JVan Burkel

State of California | Business, Transportation and Housing Agency

Memorandum

To: CHAIR AND MEMBERS
California Transportation Commission

Date: March 29, 2002

From: **DEPARTMENT OF TRANSPORTATION**
Division of Transportation Programming
MS-82

Subject:

I am pleased to enclose the Department's 2002 Ten-Year State Highway Operation and Protection Program Plan (*Plan*) for your review. The *Plan* is required by and meets the requirements of Section 164.6 of the Streets and Highway Code, and must be submitted to the Governor and Legislature by May 1 of each even-numbered year. The *Plan* will be formally presented to the Commission on April 4th for comment.

The *Plan* differs from past Plans submitted to the Commission. The *Plan* continues to summarize the Department's accomplishments since the last version of the *Plan* was adopted and highlights changes proposed for the next ten-year cycle. This *Plan,* however does not contain a funding recommendation for the next 10 years of the SHOPP. Rather, the *Plan* contains a clearly articulated quantifiable goal for each activity eligible for SHOPP funding. The total cost to achieve these goals is approximately $22 billion.

The *Plan* further proposes a series of workshops with the Commission to focus on each of the of the major SHOPP functional areas. Based on those discussions and Commission comments and directions, we propose to refine and update the *Plan*. The update, which will contain a funding recommendation, will be presented to the Commission in advance of the Commission's deliberations for the 2004 Fund Estimate. I believe this approach will achieve understanding and consensus on the purpose of the SHOPP and its role and priority in solving the statewide transportation issues.

If you have questions or comments, please call me at (916) 654-4013.

ORIGINAL SIGNED BY
JIM NICHOLAS

JIM NICHOLAS
Chief
Division of Transportation Programming

Attachment

c: Diane C. Eidam
SHOPP Executive Committee

bc: JNicholas
JVanBerkel
WLewis (or future CTC Liaison)
Programming File

JVanBerkel:gw/Clerical/L&M/VanBerkel/CTC submit 3-28-02.doc

2002
Ten-Year State Highway Operation and Protection Plan
(2002/03 through 2011/12 FY's)

Prepared by: California Department of Transportation

Presented to the California Transportation Commission
April 4, 2002

Required by Streets & Highways Code Section 164.6

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EXECUTIVE SUMMARY

Section 164.6 of the Streets and Highways Code requires the Department to prepare and transmit to the Governor and Legislature a 10-year plan (Plan) for the rehabilitation and reconstruction of all state highways and bridges. The Plan is required to identify rehabilitation needs, schedules for meeting those needs, strategies for cost control and program efficiencies. The Plan then becomes the basis for the Department's SHOPP budget requests and for the adoption of capital program funding levels by the California Transportation Commission (CTC) in the biennial Fund Estimate which is required by Section 163 of the Streets and Highways Code.

The 2002 Plan is structured different from previous Plans. The focus of the 2002 Plan is to refine the inventory of State Highway System (SHS) rehabilitation and reconstruction need and estimated costs, without making a funding recommendation. The 2002 Plan identifies potential needs of over $22 billion, which will be further evaluated and prioritized. During the next several months, the Department intends to conduct open workshops with the California Transportation Commission to discuss these needs and priorities. A 2003 Plan will then be prepared to identify funding recommendations for discussion and consideration during the Commission's preparation of the 2004 Fund Estimate.

The SHS is one of California's most valuable resources. It is the foundation on which the vitality of California's economy is built. It provides a linkage connecting people and goods to growing urban centers, urbanized areas and major gateways. It links the Pacific Rim and Mexico to markets and manufacturing centers throughout the country.

The public's investment in the SHS is estimated at over $300 billion. The system requires continuous monitoring and upkeep to function as originally intended and as it is currently being used. Current needs are statewide.

Much of the SHS was planned, designed and built in the 1950's, 1960's and 1970's. Some of the system hasn't been rehabilitated since it was originally constructed. Not only have these facilities gone beyond their design life, they have also been subjected to traffic volumes significantly greater than originally projected. Annual vehicle miles traveled (VMT) on the SHS increased by 17% (23 billion vehicle miles) since 1988. Current projections are that the demand will increase even more, growing by an additional 55% between 2000 and 2020.

The combination of age and increased demand has resulted in faster rates of pavement deterioration, new accident concentration locations and increased hours of traffic congestion. Safety improvements continue to be the highest priority, but currently, about one of every 5 lane-miles of highway pavement needs rehabilitation or major reconstruction. More than half the bridges on the system are over 30 years old and need to be rehabilitated or replaced. Much of the vegetation along the highways has aged, is dying and needs to be replaced. Existing safety roadside rests need major rehabilitation and new rest areas are needed. System improvements are needed to maximize the efficiency of the existing facilities and reduce congestion, which could save an estimated $13 million per day and up to 530 tons of less air pollutants per day.

The Department has struggled to keep up with the increasing demands. Funding commitments to the SHOPP have increased dramatically in the past two years. While the increased level of SHOPP funding approved in the 2000 Plan has helped make significant improvements, it hasn't over come the previously deferred work and has not kept up with the increased pace of deterioration.

The Department has accelerated delivery and made significant improvements with the funds that are available and worked to meet goals and objectives identified in the 2000 Plan. These improvements include:

- installation of 190 miles of median barriers
- completion of 24 safety projects
- rehabilitation of 5543 lane miles of pavement
- construction of 23 lane miles of longer life pavement
- rehabilitation of 126 bridges and mitigation and/or replacement of 22 scour critical bridges
- restoration of 1,560 acres of highway landscape
- rehabilitation of 13 safety roadside rests
- numerous traffic operational and system management improvements

In addition, the Department is continuing to refine processes and to make improvements which streamline SHOPP management and maximize project delivery. Major improvements include:

- piloting of new design team processes to expedite project design and necessary regulatory clearances
- continued research to improve pavement design and accomplish longer life facilities
- accelerated delivery of programmed pavement rehabilitation and safety projects as a result of California Transportation Commission's (CTC) delegated authority to allocate construction funds
- modified and improved database systems improve accuracy, accessibility and reliability of project data.

The Department will continue to make improvements on the SHS. During the next year, the Department will work to refine needs, reassess goals and objectives, and work with the CTC, industry and other experts to establish recommendations for future SHOPP funding. The Department will issue an updated 10-Year Plan in 2003.

SECTION 1. INTRODUCTION:

BACKGROUND:

Section 164.6 of the Streets and Highways Code requires the Department to prepare and transmit to the Governor and Legislature a 10-year plan (Plan) for the rehabilitation and reconstruction of all state highways and bridges. The Plan is required to identify rehabilitation needs, schedules for meeting those needs, strategies for cost control and program efficiencies. The Plan then becomes the basis for the Department's SHOPP budget requests and for the adoption of capital program funding levels by the California Transportation Commission (CTC) in the biennial Fund Estimate as required by Section 163 of the Streets and Highways Code. The Plan is to be 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 reflects the first four years of the 10-Year Plan.

The 2002 Plan is structured differently from previous Plans. The focus of the 2002 Plan is to identify the inventory of State Highway System (SHS) rehabilitation and reconstruction need and estimated costs, without making a funding recommendation. In identifying the inventory of needs, the 2002 Plan has been divided into 6 categories to address safety; roadway preservation; bridge preservation; roadside preservation; mobility and transportation facilities. The Plan addresses SHOPP managed needs for storm water, office facilities and transportation enhancement activities (SHOPP TEA) separately. The Plan includes the 10-year period from fiscal year 2002/03 through 2011/12.

The 2002 Plan is presented in four sections:

1. Introduction with Background and Findings: an overview of the conditions impacting the SHS;
2. 2000 Plan: a summary of the approved goals, funding levels and listing of major accomplishments since approval of the 2000 Plan;
3. 2002 Plan: a new focus on issues and needs that will be used for a series of work shops and discussions with the California Transportation Commission, industry and other experts prior to updating the Plan in 2003.
4. What's Next

FINDINGS:

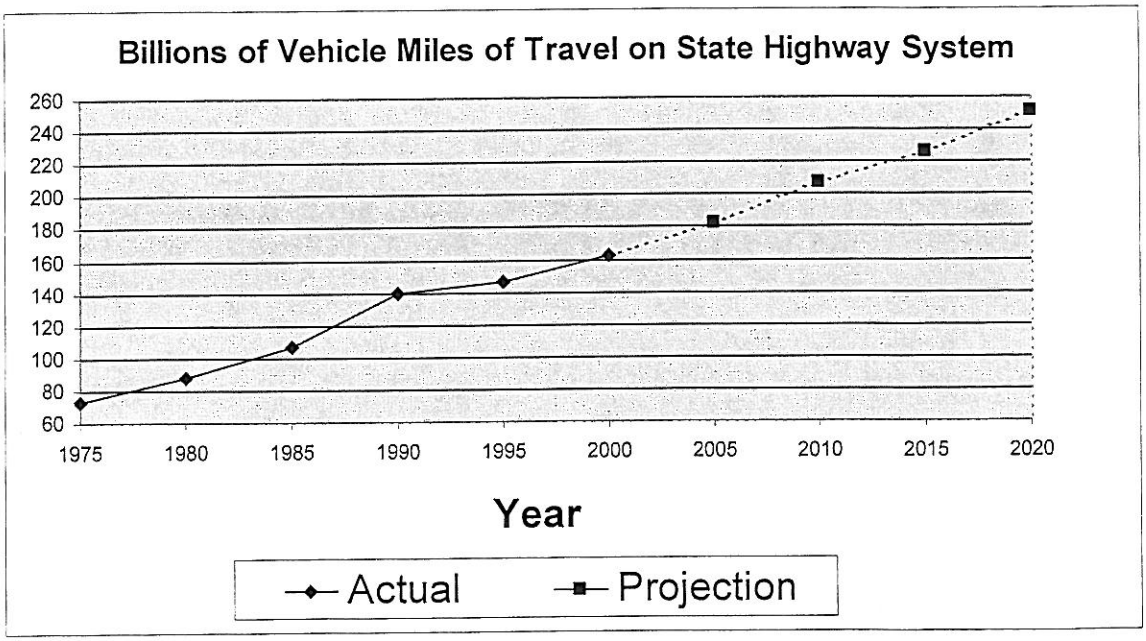
The state highway system includes approximately 15,000 centerline miles (50,000 lane-miles), over 12,000 bridges, thousands of culverts and signs, over 25,000 acres of landscape and irrigation systems, 88 safety roadside rests, transportation management systems, and 53 commercial truck weigh and inspection facilities.

- **The system is valuable**: With a cost estimated at over $300 billion, the SHS is one of California's most valuable resources. It provides for the movement of people and goods statewide. The system is vital to California's economy by linking the Pacific Rim and Mexico to markets and manufacturing centers throughout the country.

- **The system is aging:** Much of the highway system was built in the 50's, 60's and 70's. Some of the system hasn't been rehabilitated since it was originally built. 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 out of every five lane miles of the state highway pavement needs rehabilitation.

- **Demand for use of the system is growing:** Annual vehicle miles traveled (VMT) on the State highway system has increased from 139 billion in 1990 to 162 billion in 2000, an increase of 17%. Between 2000 and 2020, the annual VMT is projected to increase to nearly 251 billion, a 55% increase. During this same period, the volume of freight carried on the SHS is projected to increase 31 percent from 586 million tons to 770 million tons annually.

- **The rate of system deterioration is accelerating**: Increased VMT combined with the age of the system is causing a faster rate of pavement deterioration, new accident concentration locations, and increased hours of traffic congestion.



- **New Needs due to New Requirements:** New laws and regulations, not considered when the system was built, require additional resources. One new requirement is the Federal Clean Water Act controlling storm water run-off.

- **Aging Support Facilities:** Many of the Departments operational and support buildings have deficiencies and are unable to meet current ADA requirements; fire, life, health, and safety codes; seismic, energy, security, and operational standards. Some maintenance stations cannot even accommodate the new larger and more efficient equipment used today.

- **The system requires a large investment of funds:** Previously deferred work has increased the pace of deterioration. Increased levels of SHOPP funding approved in the 2000 Plan have resulted in significant accomplishments as discussed later in this plan. Continued commitment of resources to the State Highway System is needed in order to protect, preserve and improve this valuable investment. Delays will result in a need for additional future effort to compensate for prior deferred maintenance and rehabilitation.

SECTION 2. 2000 Plan

The 2000 Plan identified goals and recommended funding levels for the rehabilitation and reconstruction of the state highway system. The Plan was reviewed by the California Transportation Commission (CTC), during their meetings of March and May 2000. The CTC commented on the Plan, and agreed on increased funding for additional safety and pavement rehabilitation needs (attachment 1).

The 2000 Plan identified 4 categories for improvement: safety; roadway rehabilitation; roadside rehabilitation; and, operational improvements. Total funding, recommended in the 2000 Plan, was $11.084 billion over the 10-year period from fiscal year 2000/01 to 2009/10 (attachment 2). Goals, actions, expected out comes and estimated costs were identified for each category.

- **Safety Category:** The goal is to reduce the number and severity of accidents. The Plan identified activities and expected outcomes, with an approved estimated cost of $1.2 billion over the 10-year period. The 2000 Plan proposed improvements to be implemented at all known accident sites with a Safety Index greater than 200. It also proposed an aggressive program to install new median barriers were warranted, and to upgrade non-standard barriers where needed. About $240 million has been allocated for safety improvements during fiscal years 2000/01 and 2001/02. Major accomplishments include:

  - Awarded 24 safety improvement projects (*The planned action was to implement all Safety Index Improvement projects at accident locations which have a Safety Index greater than 200, as soon as they are ready for advertisement – this has been accomplished*).
  - Awarded 33 projects totaling 176 miles of new median barrier (*The planned action was to install 75 miles of new barrier each year – this has been exceeded*).
  - Awarded 2 projects to upgrade 14 miles of barrier (*The planned action was to improve 20 miles of non-standard barrier each year until all non-standard barriers are upgraded – this was not accomplished, but projects are being processed and should exceed the expectation during the next 2-year period).*

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. Historically, these projects have resulted in a 45% reduction in fatalities and a 15% reduction in injuries at the project locations. 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.

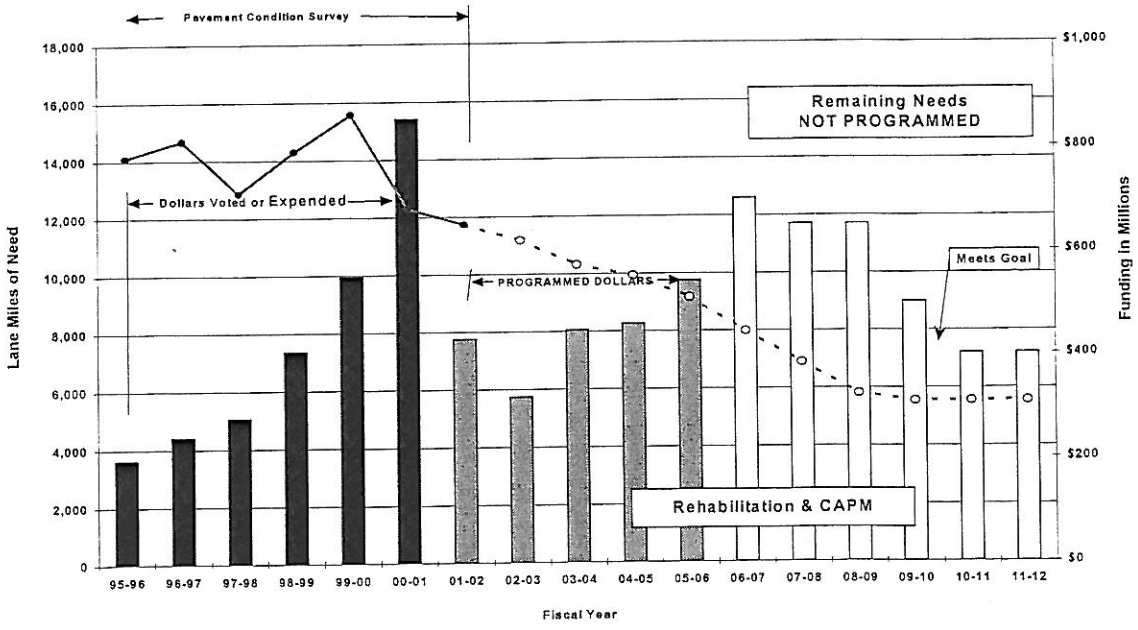
- **Roadway Category:** The primary goals of the roadway category is to reduce the level of deteriorated pavement to 5,500 lane-miles by fiscal year 2007/08; to complete 1,800 lane-miles of longer life pavement; to prevent bridge failure; and to implement preventative treatment strategies. For the roadway category, the Plan identified activities and expected

outcomes, with an approved estimated cost of $7.8 billion over the 10-year period. Since completion of the 2000 Plan, $1.2 billion has been allocated for roadway rehabilitation improvements. Major accomplishments include:

- Voted 169 roadway rehabilitation projects totaling 5543 lane-miles. (*The planned action was to reduce the deteriorated pavement to about 8,800 lane-miles by FY 2002/03. The recent state of the pavement survey indicates that accelerated deterioration since the 1998 survey has resulted in a projected level of deterioration of about 11,000 lane-miles at the beginning of FY 2002/03. This will be addressed in the 2002 Plan*).
- Voted 23 miles of Long Life pavement including asphalt pavement demonstration project. (*The planned action was to resolve issues on constructability, material mix designs, and use of asphalt concrete before implementing projects to confirm the results. This expectation has been met with projects in Los Angeles on Routes 14, 10 and 710*).
- Rehabilitated 126 bridges, upgraded 40,544 linear feet of non-standard bridge rail, and completed 22 bridge scour mitigation projects. (*The planned action was to rehabilitate 100 bridges annually, including bridge rail replacement and upgrade, bridge scour mitigation, and widening – this expectation has been exceeded*).

During the CTC review of the 2000 Plan, support for reducing the level of deteriorated pavement was reinforced. The 2000 Plan included a projection of expected reduction in the number of lane-miles of deteriorated pavement. While the Department has made progress in reducing the level of deterioration, much of the remaining improvements are within urban boundaries. Work within the urban areas costs more. This issue will be addressed in the 'Roadway Preservation' section of the 2002 Plan needs assessment. In the 2000 Plan, the Roadway Rehabilitation category contained the majority of the funding needs. For the 2002 Plan, this category has been split into separate categories for Roadway Rehabilitation and for Bridge Rehabilitation to allow for a better definition of these needs.

Pavement Rehabilitation 2002 Ten Year SHOPP
Fiscal Year 2002/03 through 2011/12



- **Roadside Rehabilitation Category:** The primary goals of the roadside rehabilitation category was to keep mitigation promises, and reduce erosion and water pollution by replacing dead or dying vegetation, reduce water use by replacing and modernizing irrigation systems, and provide safe worker access to these areas. This category also included the expectation that actions would be taken to provide aesthetic improvements to community gateways and other sensitive locations; and the rehabilitation of existing safety roadside rests and the construction of new rest areas where needed and approved. Expected activities and outcomes were identified for the goals in the category, and the 2000 Plan contained an approved estimated cost of $648 million over the 10-year period. Since completion of the 2000 Plan, $76 million has been allocated for roadside rehabilitation improvements. Major accomplishments include:

  - Restored 1,560 acres of highway landscaping. (*The plan proposed to restore 7,570 acres of highway landscaping over a 10-year period. This expectation should be met*).
  - Installed 56 acres of new landscaping at two locations. (*The plan identified 4 locations that had long-standing commitments for landscaping. Two locations have been done, and the remaining 2 locations (127 acres) are programmed and will be under construction in 2002. This action will be met).*
  - Rehabilitated 13 safety roadside rest areas. (*The plan proposed rehabilitate, upgrade or relocation of 43 safety roadside rest areas over a ten-year period. This action should be met*).
  - Improved access for maintenance workers at 300 locations in urbanized areas. (*The plan proposed to complete worker access improvements at 1,500 locations within ten years. This action should be met*).

- **Operations Category:** In the 2000 Plan, the operations category contained remaining SHS needs with a great variety of different project types and scope. It included projects for improved use of existing facilities, improvements to traffic operations facilities, truck weigh and inspection stations, maintenance station rehabilitation, and support facilities. The 2000 Plan for FY 2000/01 through FY 2009/10 provided $1,456 million in funding for Operations projects. Major accomplishments since the 2000 Plan include:

  - Funded 11 auxiliary lanes; 3 passing lane, 2 truck climbing lanes, 5 intersection and freeway interchange improvements; 4 freeway ramp improvements, 4 curve realignments and 1 traffic signal and interconnect projects. Also, funded 847 miles of pavement delineation upgrades and 1 snow chain-up area improvement. (*The plan didn't have specific actions. These improvements reduce traffic congestion and improve operations*).
  - Funded 5 transportation management center upgrades, 13 changeable message signs, 5 highway advisory radio systems, 26 miles of fiber optic line, 24 ramp meters, 28 detector stations, and 77 closed circuit television cameras. *(This is consistent with the Plan for better utilization of existing facilities*).
  - Awarded 7 projects to upgrade existing maintenance facilities. (*The proposed action is to upgrade about 6 maintenance stations annually*).

For the 2002 Plan, this category is split into a 'mobility' and a 'transportation facilities' category to improve the focus of the goals, needs and future accomplishments.

The assessment also includes follow-up on several areas of need that were identified in the 2000 Plan, but deferred until later when additional analysis could be completed. Preliminary analysis has been completed on four of these areas and the goals and estimated costs are included for the following:

- Storm Water runoff – preliminary compliance
- New or rehabilitated office buildings
- New Safety Roadside Rest Areas
- Traffic Operations Strategies

The analysis and findings for the following three areas will be incorporated into the 2004 Plan:

- Recurring storm damage locations and repair
- Corridor rehabilitation development strategy.
- Hazardous waste removal

The assessment has also identified that a number of very critical and high cost project needs with a total cost of over $2.5 billion. These projects can't be easily segmented or constructed in stages without significant impact on traffic. Each has a capital cost over $50 million with several exceeding $200 million. These projects include major reconstruction or replacements of facilities built when the current system was first being developed. Each of these projects will be required within the life of this Plan, which could impact timely attainment of other program goals. One option under consideration for funding these projects is the use of federal GARVEE bonds to spread the payment over time to reduce the impact on the SHOPP.

OVERVIEW

The Goals contained in the 2002 Plan are summarized in the following table. Additional details are described in each of the 6 SHOPP and 3 SHOPP Managed Program sections.

SHOPP	Planned Activities
Safety: improve motorist safety by reducing fatal and injury collisions by 12.5% during the 10 year life of this Plan	1. Reduce fatalities and injuries by 210 and 11,000 respectively over the life of the Plan. 2. New median barrier where warranted and upgrade all non-standard barriers.
Bridge Preservation: prevent structure failure by preserving the structural and functional integrity of all state owned bridges.	1. Reduce the number of distressed and functionally deficient bridges from 1000 to 400. 2. Upgrade 400,000 lineal feet of deficient bridge railings. 3. Rehabilitate all bridges vulnerable to scour.

Roadway Preservation: preserve the existing roadway facilities to their constructed standards and to replace or repair those roadway facilities that have experienced damage or have outlived their useful life	1. Reduce the current inventory of distress lane miles from about 11,000 to 5,500. 2. Open all storm damage closures within 180 days. 3. Replace 3500 deficient signs and lighting structures.
Roadside Preservation: preserve the character of the original roadside features recognizing changing use demands, worker safety and updated statute and regulatory conditions.	1. Rehabilitate or replace 12,000 acres of planting and irrigation system deficiencies. 2. Provide new safe access to minimize worker exposure to traffic. 3. Improve appearance of rural and urban highway corridors and safety roadside rest areas. 4. Rehabilitate existing Safety Roadside Rests to meet existing laws and regulations, expand parking and provide security.
Mobility: reduce the yearly delay on State Highways by 120 million vehicle hours by 2011/12, and to increase the safety and mobility of goods movement.	1. Implement Mobility improvements to better use existing capacity to reduce yearly delay by 120 million vehicle hours annually by 2011/12. 2. Increase truck safety inspections and reduce pavement damage created by overweight trucks.
Transportation Facilities: upgrade and improve the Department's operational facilities to meet standards required by current laws, regulations and agreements	1. Provide maintenance and shop facilities that are ADA compliant, energy efficient, and secure. Implement land and building facilities consolidation studies. 2. Bring facilities up to functional operating standards.

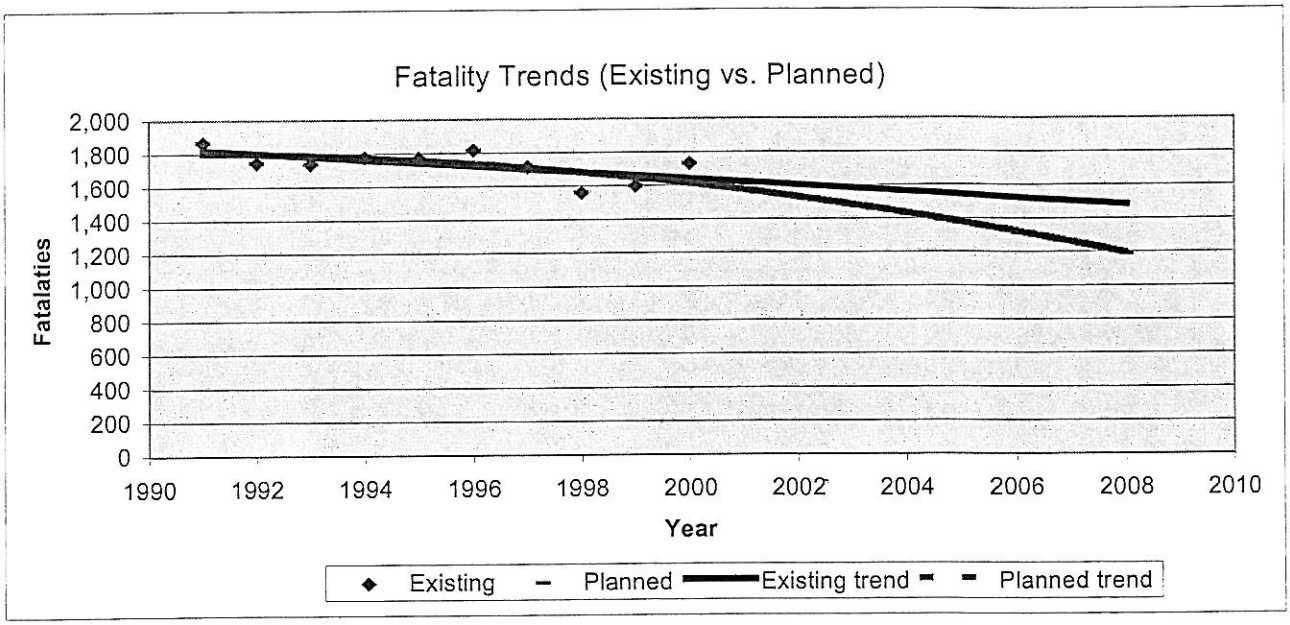
SHOPP Managed Programs:	
Storm Water: implement and maintain an effective statewide Storm Water Management Plan (SWMP) consistent with the Clean Water Act and as mandated by the NPDES Storm Water Permit issued by the State Water Resources Control Board.	1. Improve erosion control and drainage system to minimize non-point pollution runoff. 2. Minimize storm water impacts on Lake Tahoe, and install 'best management practice' facilities to comply with storm water regulations and permits.
Office Buildings: provide facilities that are seismically safe, ADA and Cal-OSHA compliant, energy efficient, and secure.	1. Provide facilities that are ADA compliant, energy efficient, and secure. 2. Bring facilities up to functional operating standards.
TEA	

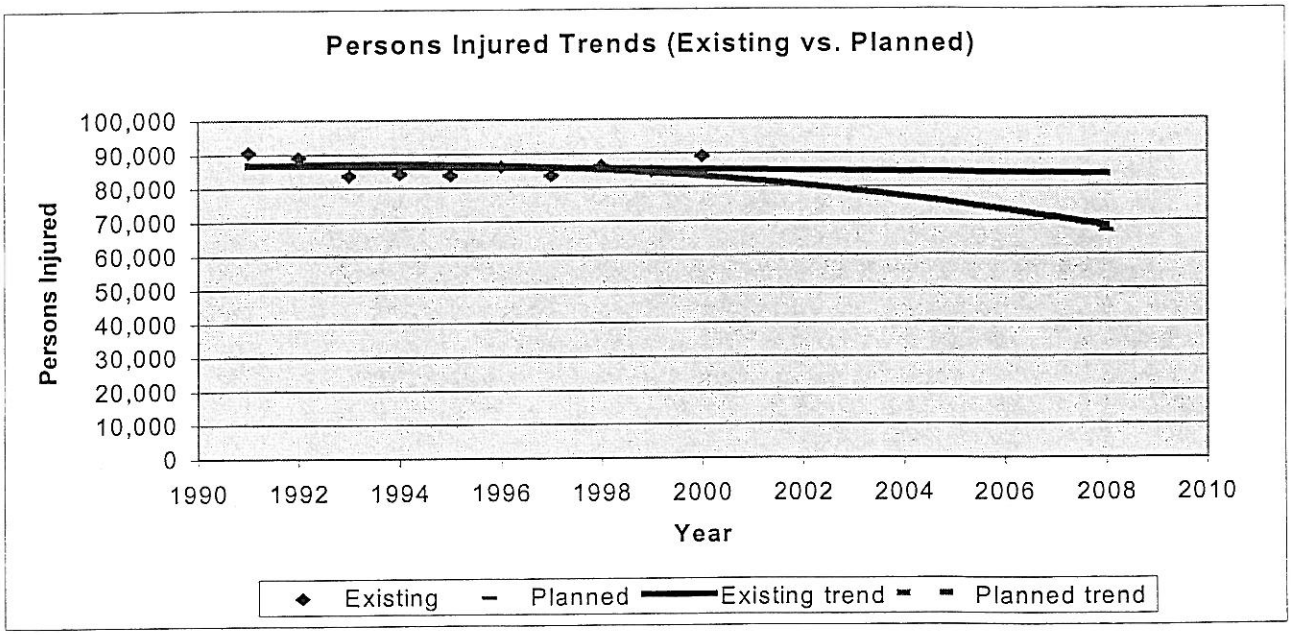
SHOPP Programs

SAFETY:

Program goal: Improve motorist safety by reducing fatal and injury collisions by 12.5% during the 10-year life of this Plan. This goal will reduce the number and severity of accidents on the SHS. Achieving this goal will result in about 210 less fatalities and 11,0000 less injuries per year when compared to the number in 2000 (see the following charts). The estimated cost of activities identified in this category is $1.925 billion.

The Department is committed to reducing the number and severity of accidents.





Actions to reduce the number of accidents, fatalities and injuries include:

- **Safety Improvements:** The Department will investigate all safety locations as they are identified, and those with a Safety Index (SI) greater than 200 will be programmed. These projects are the Department's highest priority. Historically, over 20 locations per year have been improved. Estimated cost for this activity is $1 billion.
- **Safety Enhancements:** Implement improvements based on recommendations of the "Run Off the Road" task force to widen shoulders, install guardrail and rumble strips at key locations statewide. Run Off the Road accidents result in 34% of the fatal accidents on the SHS. Estimated cost for this activity is $750 million.
- **Upgrade Median Barriers:** The Department will continue to program the remaining 175 miles of median barriers that do not meet current Federal safety standards. Estimated cost for this activity is $175 million.

BRIDGE PRESERVATION:

Program Goal: Prevent structure failure by preserving the structural and functional integrity of all bridges owned by the State.

Over half of the existing state highway bridges are over 30 years old. The priority for rehabilitation and replacement of some of these bridges is real and growing. While bridge rehabilitation was combined in the 'roadway rehabilitation' category in the 2000 Plan, it is now felt that addressing these needs as a separate category allows better evaluation of the priority of the proposed activities. The estimated cost of activities in this category is $2.89 billion.

Actions to meet the goal include:

- **Bridge Rehabilitation:** Aggressively program projects to reduce the nearly 1,000 distressed and functionally deficient bridges to 400 by 2012. This activity provides replacement or rehabilitation of bridges, which if untreated, could result in failure of the structure. Estimated cost for this activity is about $2.08 billion.
- **Bridge Scour Mitigation:** Mitigate all scour critical bridges within 5 years of a scour determination. Currently there are 165 scour bridges that require work. The estimated cost for this activity is $490 million.
- **Bridge Rail Replacement:** Reduce the non-crash worthy bridge rails from 715,000 lineal feet to 315,000 LF by 2012. The new standards rails provide enhanced ability to prevent a vehicle from leaving the structure. Estimated cost for this activity is $250 million.
- **Bridge Widening:** Fulfill past commitments to the Federal Highway Administration to widen the shoulders on 11 bridges. No future commitments are anticipated. Estimated cost for this activity is $70 million.

Funding these needs will correct deficiencies and all scour critical bridges that are subject to failure. It will also make a substantial reduction in the number of bridges or bridge components that are currently classified as deficient.

ROADWAY PRESERVATION:

Program Goal: Preserve the existing roadway facilities to their constructed standards and to replace or repair those roadway facilities that have experienced damage or have outlived their useful life.

Achieving this goal will result in smoother pavements, reduced operating costs for motorists and timely re-opening of damaged facilities. Projections of future deterioration are complicated because of the effects of changing weather patterns and the impact of rain, snow and chain wear. The Department has established a innovative pavement steering committee to work with federal research teams, industry and academia to investigate changes to improve pavement mixes and extend pavement life. Much has been accomplished to improve the conditions of the pavement since the 2000 Plan. But, much remains to be done. A survey is done annually on the condition of the pavement on the State Highway System. While it was anticipated that the level of deteriorated pavement would be about 8,800 lane-miles by FY 2002/03, the latest survey has shown a projected deterioration of about 11,000 lane-miles. Much of the remaining work is in urban areas and the cost for pavement rehabilitation and reconstruction is higher due to additional efforts to minimize impacts to traffic, reduced or constrained construction staging areas, and often required night work. Various strategies are being analyzed to still achieve the original goal. The increase in the remaining inventory of needs may cause as much as a 2 year delay in achieving the goal. The strategies are all being reevaluated as to when and where each strategy is most applicable. These will be presented to the CTC in the workshop on this topic. The activities for roadway preservation have been re-assessed for the 2002 Plan. The estimated cost for this category is $8.95 billion.

Activities to accomplish the roadway preservation goal include:

- **Roadway Rehabilitation, Pavement Preservation (CAPM) and Long Life Pavement** are used in the most cost effective combination to reduce the existing 11,000 lane-miles of distressed (rough riding and structurally failing) pavement to 5500 lane miles. Estimated cost for rehabilitation and preservation work is $5 billion. The longer life pavement portions are estimated at $2 billion
- **Major Damage Restoration** reopens damaged roadways within 180 days of a catastrophic event and provides a permanent restoration within 3 years of the event. While these events cannot be predicted, historically this activity has required $15 million of work annually. Estimated cost for this activity is $200 million.
- **Roadway Protective Betterments** annually will provide permanent solutions to 5 locations that are prone to repeated catastrophic damage closures. This will result in longer range reduction in Major Damage and less severe interruptions to motorists. Estimated cost for this activity is $1.5 billion.
- **Signs and Lighting Rehabilitation** will bring all signs and lights to current standards by 2012 at the rate of 20,000 signs and 7000 light fixtures annually. This activity has been highlighted nationally due to the aging population and their enhanced system requirements. Estimated cost for this activity is $250 million.

Funding these activities will reduce the number of miles of distressed pavement to 5500 lane miles, eliminate deficiencies cause by storms or other major events, and reinforces a proactive practice for preventative treatment as a cost-effective approach to maintaining the roadway.

ROADSIDE PRESERVATION:

Program Goal: Preserve the character of the original roadside features recognizing changing use demands, worker safety and updated statute and regulatory conditions.

Achieving this goal will result in keeping environmental mitigation promises, compliance with statutory requirements, improved coordination with community character, and will enhance the livability of the neighborhoods through which our facilities pass. Additionally, this category supports both motorist and worker safety goals. The estimated cost of the activities in this category is $1.592 billion.

The following activities have been identified to meet the goal:

- **Highway Planting Restoration** will reduce the current 12,000 acres of deficient (or dying) landscaping to 500 acres by 2012. Estimated cost for this activity is $1.012 billion.
- **Freeway Maintenance Access** will allow safe maintenance worker conditions at all 1500 identified remaining locations by 2009. Estimated cost for this activity is $40 million.
- **Roadside Enhancements** will provide needed roadside enhancements and mitigation at all mandated locations. These future mandates cannot be fully defined ahead of time, but historical funding levels are being projected into the future. Estimated cost for this activity is $10 million.
- **Beautification and Modernization** (B&M) will implement the 79 miles of demonstration projects and 144 miles of additional projects defined in the 2000 B&M report to the Legislature. This is a major portion of "Context Sensitive Solutions" and is to improve the compatibility of the facility to its surrounding community. Estimated cost for this activity is $140 million.
- **Safety Roadside Rest Area (SRRA) Restoration** will correct all code and statute deficiencies at the 88 SRRAs by 2008. Estimated cost for this activity is $140 million.
- **New Safety Roadside Rest Areas** (SRRA) will add 2000 new parking spaces at 24 new SRRAs by 2010. This program will increase highway safety and reduce driver fatigue by providing sufficient stopping or resting locations for both personal and commercial vehicles. Estimated cost for this activity is $250 million.

Funding these activities will result in completion of all past commitments for landscaping, will reduce the acres of deficient landscaping to 500 acres and improve the compatibility of the highway facility. It will further result in more efficient and safer management of these areas. It will also begin a significant effort to upgrade existing and develop new Roadside Rests to improve highway safety.

MOBILITY:

Program Goal: Reduce the yearly delay on State Highways by 120 million vehicle hours by 2011/12, and to increase the safety and mobility of goods movement.

The proposed activities to attain this goal are based on making modifications and adjustments to maximize capacity of the existing highway facility. CTC STIP Guideline #13 indicates that non-capacity increasing highway operational improvements which do not expand the design capacity of the system, and which are intended to address spot congestion are eligible for SHOPP funding. Regions may nominate projects in the STIP through the RTIP process if timely implementation through the SHOPP is not possible. The funding levels approved in the 2000 Plan did not include a recommended funding for these non-capacity

increasing improvements to significantly reduce congestion. Because of this, the Plan has been expanded to include 'mobility' as a separate category in the Plan. Timely implementation of key improvements can significantly reduce congestion. The Department will schedule a workshop with the CTC to discuss the benefits of these investments and to determine a recommended level of funding. At this time, the total estimated cost of the activities identified is $5.018 billion.

Four activities have been identified to meet the mobility goal. They are:

- **Operational Improvements** will reduce recurring delays to motorists by 60 million vehicle-hours of yearly delay by 2011/12 by eliminating traffic bottlenecks on congested and priority goods movement corridors. Estimated cost for this activity is $3.1 billion.
- **Transportation Management Systems** will reduce non-recurring delays to motorists by 60 million vehicle-hours of yearly delay by 2011/12 through improved detection, verification and removal of traffic incidents and through improved real-time traveler information on congested and priority goods movement corridors. Estimated cost for this activity is $1.7 billion.
- **Weigh Stations** will improve commercial vehicle safety, operation and compliance by maintaining existing commercial vehicle inspection facilities and building 2 new facilities every 3 years. These new facilities are consistent with the approved development plan prepared by the Department and the California Highway Patrol. Estimated cost for this activity is $179 million.
- **Transportation Permit Requirements for Bridges** will by 2012 upgrade 95 bridges that cause extensive out of direction travel (and cost) by extra-legal transportation permit loads. This activity should also reduce bridge hits on these structures. Estimated cost for this activity is $39 million.

Funding these activities will result in an estimated yearly reduction of 120 million vehicle hours of delay caused by congestion, and will improve safety and routing for legal and extra-legal commercial vehicles.

TRANSPORTATION FACILITIES:

Program Goal: Maintain Caltrans support facilities to standards required by various laws, regulations, efficiency requirements and agreements.

This category has been restructured to cover the Department's operational facility improvements, and to provide more emphasis on relinquishments and statutory mandates for school noise attenuation and hazardous material clean up. Five activities have been identified which when implemented will result in facilities that are safe and efficient for both our staff and our customers.

The following activities have been identified to meet the goal:

- **Maintenance Facilities** are updated at the rate of 7 facilities per year to insure they meet health and safety standards and are adequate for maintenance crews to perform their functions. Estimated cost for this activity is $560 million.
- **Equipment Facilities** are updated at the rate of 1 facility per year to meet health and safety standards and to insure facilities are adequate to accommodate today's equipment. Estimated cost for this activity is $201 million.

- **Relinquishments** brings conventional roadways to a "state of good repair" per individual agreements with local agencies, allowing the local agencies to accept responsibility for those routes. These routes function as local streets and roads and decisions regarding their operation are most appropriately made at the local level. This program is based on historical levels of requests for such responsibility transfers. Estimated cost for this activity is $50 million.
- **Noise Attenuation for Schools**, as mandated by Section 216 of the Streets and Highways Code, will as needed reduce the roadway noise impacting school classrooms. This program is based on historical levels of requests. Estimated cost for this activity is $10 million.
- **Hazardous Waste Mitigation** cleans up on an as needed basis locations where the hazardous waste will not naturally dissipate and where no other capital project is planned. The cost of this program is based on historical needs and is $62 million.

Funding these activities provide safe and efficient facilities needed for the Department's field employees and equipment allowing them to provide expeditious and complete service to the public. The activities also include funds necessary to comply with statute and to be a "good neighbor" to those areas adjacent to our facilities.

SHOPP MANAGED PROGRAMS:

STORM WATER:

Program Goal: Implement and maintain an effective statewide Storm Water Management Plan (SWMP) as mandated by the NPDES Storm Water Permit that was issued to Caltrans in 1999 by the State Water Resources Control Board.

The Storm Water Mitigation item for compliance with federal environmental regulations mandated in the Clean Water Act (CWA), was discussed as part of the 2002 Fund Estimate. It requires the control of pollutants washed from state highways and property by rainfall or other surface runoff. Specific projects are currently being programmed into the SHOPP and their accomplishments will be available for the next update of this Plan. The funding included in the 2002 Fund Estimate was identified as needed to comply with current requirements. Long term funding for this category has not yet been projected.

The activities that have been identified include:

- Construct several types of experimental and/or untested structural Best Management Practices (BMP) pilots to treat storm water runoff from portions of Caltrans right-of-way. Construct 89 BMPs at 70 locations statewide over the three year period, FY 01/02 through FY 03/04.
- Establish permanent vegetation on disturbed slopes to decrease erosion and enhance infiltration and trap sediment and other particulates. Restore approximately 2,800 acres of roadside vegetated areas by FY 2020/21.
- Improve drainage system to minimize non-point pollution runoff into the Tahoe Basin. Improve safety conditions, erosion control and water quality of storm water runoff and replace guard rail system to improve public safety.

Estimated cost for these activities is $710 million. The 2002 Fund Estimate defined separate funding for this Program leading to its separate treatment in this Plan The activities address only those actions that have been defined or mandated to date. This Program is still undergoing development and the impacts of existing Statutes are still being developed and litigated.

OFFICE BUILDINGS:

Program Goal: Provide office facilities that are safe, compliant with statutes and regulations, energy and operationally efficient, and secure.

Achieving this goal will result in existing facilities meeting statute and regulatory requirements, and meeting functional operating requirements in the most cost-effective manner.

Activities to attain the goal include:

- By 2012, construct new office facilities in Districts 7 and 11
- Pursue legislation to construct new office facilities in Districts 2, 3, 5, 12 and Headquarters
- Complete seismic retrofit of 3 District offices.
- Complete office facility upgrades in Districts 1, 9 and 10.

This Program was previously defined in the base SHOPP. The 2002 Fund Estimate defined separate funding for this Program leading to its separate treatment in this Plan. Current estimated cost for this activity is $289 million and will be adjusted consistent with the approved Annual State Budget.

TRANSPORTATION ENHANCEMENT ACTIVITIES (TEA)

Program Goal: Enhance the quality of life in or around transportation facilities. These projects must be over and above required mitigation and normal transportation projects.

Activities for this program include:

- Program the remaining SHOPP TEA funds no later than Sept 2002.
- Obligate all SHOPP TEA funds available from TEA-21 by Sept 2003.
- Have all SHOPP TEA projects under construction by Sept 2004.

Completion of these activities will fully implement Federal laws and regulations requiring California development of TEA projects. It is expected that reauthorization of the Federal Transportation Act will also contain funds for TEA purposes. The activities will be updated when the new Federal Act funding is known.

PROCESS IMPROVEMENTS:

Since the 2000 Plan was adopted, the Department has identified a number of process improvements to expedite delivery and management of projects. Some of these improvements have already been implemented and have yielded positive results. The remaining improvements should be fully implemented over the next two-year period.

- **Program Goals and Objectives.** Developing measurable objectives for each element of the SHOPP Plan has been challenging. The Department will continue to refine the applicable goals and objectives for each of the SHOPP program elements and link them to customer (or outcome) oriented perspectives. This will serve as a management tool and yardstick for setting priorities, distributing resources, and monitoring effective and high priority accomplishments.

- **10-Year Plan Updates.** The timing and reporting requirements for this Plan are contained in statute. Statutes require the Plan to be submitted to the CTC for review and comment prior to submittal to the Governor and legislature in May of each even-numbered years. A shortcoming of this timeline is that the Plan is developed out of sequence with the Fund Estimate. To allow approved recommendations from the Plan to be better addressed in the Fund Estimate, the Plan will be updated on an annual basis.

- **District 10-Year Implementation Plans.** Each Caltrans District is developing a proposed 10-Year Implementation Plan to identify project needs and priorities. These Plans 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.

- **Pavement Research:** The Department continues to work with U. C. Berkeley, industry and other research programs to improve the rideability and life of pavement mixes. A Steering Committee has been established to focus on opportunities to test and implement recommended changes.

- **Reinvestment Opportunities.** During recent years, Caltrans directed available program resources to additional SHOPP projects whenever possible. These resources were derived from two primary sources: deleted projects and "savings." As the annual programs are implemented, 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. Since the approval of the *2000 Plan* in May 2000, a total of $62 million have been reprogrammed as a result of these "reinvestment opportunities."

- **Pavement and Safety Rehabilitation Delegation.** In 1999 and 2000 the California Transportation Commission delegated to Caltrans the authority to approve construction funding of pavement rehabilitation and safety projects, respectively. These are projects that are programmed in the SHOPP. This delegation expedited advertising and award of construction for rehabilitation and safety projects by about 30 days per project. To this date, Caltrans has approved 187 rehabilitation projects worth $860 million and 48 safety projects worth $125 million. It is strongly recommended that this delegation be expanded to include all programmed projects which have been formally adopted by the CTC.

- **California Transportation Improvement Program System (CTIPS).** In 1999, the Department 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 have access and user abilities. CTIPS could replace data systems used by several regional agencies.

SECTION 4. WHAT'S NEXT:

The Department will continue to make improvements on the SHS. During the next year, the Department will work to refine needs, reassess goals and objectives, and work with the CTC, industry and other experts to establish recommendations for future SHOPP funding. The Department will schedule a series of workshops with the CTC to discuss each SHOPP category, proposed activities and statewide needs. The Department will issue an updated 10-Year Plan in 2003.

Attachment #1:

CTC Comments to 2000 Plan

JAMES W. KELLOGG, Chairman
JEREMIAH F. HALLISEY, Vice Chairman
ROBERT ABERNETHY
ROGER A. KOZBERG
ALLEN M. LAWRENCE
ESTEBAN E. TORRES
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SENATOR BETTY KARNETTE, Ex Officio
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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 transmition 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,

James W. Kellogg

JAMES W. KELLOGG
Chairman

cc: Jim Nicholas

carolp/win6/stephen/kellogshopp

Attachment #2:

2000 PLAN Funding Recommendation Details

2000 TEN-YEAR SHOPP RECOMMENDATIONS (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
Traffic Safety												
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
Subtotal	*$106*	*$134*	*$116*	*$116*	*$140*	*$125*	*$120*	*$116*	*$120*	*$119*	*$472*	*$1,212*
Roadway Rehabilitation												
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
Subtotal	*$636*	*$641*	*$699*	*$697*	*$865*	*$895*	*$840*	*$840*	*$830*	*$825*	*$2,673*	*$7,768*
Roadside Rehabilitation												
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
Subtotal	*$35*	*$54*	*$53*	*$61*	*$75*	*$80*	*$70*	*$70*	*$75*	*$75*	*$203*	*$648*
Operations												
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
Subtotal	*$100*	*$104*	*$108*	*$145*	*$160*	*$170*	*$170*	*$155*	*$170*	*$174*	*$457*	*$1,456*
1998 PLAN	$850	$860	$924	$924	$991	$994	$1,018	$1,054	$1,085	$1,105	$3,558	$9,805
2000 PLAN TOTAL	$877	$933	$976	$1,019	$1,240	$1,270	$1,200	$1,181	$1,195	$1,193	$3,805	$11,084
CHANGE FROM 98 PLAN	+$27	+$73	+$52	+$95	+$249	+$276	+$182	+$127	+$110	+$88	+$247	+$1,279

Rev. 5/1/00

Attachment #3:

2002 Program Needs Details

	($ Million)	SUBTOTAL
SHOPP		
SAFETY		$1,925
Safety Improvements	$1,000	
Safety Enhancements	$750	
Upgrade Median Barriers	$175	
BRIDGE PRESERVATION		$2,890
Bridge Rehabilitation/Replacement	$1,910	
Bridge Scour Mitigation	$490	
Bridge Rail Replacement/Upgrade	$250	
Bridge Widening	$70	
Phase II Seismic	$170	
ROADWAY PRESERVATION		$8,950
Roadway Rehabilitation	$5,000	
Pavement Preservation	$0	
Long Life Pavement	$2,000	
Major Damage Restoration	$200	
Roadway Protective Betterments	$1,500	
Signs & Lighting Rehabilitation	$250	
ROADSIDE PRESERVATION		$1,592
Highway Planting Restoration	$1,012	
New Highway Planting	$0	
Freeway Maintenance Access	$40	
Roadside Enhancements	$10	
Beautification & Modernization	$140	
Safety Roadside Rest Area Restoration	$140	
New Safety Roadside Rest Areas	$250	
MOBILITY		$5,018
Operational Improvements	$3,100	
Transportation Management Systems	$1,700	
Weigh Stations & Weigh-in-Motion	$179	
Trans Permit Requirements for Bridges	$39	
FACILITIES		$883
Equipment Facilities	$201	
Maintenance facilities	$560	
School Noise Attenuation	$10	
Hazardous Waste Mitigation	$62	
Relinquishments	$50	
SHOPP Total		**$21,258**
SHOPP Managed		
STORM WATER	$710	
OFFICE BUILDINGS	$289	
TRANSPORTATION ENHANCEMENT	$22	
SHOPP Managed Total		**$1,021**
TOTAL 2002 SHOPP Needs		**$22,279**