safety, roadside and operations needs identified in the *Draft 2000 Plan*. This recommendation maintains the 4-year funding level identified in the *1998 Plan* for pavement rehabilitation; and, increases funding for safety by \$188 million, with an additional \$28 million for roadside, and \$31 million for operations.

The Commission in their comments to the "Updated 2000 Plan" has expressed their support to Option 3 by committing an additional \$247 million for the first 4 years of this Plan compared to the first 4 years of the 1998 Plan.

## SHOPP Funding Level as Currently Approved (2000 STIP Fund Estimate):

In November 1999, the CTC adopted the 2000 STIP Fund Estimate. Funding for the 4-Year State Highway Operation and Protection Program (SHOPP) for fiscal years 2000/01 to 2003/04 was continued at the 1998 recommended level, except for an adjustment increasing the annual cost escalation factor from 2.2 percent to 3.5 percent. This change was recommended by the Department of Finance and approved by the CTC. In addition, the 2000 STIP Fund Estimate included funding projections for fiscal years 2004/05 and 2005/06, consistent with the new requirements for advanced programming in the recently enacted Assembly Bill 1012. Proposed SHOPP funding in the Fund Estimate for fiscal years 2004/05 and 2005/06, was increased \$250 million and \$275 million respectively to meet the increased needs for delivery of safety, roadway corridor and operational projects. It was agreed that any further funding adjustments to the baseline projections approved in the 1998 Plan would be addressed in the *2000 Plan*.

During deliberations on the 2000 Fund Estimate, the CTC discussed possible lapse in federal funding because of failed project delivery primarily in the Local Assistance Program. The CTC created a "Contingency Fund" for the SHOPP to allow additional programming and delivery of SHOPP projects to prevent such a lapse of federal funding. The "Contingency Fund" includes the following three federal program fund types: Congestion Mitigation and Air Quality Improvement (CMAQ), Regional Share of Surface Transportation Program (RSTP), and Regional Share of Bridge Program (BR). In some cases, these fund sources have limiting conditions placed on the types of projects, geographic constraints on the use of the funds, or time constraints on when the funds must be used.

The CTC directed that the "Contingency Funds" emphasize Traffic Operations Strategies (TOPS). However, because of the different fund types and eligibility, it may also provide some additional opportunity for funding safety, roadway corridor and operations projects. Caltrans recommends use of the Contingency Funds as follows:

- CMAQ funds for TOPS projects.
- RSTP funds for safety projects, pavement rehabilitation and corridor projects.
- BR funds for unforeseen bridge seismic retrofit and scour correction work.

Caltrans will manage the "Contingency Funds" as part of the SHOPP. Caltrans will prepare a separate "Forebay" list of projects for use of the "Contingency Funds".

The *2000 Plan* also identifies "other funding needs" that will be addressed in future updates. These needs are the result of recent changes to legislation, regulations or program management decisions to improve the cost effectiveness of SHOPP delivery. The scope, estimated cost and delivery of these items need further study and definition before funding recommendations can be made. The total needs are comparable to the SR-8 report previously submitted by the California Transportation Commission to the Legislature. Additional studies on each item listed below will be incorporated into the *2002 Plan*:

- Storm water runoff
- Recurring storm damage locations and repair
- New and rehabilitated office buildings
- New Safety Roadside Rest Areas
- Corridor rehabilitation strategies
- Traffic Operations strategies
- Hazardous waste removal

## PART 2. THE PLAN

### OVERVIEW

The *1998 Plan* identified management strategies and goals for each of four SHOPP elements. Goals contained in the *1998 Plan* are summarized in the following table.

#### Goals Identified In the 1998 Plan:

<b>SAFETY</b>	<ol style="list-style-type: none"><li>1. Reduce the number and severity of accidents.</li></ol>
<b>ROADWAY REHABILITATION</b>	<ol style="list-style-type: none"><li>1. Reduce deteriorated pavement needs.</li><li>2. Switch from “worst-first” to “preventive treatment” management strategy.</li><li>3. Use longer-life pavement rehabilitation on roadways where the average daily traffic is greater than 150,000 or average daily truck volume is greater than 15,000.</li><li>4. Implement “preventive maintenance” strategies on bridges.</li></ol>
<b>ROADSIDE REHABILITATION</b>	<ol style="list-style-type: none"><li>1. Keep mitigation promises.</li><li>2. Reduce highway worker exposure to traffic.</li><li>3. Ensure that existing safety roadside rests comply with Health and Safety Codes and Americans with Disabilities Act (ADA) requirements.</li></ol>
<b>OPERATIONS</b>	<ol style="list-style-type: none"><li>1. Better utilize existing highway facilities.</li><li>2. Protect the state highway system from overweight and illegal loads.</li><li>3. Implement land and building facilities consolidation studies.</li><li>4. Bring facilities up to current standards.</li></ol>

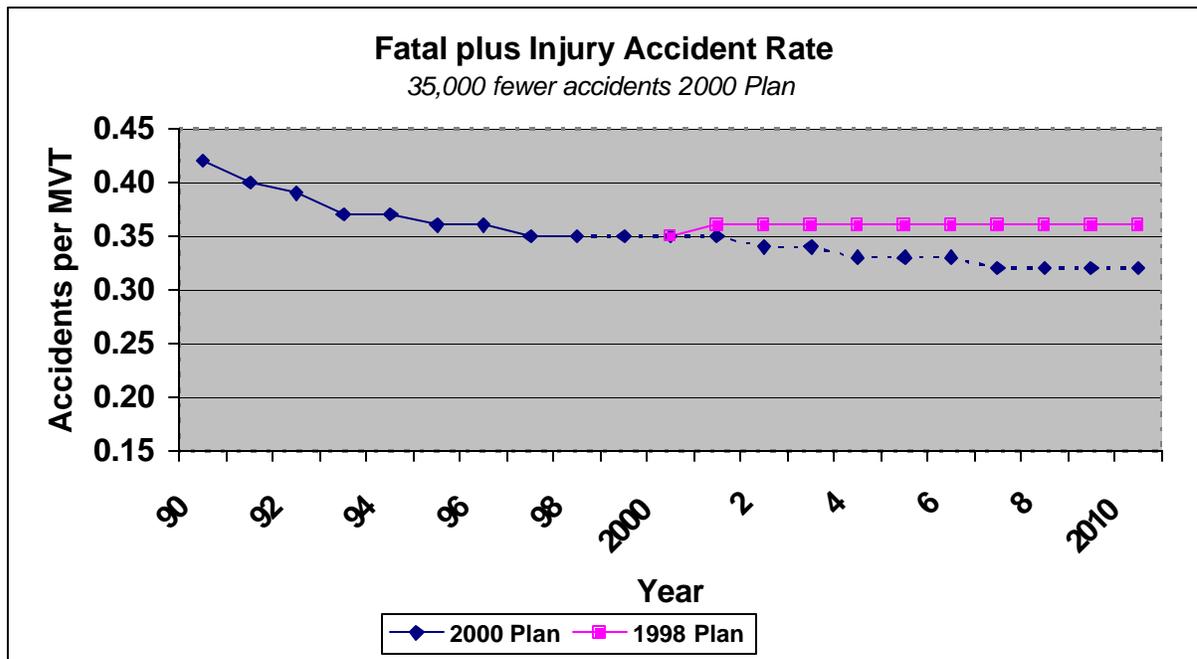
For the 1998/1999 fiscal year, Caltrans delivered 91% of the programmed projects and 117% of the programmed dollars. An additional \$190 million of future year programmed SHOPP projects were advanced.

The following sections will identify accomplishments since approval of the *1998 Plan*, proposed funding for the *2000 Plan*, a restatement of goals with changes from the *1998 Plan* clearly identified, actions that will direct future SHOPP investments, other needs that require further analysis, and process improvements.

## SAFETY

### Accomplishments:

The goal of the Safety element of the *1998 Plan* was to reduce the number and severity of accidents. The chart rate of “fatal-plus-injury” accidents has been level since the *1998 Plan* was adopted, and is projected to decrease slightly over the next several years.



Caltrans requires investigation of accident locations. About 35% of the investigations result in the identification of some corrections. These corrections are implemented through maintenance work orders, minor projects, SHOPP projects or incorporating the correction into a STIP project already underway at the particular location. The *1998 Plan* anticipated that improvements would be implemented at all accident sites with a Safety Index greater than 200. Caltrans fully met that objective.

Safety projects are evaluated by comparing the accident rates for two years prior to project construction with accident rates at the site two years after construction. This information is currently being compiled for projects constructed in 1998/99 and 1999/00, and will be reported in the *2002 Plan*. The average benefit-to-cost ratio for Traffic Safety projects is estimated at 10:1, based on the expected reduction in the number of traffic accidents and associated costs over an assumed 15-year project life.

SAFETY FUNDING FY 00/01-09/10 (\$ millions)			
ACTIVITIES	Option 1: “1998 Plan”	Option 2: “Draft 2000 Plan”	Option 3: “Updated 2000 Plan”
Traffic Safety Improvements (includes CURE and 2&3 lane roads)	\$538	\$995	\$995
Upgrade Median Barriers	\$187	\$217	\$217
<b>TOTAL</b>	<b>\$725</b>	<b>\$1,212</b>	<b>\$1,212</b>

**Goals:**

*Goal:* Reduce the number and severity of fatal-plus-injury accidents.

The fatal-plus-injury accident rate has decreased to 0.35 fatal-plus-injury accidents per million vehicle miles of travel (see Chart on page 9). The goal is to continue this declining trend and achieve a rate of 0.32 by 2010. This would result in approximately 35,000 fewer fatal-plus-injury accidents during the 10-year period as compared to maintaining the current rate of 0.35.

*New*

*Goal:* Reduce exposure of highway workers to highway traffic.

Upgrade existing metal and cable median barriers with concrete median barriers on high-volume freeways with narrow medians. Concrete median barriers require less maintenance and repair than metal and cable barriers when hit by vehicles. This results in less traffic exposure for maintenance employees and less traffic congestion due to lane closures during maintenance and repair operations.

## **Actions:**

### **Traffic Safety Improvements:**

Action: Program all projects which have a Safety Index greater than 200.

The Department began using the Safety Index (SI) to identify projects during the late 1960's in response to the Federal Highway Safety Act of 1966. The SI provides a consistent approach to assess the safety implications of a proposed project. It is based upon the estimated cost of accidents prevented as a result of a proposed project as compared to the construction cost of the project itself. The SI is now used in litigation proceedings to evaluate liability.

Approximately 6,800 accident investigations are conducted each year. About 35% of these investigations require some correction to the highway. Corrections are accomplished by maintenance work orders, minor projects, SHOPP safety projects or by incorporating an improvement with a STIP project. All corrections with a Safety Index of greater than 200 are programmed as a safety project.

Historically about 80 safety projects have been completed each year; 55 with SHOPP funds and 25 using Minor funds. During 1999 the accident cost factors in the Safety Index were updated to be consistent with cost factors used by other states (as recommended by the Federal Highway Administration and the National Safety Council). This new methodology identifies all costs associated with accidents, including items commonly contained in tort liability settlements and awards. These increased accident cost factors are expected to increase the number of safety projects by 70%.

Action: Implement at least twelve "Clean Up the Roadside Environment" (CURE) projects each year.

The CURE program includes projects that remove, relocate, make breakaway or shield obstructions near the traveled way, and upgrade traffic safety devices. (About one third of the fatal accidents occur off the traveled way.) CURE is expected to save about 40 lives per year. The estimated cost for this action is the same as recommended in the *1998 Plan*.

### **Median Barriers:**

Action: Install median barriers at all locations meeting updated 1997 median barrier policy by 2002/03.

New median barrier study warrants were developed in 1997. When the projects identified as a result of the 1997 policy are completed, Caltrans expects the number of fatal cross-median collisions to be reduced by 50% statewide. All qualifying locations have been identified and are included in the Traffic Safety Improvements needs, including locations not included in the *1998 Plan*. About 40 miles of new barriers still need to be programmed into the 2000 SHOPP to complete the new median barriers required by the policy. Construction will be completed by 2002/03. As new locations meet the updated study warrants, they will be scheduled for construction. It's estimated that 10 miles of new median barriers that meet warrants will be added annually.

Action: Upgrade existing metal and cable median barriers with concrete barriers on high volume freeways with narrow medians.

Funding needed to upgrade all 195 miles of existing median barriers is included in this *Plan*. These projects will improve safety for Caltrans workers since concrete barriers do not require as much maintenance as metal and cable median barriers. Approximately 20 miles of existing metal and cable median barriers will be upgraded annually.

## **ROADWAY REHABILITATION**

### **Accomplishments:**

One of the primary goals of the Roadway Rehabilitation element of the *1998 Plan* was to reduce the backlog of pavement needing rehabilitation. The *Plan* identified a goal of reducing the backlog to no more than 5,500 lane miles of pavement by 2007/08. Achievement of this goal, together with a focus on preventive treatment and use of longer-life pavement on highways with high volumes of traffic will result in improved trip quality for motorists and the most cost-effective long-term program.

Caltrans surveys condition of the pavement on the State Highway System on an annual basis. The proposed funding for pavement rehabilitation projects in the *Plan* is projected to reduce the lane miles of distressed pavement as shown in Appendix 3.

The *1998 Plan* included \$1,193 million for roadway rehabilitation during the first two years (1998/99 and 1999/00). Accomplishments include:

<b><i>1998 PLAN</i></b>	<b>ACCOMPLISHMENTS</b>
Rehabilitate 5,100 lane miles of distressed pavement (includes CAPM treatments).	Rehabilitated 5,766 lane miles of pavement.
Goal of 1800 lane miles over 10 year period. Implement pilot program to test new materials and construction methods for longer-life pavement by 99/00.	Constructed 10 lane miles of longer-life pavement and awarded contracts for 50 more lane miles. Pilot program implemented.
Rehabilitate 108 bridges	Awarded 130 construction contracts for bridge rehabilitation
Complete 21 bridge scour projects	Awarded 9 construction contracts for bridge scour projects
No measurable objective established.	Completed 12 “protective betterment” projects

Some bridge scour projects planned for delivery during the first two-years of the Plan were delayed because of environmental concerns. Project delivery and funding for repair of the scour critical bridges have been adjusted in the *2000 Plan* to reflect this issue.

<b>ROADWAY REHABILITATION FUNDING</b>			
<b>FY 00/01-09/10</b>			
<b>(\$ millions)</b>			
<b>ACTIVITIES</b>	<b>Option 1: “1998 Plan”</b>	<b>Option 2: “Draft 2000 Plan”</b>	<b>Option 3: “Updated 2000 Plan”</b>
Pavement & Bridge Rehabilitation (includes corridor management strategy, hazardous waste correction, damage repair and protective betterments)	\$6,040	\$6,227	\$6,198
Longer-Life Pavement	\$1,400	\$1,425	\$1,425
Scour Repair	\$0	\$145	\$145
<b>TOTAL</b>	<b>\$7,440</b>	<b>\$7,797</b>	<b>\$7,768</b>

**Goals:**

*Goal:* Reduce deteriorated pavement needs.

According to public surveys both in California and other states, smooth-riding pavement ranks first with motorists. The State Highway System has over 15,000 centerline miles (over 49,000 lane miles). Approximately 8,700 lane miles need immediate rehabilitation. Caltrans has developed a Pavement Rehabilitation Model that identifies the most cost-effective combination of actions while recognizing that additional lane miles of distressed pavement are continuously being added to the inventory. The goal is to reduce the inventory to no more than 5,500 lane-miles of distressed pavement annually by 2007/08.

*Goal:* Use longer-life pavement rehabilitation on roadways where the average daily traffic is greater than 150,000 or average truck volume is greater than 15,000.

Caltrans has identified average daily traffic and truck volume thresholds where longer-life pavement provides high user benefit and the most cost-effective rehabilitation strategy (150,000 average daily traffic or 15,000 average daily truck volume).

*Goal:* Switch from worst first to preventative treatment management strategy.

Caltrans is implementing this new management strategy. Changing from worst first to preventative treatment management will reduce rehabilitation cost by up to 10 percent.

*Goal:* Avoid structure failure through preventative treatment management.

Bridges and other structures are an essential element of the highway system. Due to high replacement costs and the significant travel and economic impacts caused if they fail, bridges must be kept in a good state of repair. Caltrans uses Caltrans' bridge management information system (PONTIS) to schedule preventative treatments at the optimum point in time to defray major rehabilitation and replacement costs. Over half of the nearly 12,000 bridges on the State Highway System are over 30 years old. As the bridges get older, rehabilitation costs are expected to increase from \$100 million per year to over \$200 million per year in 2006-07.

*New*

*Goal:* Protect highway facilities from damage caused by flooding, slipouts, slides or other physical forces.

Caltrans has identified about 1,000 locations on the State Highway System that are closed repeatedly due to storm damage. Caltrans proposes to identify permanent solutions for these problem locations.

*New*

*Goal:* Develop corridor projects in major urban areas and significant inter-regional routes.

Caltrans is developing the "Corridor Concept." This concept would improve the roadway, visual aesthetics, traffic safety and operations of an entire segment of a high-demand freeway. This will minimize traffic delays by reducing the number of lane closures, revitalize the route and reduce maintenance costs in the long-term. Caltrans has identified about \$3 billion of projects that may benefit from a corridor approach, and continues to define corridors and refine cost estimates.

## **Actions:**

### **Pavement and Bridge Rehabilitation:**

Action: Reduce the inventory of deteriorated pavement to no more than 5,500 lane miles.

The combination of pavement treatments will result in achieving the goal of 5,500 lane miles of deteriorated pavement. Strategies include routine maintenance activities (not funded in the SHOPP), capital preventive maintenance (CAPM), and more extensive pavement rehabilitation. Caltrans will pilot the "Corridor Concept" strategy on key corridors to complete all work necessary within the project limits. This strategy will result in cost economies from the larger projects, significantly reduce future traffic disruption, and improve safety by eliminating the need for additional near term projects. Programming for the corridor projects will be triggered by pavement rehabilitation needs, with funding for the project coming from other SHOPP elements based on the different types of work needed. Delayed funding in the *Draft 2000 Plan* may result in delay in meeting the proposed goal of 5,500 lane miles of by about one year. Early funding proposed in the *Updated 2000 Plan* (Option 3) will allow attainment of the goal by fiscal year 2007/08.

Action: Repair all bridges identified through the inspection program.

There are over 12,000 bridges on the State Highway System routinely inspected by bridge engineers once every two years. Recommendations for repair are made for bridges that may not provide the expected level of service. These repair recommendations can range from simple routine maintenance to major rehabilitation or bridge replacement.

Action: Raise route-critical bridges over state highways to at least 16'6" of clearance.

There are 211 bridges over State highways that have less than 16'6" of clearance (the current Federal standards for Interstate routes). Of this total, 56 bridges have also been identified as having no convenient detour. This becomes an issue when routing over-height transportation permit loads. Without a readily available detour, they may need to be routed over a more circuitous route resulting in economic impact on the California economy. This Plan recommends \$30 million in future funding to raise the 56 bridges to the 16'6" standard.

Action: Remove hazardous waste contamination from Caltrans-owned facilities as contamination is identified.

The *Plan* provides funds for cleanup of hazardous waste contamination on state highway and other department-owned property when the site is not part of a programmed STIP, SHOPP, or Minor Project. The recommendation is based upon historical trends. Actual sites are unknown. Caltrans is developing a clean-up strategy that will be included in the *2002 Plan*.

### **Longer-Life Pavement:**

Action: Construct 1,800 lane miles of longer-life pavement on specific high-volume corridors by 2010.

During the last 2 years, Caltrans has piloted implementation of longer-life pavement strategies. The strategies include both portland cement and asphalt concrete materials. The pilots have resulted in the identification of new materials and confirmed the construction industry's ability to work with the new materials. Caltrans intends to meet the delivery goal of 1,800 lane miles of longer-life pavement on high-volume corridors by 2010.

### **Scour Repair:**

Action: Complete bridge scour evaluation and mitigation by 2008/2009.

In response to Federal requirements, an analysis of scour-critical bridges is underway. Corrective work is being scheduled over a 10-year period that began in 1998-99. About 4,700 state owned bridges could be subject to catastrophic scour failure. Over half of these bridges have been evaluated, and about 3% require mitigation. Evaluation of the remaining bridges is scheduled for completion by 2002.

## **Water Quality Standards:**

Action: Complete a comprehensive study by 2002 to identify costs and requirements associated with achieving newly adopted federal and state water quality standards.

To comply with federal and state water quality standards, Caltrans must improve drainage systems and water treatment facilities statewide. These needs will be met through the individual transportation projects, STIP and SHOPP. In some cases, Caltrans may contribute funding to a city or county for an area-wide project to treat storm water.

Storm water regulations and legislation may require additional projects specifically directed at mitigating storm water impacts. Caltrans will comply with these new requirements on a case by case basis. By 2002, Caltrans will evaluate the full impacts of the regulations and identify an action plan including cost projections.

This study will include details on the new agreement between California and Nevada for environmental improvements in the Lake Tahoe Basin, with descriptions of projects needs, estimated costs and implementation schedules.

## **Recurring Storm Damage Locations:**

Action: Develop a plan by 2002 to address recurring problems.

Caltrans has identified about 1,000 locations on the State Highway System that repeatedly close due to drainage and flooding problems, erosion, rock fall, and slope movement. "Protective Betterment" projects could extend the useful life by adding elements that were not anticipated at the time of initial construction, ranging from upgrading drainage to major re-design on a new alignment. These more-permanent solutions (if any) have not been defined or evaluated for cost effectiveness for all these locations. The benefits include safety, maintenance cost savings, and less inconvenience to the public. Caltrans proposes to develop and prioritize specific projects in the next several years. A plan with specific problem solutions must be developed before specific projects can be programmed. The benefits of implementing permanent solutions to these problems are safety, less inconvenience to the public and savings in maintenance costs. No additional funding for the recurring problem locations is proposed until the additional studies have been completed.

## **ROADSIDE REHABILITATION**

### **Accomplishments:**

The *1998 Plan* for the years 1998/99 and 1999/00 included \$56 million for Roadside Rehabilitation projects. The following table compares expectations that formed the basis for the funding level proposed in the *Plan* with projected accomplishments during the first two years (1998-2000).

<i>1998 PLAN</i>	<b>ACCOMPLISHMENTS</b>
Restore 1,040 acres of highway landscaping.	Restored 1,089 acres of highway landscaping.
Install 380 acres of new landscaping over 8-year period (about 45 acres per year). Two-year total: 90 acres.	Installed 207 acres of new landscaping at four locations
Complete workers' access improvements at 1,500 locations within ten years (150 sites per year). Total of 300 sites over two-year period.	Improved access for maintenance workers at 300 locations in urbanized areas.
Transfer 10 mitigation sites to other agencies by 99/00.	Transferred 11 mitigation sites totaling 708 acres to other agencies.
No measurable objective established.	Rehabilitated one safety roadside rest.

Benefits associated with the above accomplishments include reduced maintenance cost, improved safety for workers and the public, reduced erosion, and reduced water and herbicide use. These projects also meet commitments to the public to maintain the aesthetics of existing landscape areas and improve cleanliness, reliability, and security at safety roadside rest areas.

<b>ROADSIDE REHABILITATION FUNDING</b>			
<b>FY 00/01-09/10</b>			
<b>(\$ millions)</b>			
<b>ACTIVITIES</b>	<b>Option 1: "1998 Plan"</b>	<b>Option 2: "Draft 2000 Plan"</b>	<b>Option 3: "Updated 2000 Plan"</b>
Planting Rehabilitation (includes new planting)	\$216	\$334	\$334
Urban Freeway Maintenance Access, Roadside Enhancements and Highway Beautification	\$160	\$103	\$103
Rest Area Construction and Rehabilitation	\$89	\$211	\$211
<b>TOTAL</b>	<b>\$465</b>	<b>\$648</b>	<b>\$648</b>

## **Goals:**

*Goal:* Keep mitigation promises.

Rehabilitate and improve the appearance of the roadside and supporting facilities consistent with community compatibility, environmental concerns and requirements.

There are over 24,900 acres of existing landscaping along the State Highway System. Most of the landscaping represents commitments made during environmental clearance to mitigate erosion or aesthetic impacts. Highway plantings, like all elements of a highway system, have a useful life and must be periodically updated to continue to serve the intended purpose. About 12,000 acres of landscaping will either reach its effective life during this plan or are already functionally obsolete. The program goal is to attain and maintain the inventory of obsolete plantings at 500 acres.

*Goal:* Reduce maintenance worker exposure to traffic.

This goal can be achieved through such means as maintenance vehicle pullouts, access gates and pave gore areas at on and off ramps. In addition, Caltrans will continue to explore ways to reduce maintenance requirements of roadside features.

*Goal:* Rehabilitate existing safety roadside rests to comply with ADA and Health and Safety Codes, and improve operation and maintenance.

There are 88 existing safety roadside rests, which attract over 100 million users annually. Most of the rest areas were constructed in the mid 1960's and early 1970's. No new rest areas have been constructed since 1984. The existing roadside rests need to be safe and meet current Code requirements. Sixty-five roadside rest areas need improvements.

## **Actions:**

### **Planting Rehabilitation:**

Action: Attain level of no more than 500 acres of obsolete planting by 2010.

Caltrans will restore at least 520 acres of obsolete planting each year. These projects will result in water conservation, reduce water runoff, reduce soil erosion and fulfill Caltrans' commitment to provide landscaping that requires less herbicide. By implementing landscaping that requires less maintenance, worker safety and efficiency will be improved. These projects will also enable Caltrans to meet water quality requirements. The strategy and performance measure for this element has been updated.

Action: Install automatic sprinkler systems on 5,640 acres of landscaping currently irrigated by manual systems.

Automatic sprinklers will reduce water use by 40%, reduce maintenance requirements and increase worker safety by reducing exposure to traffic.

## **Urban Freeway Maintenance Access, Roadside Enhancements and Highway Beautification:**

Action: Complete 1,500 locations identified to reduce exposure of Caltrans maintenance workers to traffic by 2009.

Urban freeway maintenance access projects involve placing access gates in the freeway fences (allow parking and access from adjacent streets), and constructing maintenance vehicle pullouts along freeway shoulders for safe parking of maintenance vehicles, and paving narrow gore areas at on and off ramps. During the timeframe of this *Plan*, Caltrans will improve maintenance worker access at 150 locations each year.

Action: Transfer 12 mitigation parcels to qualified organizations for management by 2010.

As part of the implementation of some state highway projects, Caltrans was required to provide mitigation for endangered species. We now own some mitigation properties and the required maintenance responsibilities. Funding under the Roadside Enhancement task will be used for the costs involved to transfer ownership and maintenance responsibilities for these properties to agencies that are better prepared for the long term maintenance responsibilities. The objective is to transfer at least one mitigation site each year. The greater detail on this element since the *1998 Plan* has resulted in an estimated cost reduction of \$40 million.

Action: Implement the recommendations contained in the *Beautification and Modernization Report* submitted to the Legislature in January 2000.

Caltrans submitted the report as required by the Legislature, identifying “improvements to roadside and related facilities and appurtenances that will benefit the visual aesthetics of the highway as well as the maintainability of the facility.” A quality team identified twenty projects to be completed by 2004/05. These “showcase” projects will permit Caltrans to evaluate proposed improvements for appropriateness of statewide application and cost effectiveness. The projects are intended to improve the appearance of the highway corridor, reduce repetitive maintenance tasks, increase worker safety and improve highway facility life-cycle costs. Estimated cost to complete the showcase is \$52 million. This is a new need, not identified in the *1998 Plan*.

## **Rest Area Construction and Rehabilitation:**

Action: Update the Safety Roadside Rest Area Master Plan in 2000, and pursue up to six new rest areas through joint development opportunities.

A new master plan will be developed in 2000 based on reevaluation of traffic and safety needs and updated planning criteria. Statutes allow up to six rest areas to be constructed as part of a Joint Economic Development Demonstration Project. Joint development interest will continue to be sought prior to development of any new rest area location. This *Plan* recommends the State develop these six new rest areas in the next ten years if we are unable to develop the joint partnerships. Preliminary cost estimates suggest a potential need of at least \$50 million to accomplish this objective.

Action: Update existing roadside rests by 2007 to comply with Health and Safety and ADA.

Operational and maintenance deficiencies will be addressed by upgrading and increasing sewage system capacity, improving and increasing water supplies and electrical systems to meet health and safety codes and to bring facilities up to current CAL-OSHA and ADA code requirements. Rest areas also need to be expanded in size to accommodate increased use by cars, large trucks and tour buses to reduce the traffic congestion and related safety problems. New features include an office area/work room for California Highway Patrol (CHP) and maintenance crew use at many freeway rest areas. A joint operational agreement between Caltrans and CHP addresses strategies for minimizing vandalism and other illegal activities and for enforcing rest area use regulations.

## OPERATIONS

### Accomplishments:

The Operations element includes such diverse activities as transportation system management, commercial vehicle enforcement facilities, and office building construction. As reported in the *1998 Plan*, these activities are intended to improve traffic conditions on the State Highway System, protect the system from overweight and illegal loads, and bring Caltrans-owned buildings up to current standards for seismic, safety, ADA, and asbestos materials.

The *1998 Plan* for the years 1998/99 and 1999/00 included \$250 million of Operations projects. The following table compares workload expectations that formed the basis of funding as proposed in the *Plan* with accomplishments during the two-year period.

<i>1998 PLAN</i>	ACCOMPLISHMENTS
No measurable objective identified.	Improved two TMCs; installed closed circuit television cameras at 110 locations; installed 46 miles of fiber optic cable; installed TMC signal interconnections at 40 locations.
No measurable objective identified.	Constructed 15.9 lane miles of passing lanes, 4.1 lane miles of auxiliary lanes; improved ramps and interchanges at 7 locations; improved intersections and signals at 14 locations; completed geometric improvements along 5.3 centerline miles of highway.
Improve two stations every three years.	Improved one commercial weigh station.
Replace obsolete lighting facilities by 1999/2000.	Completed eight signs and lighting rehabilitation projects.
No measurable objective identified.	Upgraded 14 maintenance stations.

<b>OPERATIONS FUNDING</b>			
<b>FY 00/01-09/10</b>			
<b>(\$ millions)</b>			
<b>ACTIVITIES</b>	<b>Option 1: "1998 Plan"</b>	<b>Option 2: "Draft 2000 Plan"</b>	<b>Option 3: "Updated 2000 Plan"</b>
Operational Improvements (includes lighting)	\$471	\$913	\$926
Operational Facilities (maintenance and equipment)	\$507	\$372	\$372
Weigh Stations	\$192	\$158	\$158
<b>TOTAL</b>	<b>\$1,170</b>	<b>\$1,443</b>	<b>\$1,456</b>

## **Goals:**

*Goal:* Better utilize existing highway facilities.

Improve traffic reliability by reducing congestion and delay locations. Operational improvements enhance traffic flow on state highways at spot congestion or geometrically inadequate locations. These projects do not increase the design-capacity of the state highway system, but rather maintain or improve existing roadway characteristics. They often rectify situations not foreseen during initial design or construction and vehicle operational and size changes that have occurred over time. Caltrans has identified about 700 locations potentially needing some corrective actions. Motorists benefit from these projects with reduced travel times, increased reliability, and reduced congestion.

*Goal:* Protect the State Highway System from overweight and illegal loads.

Commercial vehicle enforcement facilities are used to monitor compliance with laws and regulations. These "weigh stations" are owned, constructed, and maintained by Caltrans and staffed and operated by the CHP. Weigh stations are used to protect highways from excessive damage to the pavements by overweight vehicles. The CHP also conducts safety inspections at these facilities that reduce the number and severity of traffic accidents involving commercial vehicles. At numerous locations other state agencies (DMV, Board of Equalization, Air Resources Board, Department of Food and Agriculture) perform their mandated regulatory enforcement duties. Currently there are 53 weigh stations statewide and 58 mini sites (special turnouts for random enforcement using portable equipment). These enforcement facilities are placed at key locations on the State Highway System.

*Goal:* Implement land and building facilities consolidation studies.

Consolidation studies to improve efficiency and reduce costs have been completed for the highway maintenance stations and equipment shop facilities.

*Goal:* Bring land and building facilities up to current standards for seismic, safety, ADA, and asbestos materials.

Most of Caltrans' land and building facilities are old and do not comply with current requirements for seismic, safety, ADA, and asbestos materials.

## **Actions:**

### **Better utilize existing facilities:**

Action: Complete cost effective operational improvements by 2010.

Projects are identified through complaints from the general public, safety investigations, operational studies and investigations, and congestion monitoring. In 1999, Caltrans identified over 700 locations where operational improvements may be warranted over the next ten years. Further analysis of these locations will be performed under the TOPS process. Caltrans is currently improving an existing process to prioritize the problem locations. This process will apply not only to the SHOPP, but will also provide input and increased opportunity for coordination with STIP projects.

Action: Implement improvements identified in the Traffic Operations Strategies (TOPS) by 2010.

Caltrans has identified various techniques to reduce congestion on urban freeways. These TOPS projects include improvements to the Transportation Management Centers (TMCs) and their field equipment, systems to provide real-time travel information to the TMCs and the public, and some operational improvements. The goal is to minimize the stop-and-go traffic conditions that reduce traffic throughput by approximately 25%.

TOPS projects include:

- *Transportation Management System (TMS) projects* will allow real time monitoring of the current system's operation, allow real time decisions on managing the system and allow dissemination of that information to users allowing for real time decision making regarding trip routing, timing, mode, etc.
- *Corridor Operations* are the more traditional operational improvements applied to a complete corridor allowing smoother corridor traffic flow, which further results in increased vehicle "throughput", reduced congestion, and some enhanced safety.

Current TOPS needs have been identified at roughly \$4.7 billion for TMS and Corridor Operations. It is expected that funding for TOPS will be from multiple, coordinated sources. A detailed plan for implementation of the TOPS program will be completed and incorporated into the *2002 10-Year Plan*. Prior to completion of this detail plan, Caltrans will fund some TOPS projects in the SHOPP as Operational Improvements and will coordinate needs with appropriate Regional Transportation Planning Agencies for joint funding in the State Transportation Improvement Program (STIP). The recommended funding in the *Updated 2000 Plan (Option 3)* recommends restoring the funding level for the first three years of the SHOPP to that in the *1998 Plan*. This change provides early funding for TMC field elements.

## **Protect the state highway from overweight loads:**

Action: Improve existing weigh stations by 2012 and complete two new weigh station sites every three years until a total of eleven new sites have been constructed.

A joint Caltrans/CHP study identified needs for eleven new or upgraded weigh station sites. The recommendation provides for funding two of these new sites every three years and for rehabilitation, operational improvements and weigh-in-motion facilities at existing sites. By 2012, projected increases to California's external trade flows through major ports, from other states and Mexico are expected to result in a significant increase in truck volumes. The estimated cost for this action is the same as recommended in the *1998 Plan*.

## **Consolidate operations facilities (maintenance and equipment):**

Action: Update maintenance and equipment facilities statewide to comply with seismic, safety, ADA and asbestos-removal requirements. Implement consolidation plan by 2010.

This objective ensures that Caltrans-owned facilities are cost-effective and meet current requirements for seismic, safety, ADA and other Health and Safety Code requirements.

There are 410 highway maintenance facilities located throughout the state. This *Plan* proposes to rehabilitate existing facilities and well as construct some new ones. A consolidation plan is being implemented which will result in improved efficiency and a slight reduction in the overall number of maintenance station locations.

There are 25 equipment shops for repairing and maintaining a fleet of about 12,800 vehicles and other equipment needed to maintain state highways. Most of these facilities were constructed 30 to 50 years ago and are only marginal to serve today's equipment.

Action: Complete a comprehensive study of office needs and funding options.

During the 1980's and 1990's, Caltrans used bond funding to construct new office buildings or leased office space to meet its needs. This practice minimizes the annual short-term costs making more funding available for STIP and SHOPP purposes. Several of Caltrans' office buildings need to be replaced. If bond funds are not used, there could be a potential need for up to \$378 million for office building construction, renovation or seismic retrofits. These costs are not included in this *Plan*.

## **OTHER NEEDS**

During development of the *2000 Plan*, several areas of concern were identified that need additional analysis before a recommendation can be made on the actual funding need and the time schedule to implement each item. Preliminarily, when taken in aggregate and added to the recommendations in this *Plan*, the total needs are comparable to the SR-8 report previously submitted by the California Transportation Commission to the Legislature. Additional studies on each item will be completed before, and the findings incorporated into the *2002 Plan*.

The areas of concern include:

- Storm water runoff compliance
- Recurring storm damage locations and repair
- New and rehabilitated office buildings
- New Safety Roadside Rest Areas
- Corridor rehabilitation development strategy
- Traffic Operations Strategies
- Hazardous waste removal

## PROCESS IMPROVEMENTS

Since the *1998 Plan* was adopted, Caltrans has identified several process improvements intended to improve delivery and management of projects funded through the SHOPP. As discussed below, some of these improvements have already been implemented and are already yielding positive results. Caltrans proposes to implement remaining improvements over the next two-year period.

**Program Goals and Objectives.** Developing measurable objectives for each element of the SHOPP plan has been very challenging. As noted previously, many of the objectives presented in the *1998 Plan* were not measurable. In the *2002 Plan*, Caltrans expects to have refined goals and objectives for each of the SHOPP program elements. This will result in management tools for setting priorities, distributing resources, and monitoring accomplishments.

**10-Year Plan Updates.** The timing and reporting requirements for this *Plan* are contained in statute. Statutes require the report to be submitted to the CTC in January of each even-numbered year. A shortcoming of this timeline is that the *Plan* is actually developed *after* the Fund Estimate is adopted by the CTC--too late to provide timely information for the Fund Estimate. To overcome this disadvantage, Caltrans proposes to update this *Plan* on an annual basis.

**District 10-Year Plans.** Each Caltrans District is developing its proposed 10-Year Implementation Plan based upon guidance provided in the *2000 Plan* and program goals and objectives established by the respective Program Manager. These implementation plans will become the input documents for the *2002 Plan*. Statewide program goals will be the basis for the Districts to define specific projects, costs and benefits. This will ensure that proposed projects are consistent with statewide SHOPP goals, and provide specific project information to our transportation partners at the local and regional level.

**Project Delivery Improvements.** Caltrans implemented a SHOPP Re-engineering Pilot Project with a goal to reduce project-engineering costs and the overall time from project identification to completion of construction. All of the pilot projects have been completed, and results are being evaluated. In 1998/1999, improvements in project delivery processes enabled Caltrans to deliver \$125 million of additional SHOPP projects in 17 counties.

**Reinvestment Opportunities.** During recent years, Caltrans directed available program resources to additional SHOPP projects whenever possible. These resources came from two primary sources: deleted projects and "savings." As the annual programs are implemented, a few projects are deleted from the program resulting in the opportunity to reinvest those resources. Another source of resources is the difference between the amount programmed for the project versus the California Transportation Commission's funding allocations for construction purposes. (This amounted to 6.7% of "vote savings" during 1998-99). During 1998-99, 17 projects worth \$65 million were programmed as a result of these "reinvestment opportunities."

**"Forebay".** Currently, project development resources can only be expended on projects that are defined in adopted Programming documents, such as a 4-year SHOPP program. In recent times, however, additional revenue has been made available for SHOPP purposes, often with a short time frame to deliver the projects. There is a crucial need to develop a process to permit advancing some project development work so those projects can move to construction more quickly should funding become available. This approach would be consistent with provisions contained in AB 1012 for STIP projects.

**Pavement Rehabilitation Delegation.** In 1999, the California Transportation Commission delegated to Caltrans the authority to approve construction funding of pavement rehabilitation projects programmed in the SHOPP. This delegation expedited advertising and award of construction by about 30 days per project. During the first seven months of this delegation authority, Caltrans approved 46 projects worth \$191 million. Caltrans recommends adding safety projects programmed in the SHOPP to the delegation.

**Corridor Management.** Whenever possible, Caltrans programs complete corridor improvements for construction on highway corridors with heavy volumes of traffic or other identified special needs. Caltrans will pilot a new corridor management strategy on key corridors, to complete all work necessary within the project limits. This management strategy will result in cost economies from the larger projects, and significantly reduce future traffic disruption and improve safety by eliminating the need for additional near term projects.

**California Transportation Improvement Program System (CTIPS).** In 1999, Caltrans implemented a new programming database known as CTIPS. It replaced three older “flat-file” systems with modern relational database software. CTIPS is used for the SHOPP, the STIP and federal programming documents. Regional Transportation Planning Agencies, the California Transportation Commission, and the Federal Highway Administration will also have access and user abilities. CTIPS could replace data systems used by several regional agencies.

# Appendix 1

## Funding Recommendation Details

<b>2000 TEN-YEAR SHOPP RECOMMENDATIONS</b>												
(millions of dollars)												
PROGRAM	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	4-Yr Tot	10-Yr Tot
<b>Traffic Safety</b>												
Safety Improvements	\$86	\$114	\$95	\$95	\$118	\$104	\$97	\$93	\$98	\$95	\$390	\$995
Upgrade Median Barriers	\$20	\$20	\$21	\$21	\$22	\$21	\$23	\$23	\$22	\$24	\$82	\$217
<b>Subtotal</b>	<b>\$106</b>	<b>\$134</b>	<b>\$116</b>	<b>\$116</b>	<b>\$140</b>	<b>\$125</b>	<b>\$120</b>	<b>\$116</b>	<b>\$120</b>	<b>\$119</b>	<b>\$472</b>	<b>\$1,212</b>
<b>Roadway Rehabilitation</b>												
Pavement & Bridge Rehabilitation, Major Damage Repair, Protective Betterments, Critical Bridges, Hazardous Waste Remediation	\$473	\$510	\$522	\$564	\$741	\$722	\$677	\$672	\$662	\$655	\$2,069	\$6,198
Bridge Scour	\$43	\$65	\$4	\$12	\$0	\$21	\$0	\$0	\$0	\$0	\$124	\$145
Longer-Life Pavement	\$120	\$66	\$173	\$121	\$124	\$152	\$163	\$168	\$168	\$170	\$480	\$1,425
<b>Subtotal</b>	<b>\$636</b>	<b>\$641</b>	<b>\$699</b>	<b>\$697</b>	<b>\$865</b>	<b>\$895</b>	<b>\$840</b>	<b>\$840</b>	<b>\$830</b>	<b>\$825</b>	<b>\$2,673</b>	<b>\$7,768</b>
<b>Roadside Rehabilitation</b>												
Planting Rehabilitation	\$16	\$26	\$29	\$30	\$32	\$35	\$36	\$40	\$45	\$45	\$101	\$334
Urban Fwy Maint Access, Rdsd Enhancements & Hwy Beautification	\$14	\$15	\$16	\$16	\$7	\$9	\$7	\$7	\$6	\$6	\$61	\$103
Rest Area Construction and Rehabilitation	\$5	\$13	\$8	\$15	\$36	\$36	\$27	\$23	\$24	\$24	\$41	\$211
<b>Subtotal</b>	<b>\$35</b>	<b>\$54</b>	<b>\$53</b>	<b>\$61</b>	<b>\$75</b>	<b>\$80</b>	<b>\$70</b>	<b>\$70</b>	<b>\$75</b>	<b>\$75</b>	<b>\$203</b>	<b>\$648</b>
<b>Operations</b>												
Operational Improvements	\$75	\$55	\$62	\$86	\$111	\$102	\$110	\$105	\$110	\$110	\$278	\$926
Operational Facilities (Maintenance and Equipment)	\$10	\$34	\$31	\$44	\$33	\$52	\$44	\$34	\$43	\$47	\$119	\$372
Weigh Stations	\$15	\$15	\$15	\$15	\$16	\$16	\$16	\$16	\$17	\$17	\$60	\$158
<b>Subtotal</b>	<b>\$100</b>	<b>\$104</b>	<b>\$108</b>	<b>\$145</b>	<b>\$160</b>	<b>\$170</b>	<b>\$170</b>	<b>\$155</b>	<b>\$170</b>	<b>\$174</b>	<b>\$457</b>	<b>\$1,456</b>
<b>1998 PLAN</b>	<b>\$850</b>	<b>\$860</b>	<b>\$924</b>	<b>\$924</b>	<b>\$991</b>	<b>\$994</b>	<b>\$1,018</b>	<b>\$1,054</b>	<b>\$1,085</b>	<b>\$1,105</b>	<b>\$3,558</b>	<b>\$9,805</b>
<b>2000 PLAN TOTAL</b>	<b>\$877</b>	<b>\$933</b>	<b>\$976</b>	<b>\$1,019</b>	<b>\$1,240</b>	<b>\$1,270</b>	<b>\$1,200</b>	<b>\$1,181</b>	<b>\$1,195</b>	<b>\$1,193</b>	<b>\$3,805</b>	<b>\$11,084</b>
<b>CHANGE FROM 98 PLAN</b>	<b>+\$27</b>	<b>+\$73</b>	<b>+\$52</b>	<b>+\$95</b>	<b>+\$249</b>	<b>+\$276</b>	<b>+\$182</b>	<b>+\$127</b>	<b>+\$110</b>	<b>+\$88</b>	<b>+\$247</b>	<b>+\$1,279</b>

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## Appendix 2

### SHOPP PROGRAM DEFINITIONS

**Overview:** The following program definitions are for the purpose of indicating the overall comprehensive scope of the SHOPP. Official program definitions are contained in Caltrans' Accounting Coding Manual, Volume 1 Chapter 7 – Program Codes which is posted on the internet at: [http://adsc.caltrans.ca.gov/ASC/Coding\\_Manuals/chapter\\_07/index.htm](http://adsc.caltrans.ca.gov/ASC/Coding_Manuals/chapter_07/index.htm).

#### **Safety**

**Safety Improvements:** Projects with a prime purpose of reducing the number or severity of accidents. Projects may be at spot locations or they may be system wide improvements based on warrants and include new median barriers, new or upgraded guardrail and gore protection.

**Urban Freeway Median Barriers:** Projects that reduce the maintenance required for median barriers on high volume urban freeways and improve employee safety by replacing cable and metal barriers with concrete median barriers.

#### **Roadway Rehabilitation**

**Bridge Rehabilitation:** Projects that restore or replace structures when they become inadequate. Included are strengthening to meet permit loadings, rehabilitation of bridge decks and deck joints, replacement of non-standard bridge railing, and work needed to meet standards required under CAL-OSHA.

**Bridge Scour:** Projects that restore or replace bridges with footing scour problems in streambeds.

**Roadway Rehabilitation:** Projects with a primary purpose to rehabilitate roadways that ride rougher than established maximums and/or exhibit substantial structural problems. As a secondary purpose, projects may include rehabilitation or replacement of appurtenances that are failing, worn out or functionally obsolete.

**Long-Life Pavement:** Projects which implement longer-life pavement rehabilitation on roadways where the average daily traffic is greater than 150,000 vehicles and/or average daily truck volume is greater than 15,000 vehicles.

**Major Damage Restoration:** Projects that provide emergency and/or permanent repairs in response to natural disasters, catastrophes, or events such as storm damage, floods, fires, earthquakes or volcanic action. Snow removal, ice control and other minor maintenance activities are not included. Estimates for federal Emergency Repair funding needs are not included in the 10-Year Plan.

**Roadway Protective Betterments:** Projects that extend the useful life of the state highway system by adding facilities that were not anticipated at the time of initial construction. They protect the highways by adding new facilities that prevent damage from flooding, slipouts, slides or other physical forces. In the 1998 Ten-Year Plan this program task was under the Operations category but has been moved to the Roadway Rehabilitation category for administrative purposes.

**Hazardous Waste Cleanup:** Clean up of hazardous waste contamination on state highway and other department-owned property (site is not part of a programmed STIP, SHOPP, or Minor Project).

## Roadside Rehabilitation

**Highway Planting Restoration:** Projects necessary for replacement planting and for rehabilitation of planting and irrigation systems. Includes work to control erosion and to comply with National Pollution Discharge Elimination System (NPDES) permit requirements. It also includes design for safety work (i.e. relocating irrigation valves and main supply lines away from the traveled way), maintenance vehicle pullout areas, paving narrow gore areas and access gates to minimize maintenance worker exposure to traffic.

**New Highway Planting:** Projects that provide new planting at fifteen locations that qualified for new landscaping prior to eligibility changes in 1987. They will satisfy mitigation requirements that have been made to local agencies.

**Urban Freeway Maintenance Access:** Separate projects that will address design for safety issues not included with highway planting or restoration projects that minimize the exposure of highway workers to traffic by improving the off pavement access to urban freeway work sites.

**Roadside Enhancement:** This task provides for fish and wildlife preservation and protection, historical markers, information systems such as logo signs, eliminate qualifying junkyards, removal of nonconforming outdoor advertising signs, roadside ecological viewing areas, scenic enhancements, Surface Mining and Reclamation Act of 1975 requirements, vista points, and relinquishment of environmental mitigation sites.

**Safety Roadside Rest Area Restoration:** Projects that correct operational and maintenance deficiencies in existing roadside rest areas using 20-year design standards, rehabilitate ramps and their parking areas to a safe and healthful condition.

**New Safety Roadside Rest Areas :** In absence of joint development interests, projects that provide seven new roadside rest areas in order to complete the master plan which was updated by the California Transportation Commission in December 1997.

**Control of Freeway Noise in School Classrooms :** Streets and Highways Code Section 216 requires Caltrans to undertake a noise abatement program in school classrooms under certain circumstances and when noise in classrooms reaches certain levels from freeway traffic or freeway construction.

## Operations

**Non-Capacity Increasing Operational Improvements :** Projects that improve the quality of traffic flow along existing roads by reducing spot congestion and traveler aggravation. Increasing the number of through traffic lanes is not permitted.

**Transportation Management:** Projects that are related to State Transportation Management Centers (TMCs), equipment, field equipment and systems that provide information to TMCs. These projects are aimed at reducing system wide congestion primarily in urban areas.

**Weigh Stations and Weigh-In-Motion Facilities:** Provides for new or modifications to commercial vehicle enforcement (weigh/inspection) facilities constructed along state highways. Both weigh-in-motion and automated vehicle identification equipment are included under this task.

**Land & Buildings Equipment Facilities:** Provides for equipment repair facilities, needed for the fleet of equipment that supports Caltrans' Highway Maintenance Program.

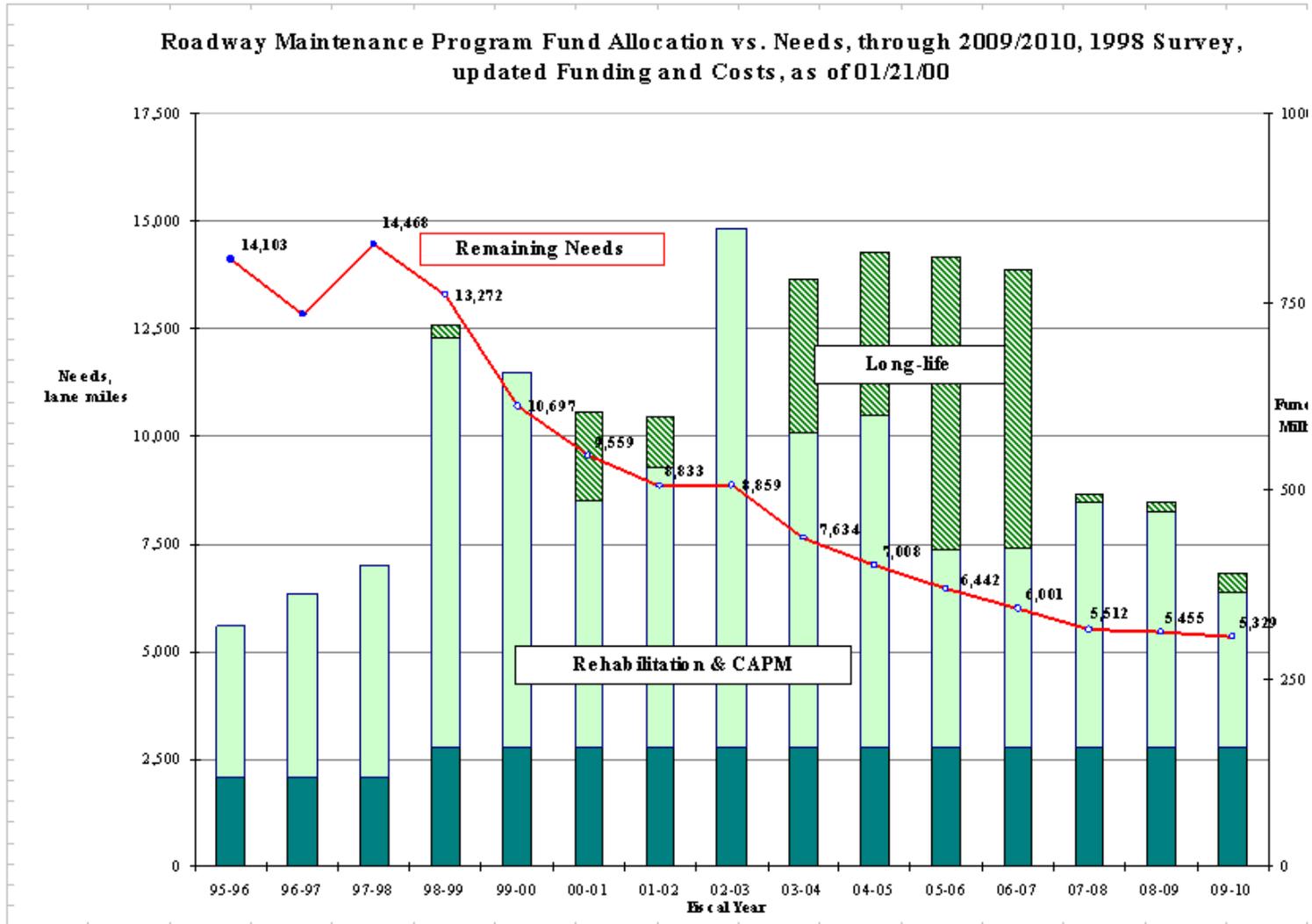
**Land & Buildings Maintenance Facilities:** Provides for rehabilitation or new maintenance stations and ancillary facilities needed to support Caltrans' Highway Maintenance Program.

**Land & Buildings Office Facilities:** Facilities needed to support State transportation activities (e.g., district and headquarters office buildings. Includes ancillary buildings, materials operations warehouses and transportation laboratory facilities.

**ADA New Curb Ramps:** Provides curb ramps for Caltrans' highway facilities in order to comply with Americans with Disabilities Act (ADA) requirements.

**TOPS (Traffic Operations Strategies):** These projects are aimed at reducing system wide congestion primarily in urban areas. One component is projects related to State Transportation Management Centers (TMCs), equipment, field equipment and systems that provide information to TMCs. It is planned to use the CMAQ funds for these projects. Another component is operations improvements such as auxiliary lanes and minor interchange improvements.

### Appendix 3



## Appendix 4

JAMES W. KELLOGG, Chairman  
JEREMIAH F. HALLISEY, Vice Chairman  
ROBERT ABERNETHY  
ROGER A. KOZBERG  
ALLEN M. LAVRENCE  
ESTEBAN E. TORRES  
ROBERT A. WOLF

SENATOR BETTY KARNETTE, Ex Officio  
ASSEMBLYMAN TOM TORLAKSON, Ex Officio

ROBERT I. REMEN, Executive Director

STATE OF CALIFORNIA



GRAY DAVIS  
GOVERNOR

### CALIFORNIA TRANSPORTATION COMMISSION

1120 N STREET, MS-52  
P. O. BOX 942873  
SACRAMENTO, 94273-0001  
FAX (916) 653-2134  
FAX (916) 654-4364  
(916) 654-4245

May 15, 2000

Tony Harris  
Acting Director  
California Department of Transportation  
1120 N Street  
Sacramento, CA 95814

Dear Mr. Harris:

The Commission reviewed the Department's 2000 Ten-Year State Highway Operation and Protection Plan (2000 Plan) at its May meeting. Pursuant to Streets and Highways Code Section 164.6.(b) I am providing the following comments on behalf of the Commission for transmission to the Governor and the Legislature:

1. The Commission still fully supports the Department's 1998 strategy of protecting the public's State Highway System investment as the framework for State Highway Operation and Protection Plan (SHOPP) programming.
2. The Commission recommends that the Department's goal of no more than 5,500 lane miles of distressed pavement by fiscal year 2007/08 be accelerated to fiscal year 2006/07 and not delayed to fiscal year 2008/09. The faster the Department is able to change from a "worst first" to a "preventative treatment" pavement management system the sooner the 10 percent anticipated cost reduction in pavement rehabilitation costs can be achieved.

In order to facilitate the above enumerated goals the Commission, within the framework of the Revised 2000 STIP Fund Estimate, will increase the 4-year 2000 SHOPP funding level by \$247 million to cover newly identified safety, roadside and operational needs of the State Highway system. The Commission will also consider an additional \$150 to \$250 million increase in pavement rehabilitation funding to accelerate the 5,500-lane mile goal to fiscal year 2006/07.

The Commission will act on the SHOPP funding increases at its June 14-15 meeting in San Jose.

If you have any questions please do not hesitate to call Executive Director Bob Remen or me at (916) 654-4245.

Sincerely,

Handwritten signature of James W. Kellogg in cursive.

JAMES W. KELLOGG  
Chairman

cc: Jim Nicholas

carolp/win6/stephen/kellogshopp