DEPARTMENT OF TRANSPORTATION
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Flex your power!
Be energy efficient!

March 28, 2013

The Honorable Edmund G. Brown Jr.
Governor of California
State Capitol , Suite 1173
Sacramento, CA 95814

Dear Governor Brown:

I am pleased to submit the California Department of Transportation's "2013 Five-Year Maintenance Plan," prepared in accordance with Streets and Highway Code section 164.6.

Distribution to the California State Legislature has been made pursuant to Government Code section 9795. This report can be found at <www.dot.ca.gov/reports-legislature.htm>.

Sincerely,

MALCOLM DOUGHERTY
Director

Enclosures
(1) Form LA–0025, Summary of a Report to the Legislature
(2) "2013 Five-Year Maintenance Report"

Distribution:
The Honorable Edmund G. Brown Jr., Governor of California
Andre Boutros, Executive Director, California Transportation Commission
Diane Boyer-Vine, Legislative Counsel, California State Legislature
Gregory Schmidt, Secretary of the Senate, California State Senate
E. Dotson Wilson, Chief Clerk of the Assembly, California State Assembly

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March 28, 2013

Mr. Andre Boutros
Executive Director
California Transportation Commission
1120 "N" Street , Room 2233 (MS 52)
Sacramento, CA 95814

Dear Mr. Boutros:

I am pleased to submit the California Department of Transportation's "2013 Five-Year Maintenance Plan," prepared in accordance with Streets and Highway Code section 164.6.

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March 28, 2013

Ms. Diane Boyer-Vine
Legislative Counsel
State Capitol , Room 3021
Sacramento, CA 95814

Dear Ms. Boyer-Vine:

I am pleased to submit the California Department of Transportation's "2013 Five-Year Maintenance Plan," prepared in accordance with Streets and Highway Code section 164.6.

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March 28, 2013

Mr. Gregory Schmidt
Secretary of the Senate
State Capitol , Room 3044
Sacramento, CA 95814

Dear Mr. Schmidt:

I am pleased to submit the California Department of Transportation's "2013 Five-Year Maintenance Plan," prepared in accordance with Streets and Highway Code section 164.6.

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March 28, 2013

Mr. E. Dotson Wilson
Chief Clerk of the Assembly
State Capitol , Room 3196
Sacramento, CA 95814

Dear Mr. Wilson:

I am pleased to submit the California Department of Transportation's "2013 Five-Year Maintenance Plan," prepared in accordance with Streets and Highway Code section 164.6.

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CALIFORNIA DEPARTMENT OF TRANSPORTATION

2013 FIVE-YEAR MAINTENANCE PLAN

March 2013

CONTENTS

REQUIREMENTS OF STREETS AND HIGHWAYS CODE SECTION 164.6

Streets and Highways Code section 164.6, amended by Senate Bill 1098 section 6 (Chapter 212, Statutes of 2004), requires the California Department of Transportation (Caltrans) to prepare a five-year maintenance plan that addresses the maintenance needs of the State Highway System. Section 164.6 also requires Caltrans to attempt to balance resources between the ten-year rehabilitation plan and the five-year maintenance plan.

Section 164.6 requires the five-year maintenance plan to include the following:

- Only maintenance activities that, if the activities were not performed, could result in increased State Highway Operation and Protection Program (SHOPP) costs in the future.
- Recommended strategies, specific activities, and funding to reduce or prevent backlog during the five years of the maintenance plan.
- Specific goals and quantifiable accomplishments.
- Cost control and efficiency strategies.
- Cost estimates for the five years of the maintenance plan.
- SHOPP cost avoidance from implementation of the maintenance plan.
- A budget model that allows achieving the requirements of this legislation.

The full text of section 164.6 is appended.

EXECUTIVE SUMMARY

The "2013 Five-Year Maintenance Plan" (2013 Maintenance Plan), as required by statute, addresses the maintenance needs of the State Highway System for maintenance activities that, if not performed, could result in increased SHOPP costs in the future. Caltrans accomplished the pavement and bridge goals specified in the 2011 Maintenance Plan but was unable to meet the drainage assessment goals because of several external factors.

Caltrans recommends the total funding level remain unchanged at $412.1 million a year for pavement, bridge, and drainage maintenance. The 2013 Maintenance Plan incorporates preventive maintenance treatments that will slow increases in the SHOPP by delaying the need for rehabilitation, reconstruction, or replacement. Preventive maintenance services will be provided by a combination of contract services and work done by State maintenance forces.

The 2013 Maintenance Plan is consistent with the provisions of the recently enacted federal transportation bill, "Moving Ahead for Progress in the 21st Century Act" or "MAP–21" (Pub. L. 112–141, July 6, 2012; 126 Stat. 405), which requires Caltrans to implement a comprehensive asset management program.

Pavement Maintenance. The State Highway System includes approximately 49,500 lane-miles of pavement. The pavement maintenance goal established in the 2011 Maintenance Plan was to repair 2,700 lane-miles annually. Caltrans succeeded in meeting that goal as a result of an increased number of bidders for each project, the reinvestment of construction bid savings, and the assistance of additional one-time funding programs, such as the federal American Recovery and Reinvestment Act of 2009 (Pub. L. 111–5, Feb. 17, 2009; 123 Stat. 115) and the state Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 (Gov. Code, § 8879.20 et seq.).

Caltrans recommends the current funding of $234 million a year for pavement maintenance remain unchanged. In the 2013 Maintenance Plan, Caltrans establishes two pavement maintenance goals to be accomplished during a ten-year period at this funding level: (1) reduce the backlog of pavement needing preventive/corrective maintenance to 5,000 lane-miles, or 10 percent of the inventory, and (2) reduce the deterioration rate of pavement becoming distressed to 500 lane-miles, or 1 percent of the inventory.

Bridge Maintenance. The State bridge inventory includes approximately 12,900 bridges. The bridge maintenance annual goal established in the 2011 Maintenance Plan was to reduce the bridge backlog to 10 percent of the total inventory, or approximately 1,290 bridges. Caltrans exceeded that goal by an additional 10 percent. Through a combination of strategic planning, maintenance field activities, and delivery of bridge preservation contracts, Caltrans has slowed the growth of the backlog of bridge maintenance needs. The bridge program recorded a 40 percent reduction in new SHOPP recommendations from historic levels.

Caltrans' bridge maintenance annual goal remains unchanged, and Caltrans recommends the current funding of $155.1 million a year for bridge maintenance also remain unchanged.

Drainage Maintenance. The State Highway System includes an estimated 205,000 culverts. The drainage maintenance annual goal established in the 2011 Maintenance Plan was to repair 174 culverts and assess another 14,000 culverts. Based on a two-year average, Caltrans was able to accomplish 150 percent of the annual culvert repairs, repairing 262 culverts. However, because of several external factors, such as right-of-way constraints, environmental issues, and the difficulty of assessing various culvert locations, Caltrans was unable to meet the assessment goal, accomplishing only 64 percent of the annual culvert assessments specified, or about 9,000 assessments.

Approximately 42 percent of the total State drainage system has been inspected to date, or approximately 86,000 culverts, and about 36 percent require some type of maintenance repair. Approximately 23 percent of the culverts inspected annually require corrective maintenance repair work. Until the inventory is complete and a large percentage of required rehabilitation work is identified, no additional funding for drainage maintenance work will be requested. Caltrans recommends the current funding of $23 million a year for drainage maintenance remain unchanged and is reducing the culvert assessment goal to 12,000 a year. At this assessment goal, and with the estimated 23 percent of the culvert inventory assessed annually requiring corrective maintenance, Caltrans estimates an additional 2,760 culverts will need corrective maintenance repair work each year. The current funding level slightly reduces the rate of backlog increase but does not eliminate it.

THE MAINTENANCE PROGRAM

In 2005, the Governor and the Legislature approved the inaugural Maintenance Plan for Caltrans as a means of ensuring the reliability of California's State Highway System by completing critically needed preventive maintenance work. The 2005 Maintenance Plan included baseline funding of $148 million beginning in July 2006 for preventive maintenance work associated with pavement, bridges, and drainage systems on the more than 49,500 lane-miles of the State Highway System. The governing administration and the Legislature subsequently augmented the Maintenance Program by $138 million, of which $128 million was redirected from the SHOPP and $10 million from the approval of a Budget Change Proposal in fiscal year (FY) 2006/07. This additional funding brought the level of investment to a total of $286 million for the 2005 Maintenance Plan.

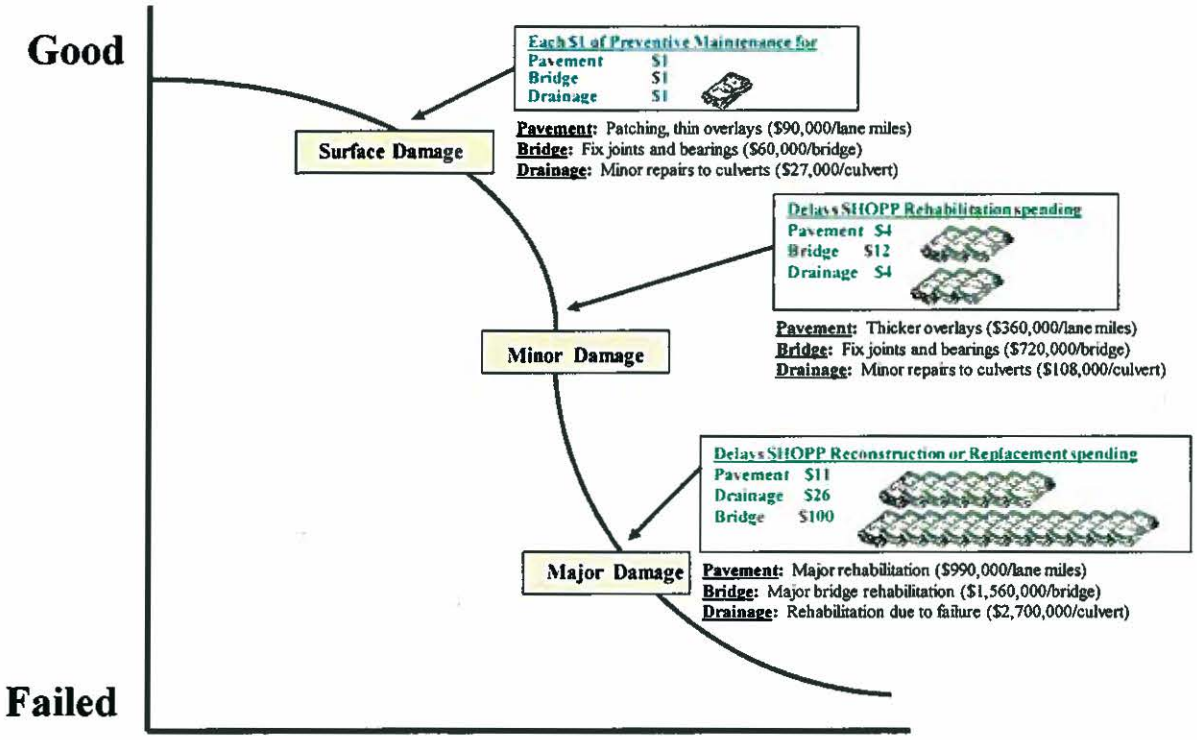
In the 2007 Maintenance Plan, Caltrans recommended an additional increase of $147.1 million. Subsequently, SHOPP funding was redirected in FY2007/08 to augment the Maintenance Program by a total of $126.1 million: $85 million for pavement and $41.1 million for bridges. This funding was directed specifically to preventive maintenance-type work, consistent with Caltrans' recommendation, bringing the total annual investment of the 2007 Maintenance Plan to $412.1 million. In the 2009 Maintenance Plan, Caltrans did not recommend an increase in funding from the 2007 Maintenance Plan. However, a total of $57 million one-time funding resulting from the federal American Recovery and Reinvestment Act of 2009 was authorized from FY2008/09 through FY2009/10. The funding level of the 2011 Maintenance Plan and recommended level of the 2013 Maintenance Plan remain at the total annual investment of $412.1 million.

Currently, the baseline annual funding of $412.1 million includes $234 million for pavement maintenance, $155.1 million for bridge maintenance, and $23 million for drainage maintenance. By sustaining the current funding level for pavement and bridges, the backlog of inventory requiring preventive maintenance will continue to be reduced during the next ten years as planned. Until the drainage system inventory is more complete and a large percentage of the needed rehabilitation work is identified, no additional funding for preventive drainage work will be requested.

Preventive maintenance is the most cost-effective means of protecting the State's infrastructure investment. In the 2013 Maintenance Plan, Caltrans recommends strategies to prevent deterioration and extend the life of the pavement, bridge, and drainage inventory in fair or good condition. As listed in Table 1, the average cost for a SHOPP roadway rehabilitation project to treat one lane-mile of minor pavement damage in FY2010/11 was $360,000, a decrease in the average cost reported in the 2011 Maintenance Plan, and the average cost of pavement maintenance was $90,000 a lane-mile. Pavement maintenance results in a benefit-cost ratio of about 4:1. Similarly, the benefit-cost ratio for bridge maintenance is 12:1 ($720,000 for minor damage rehabilitation versus $60,000 for preventive maintenance) and 4:1 for drainage maintenance ($108,000 for minor damage rehabilitation versus $27,000 for preventive maintenance). Table 1 lists these benefit-cost ratios, and the chart following it displays preventive maintenance cost-effectiveness.

Table 1. COST-BENEFIT OF PREVENTIVE MAINTENANCE				
FY2011/12 Capital Construction Costs Only	**Cost of Rehabilitation ($000)**	**Cost of Preventive Maintenance ($000)**	**Unit of Measure**	**Benefit-Cost Ratio**
Pavement	360	90	Lane-mile	4:1
Bridge	720	60	Bridge	12:1
Drainage	108	27	Culvert	4:1

COST EFFECTIVENESS CHART



PAVEMENT MAINTENANCE

The State Highway System includes approximately 49,500 lane-miles of pavement. Caltrans' "2011 State of the Pavement Report" states that 12,333 lane-miles (25 percent) of the State Highway System are in a distressed condition; 11,053 lane-miles (22 percent) are in fair condition and require pavement maintenance; and 26,132 lane-miles (53 percent) are in excellent condition. The 2013 Maintenance Plan focuses preservation strategies on pavement identified as being in good or fair condition. The 2013 SHOPP focuses on pavement identified as being in a distressed condition.

The pavement maintenance goal established in the 2011 Maintenance Plan was to repair 2,700 lane-miles annually. Caltrans succeeded in meeting that goal as a result of an increased number of bidders for each project, the reinvestment of construction bid savings, and the assistance of additional one-time funding programs, such as the federal American Recovery and Reinvestment Act of 2009 and the state Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006.

Taking into consideration the current construction-bidding environment and the current funding level of $234 million for pavement maintenance, Caltrans is projecting 2,100 lane-miles will need to be treated in FY2012/13 and annually during the next few years. This reduction in lane-miles is due to several factors, such as significantly fewer bid savings being realized, increases in the general cost of materials, products, and energy, and a focus on more sustainable pavement preservation methods such as in-place recycling.

Caltrans recommends the current funding of $234 million a year for pavement maintenance remain unchanged. In the 2013 Maintenance Plan, Caltrans establishes two pavement maintenance goals to be accomplished during a ten-year period at this funding level: (1) reduce the backlog of pavement needing preventive/corrective maintenance to 5,000 lane-miles, or 10 percent of the inventory, and (2) reduce the deterioration rate of pavement becoming distressed to 500 lane-miles, or 1 percent of the inventory.

To trim pavement costs and overcome the challenges of maintaining the State Highway System in the future, Caltrans is turning to advanced technologies. One of the latest data collection technologies Caltrans is incorporating is ground-penetrating radar, which provides a snapshot of the layers underneath a pavement surface and the corresponding pavement structure inventory data, including the thickness of the pavement layers for the entire State Highway System. Another innovation Caltrans is using for data collection is the automated pavement condition survey vehicle, which travels at highway speeds and collects pavement distress data at the pavement surface using lasers.

Caltrans also is implementing the state-of-the-art Pavement Management System, known as PaveM, which is anticipated to improve pavement performance and utilize limited funding efficiently. PaveM will provide the innovative tools and best practices that optimize pavement treatment strategies and improve pavement design, construction, and maintenance. PaveM will target future repairs that do the most good for the least amount of money.

In addition to PaveM, Caltrans is adopting a variety of other investment strategies to maximize limited funds, such as the following:

- Apply life-cycle cost analysis in design. Caltrans has doubled the rehabilitation design life of pavement from twenty to forty years with more effective pavement design and life-cycle cost analysis. This design analysis, applied during the planning and development of pavement capital projects, ensures the most cost-effective project is constructed at the lowest cost.

- Explore and maximize the Pavement Program, and deliver pavement preservation and rehabilitation projects in a scheduled, timely manner.

- Follow an appropriate three- to twenty-year cycle of preventive maintenance treatments on the State Highway System.

- Achieve a State-mandated usage goal of 35 percent rubber hot-mix asphalt versus conventional asphalt by 2013.

- Increase the use of sustainable pavements. Using recycled materials in pavement reduces the impact on virgin materials and the environment while maintaining the same or better pavement performance.

BRIDGE MAINTENANCE

Caltrans's structural assets include more than 12,900 State highway bridges. Caltrans' objective is to manage the bridge inventory safely and economically to limit operational restrictions and prevent sudden closure or collapse. Major structural rehabilitation caused by lack of preventive maintenance is more costly than preventive maintenance and has the potential to cause significant long-term disruptions to mobility.

Bridge maintenance needs are identified during regularly scheduled bridge inspections mandated by federal regulations. Bridge maintenance needs fall into two general categories: State maintenance forces and Major Maintenance contract work. Bridge needs identified for maintenance bridge crews or Major Maintenance contracts are considered backlogged two years after the recommendation is made by the inspector. Maintenance bridge crew needs have increased slightly during the past five years on work for smaller repairs that require immediate attention and other minor maintenance work. Maintenance bridge crew needs are approximately $15 million of the backlog. Bridge maintenance needs that are larger in size or complexity are packaged together into Major Maintenance contracts that are awarded to construction companies to perform.

At the beginning of FY2010/11, Caltrans reported 2,445 bridges with backlogged Major Maintenance contract needs. Caltrans treated 580 bridges during FY2010/11 and 1,121 bridges during FY2011/12. At the beginning of FY2012/13, the number of bridges with backlogged Major Maintenance contract needs was 2,170, approximately 17 percent of the inventory.

Caltrans's goal is to reduce the number of bridges with backlogged Major Maintenance contract needs to approximately 10 percent of the inventory, or 1,290 bridges.

Bridge program accomplishments and expenditures are tracking very closely with previous plan projections. Caltrans was successful in exceeding the 2011 Maintenance Plan goal by an additional 10 percent for bridge maintenance. Through a combination of strategic planning, maintenance field activities, and delivery of bridge preservation contracts, Caltrans has slowed the growth of the backlog of bridge maintenance needs.

The timely preventive maintenance made possible by funding authorized by previous Maintenance and SHOPP Plans has begun to slow the progression of bridges requiring major rehabilitation in the SHOPP. Since the inception of the Maintenance Plan, the bridge program recorded a 40 percent reduction in new SHOPP recommendations from historic levels. This decrease in SHOPP recommendations is a welcome trend and demonstrates that Caltrans is accomplishing the goals of the previous Maintenance Plan. Caltrans recommends the current funding of $155.1 million a year for bridge maintenance remain unchanged.

The 2013 Maintenance Plan identifies more than $448 million in backlogged Major Maintenance contract needs for bridges, which equates to approximately 97 percent of all bridge maintenance needs. The rate of backlog reduction is a function of project delivery on the positive side and the rate of new backlog needs being identified on the negative side. Since the 2005 Maintenance Plan, the average number of new bridges becoming backlogged annually has increased by 20 percent. The increased rate of needs is attributable to the general aging of the entire bridge network in California. The increase in needs identification has been partially offset by decreases in project construction costs and an increased number of bidders for each project. At current construction authorization levels, Caltrans expects it will take approximately ten years to achieve the desired backlog levels. Caltrans is optimistic the projected reductions identified in the 2013 Maintenance Plan will be realized in that time period.

Caltrans is pursuing numerous activities to maximize efficiencies and control bridge maintenance costs. Among these activities is the use of new materials that last longer and are easier to apply, such as epoxy paints, polyester concretes, corrosion-resistant rebar, and design details. In addition, Caltrans is implementing policies to ensure new projects are constructed with cost-effective and easily maintainable elements as well as reviewing the activities of other state Departments of Transportation on an ongoing basis to ensure the best business practices are employed in California.

DRAINAGE MAINTENANCE

The State Highway System includes an estimated 205,000 culverts. These culverts drain the State's highways, serving as conduits for streams, drainage channels, and other waterways to flow under highways. Culvert damage or failure can seriously damage roadways, create the need for extensive repairs, and threaten the mobility and safety of the traveling public. The 2011 Maintenance Plan provided for continuation of a proactive inspection program to identify damaged or failed culverts, and Caltrans has developed management procedures to measure the health of drainage systems, prioritize potential culvert projects based on condition,

cost, and traveler delay, and track accomplishments and delivery schedules for maintenance work.

Approximately 42 percent of the total State drainage system has been inspected to date, or approximately 86,000 culverts, and about 36 percent require some type of maintenance repair. Approximately 23 percent of the culverts inspected annually require corrective maintenance repair work. At the beginning of FY2010/11, Caltrans identified an estimated 13,185 culverts with backlogged preventive maintenance needs. During FY2010/11, 260 culverts were repaired under the Culvert Inspection Program. In FY2011/12, Caltrans projected a repair goal of 174 culverts and accomplished 150 percent of that goal, repairing 262 culverts.

Unfortunately, Caltrans was unable to meet the 2011 Maintenance Plan drainage maintenance assessment goal of 14,000 culverts. Although more than 9,000 culverts were assessed in FY2011/12, a large percentage of culvert assessments and repairs identified through previous Maintenance Plans included "easier" assessments and repairs. The remaining culvert assessments and repairs are more difficult to address and require additional time and planning to complete. Several external factors, such as right-of-way constraints, environmental issues, multiyear mitigation permits, and difficulty in accessing various culvert locations, have impeded drainage maintenance assessment progress.

Until the inventory is complete and a large percentage of required rehabilitation work is identified, no additional funding for drainage maintenance work will be requested. Caltrans recommends the current funding of $23 million a year for drainage maintenance remain unchanged and is reducing the culvert assessment goal to 12,000 a year. At this assessment goal, and with the estimated 23 percent of the culvert inventory assessed annually requiring corrective maintenance, Caltrans estimates an additional 2,760 culverts will need corrective maintenance repair work each year. The current funding level slightly reduces the rate of backlog increase but does not eliminate it.

MAINTENANCE PROGRAM BUDGET MODEL

The Maintenance Program budget model was developed to enhance budget management capabilities on an annual basis. The performance-based model uses a combination of historical expenditures, Level of Service performance measures, and inventory data to project future resource needs with performance-level expectations for the entire State Highway System. While the budget model does include all resources, the model is used primarily to determine a performance-based budget for field maintenance activities.

Historically, the budget model grouped Caltrans' twelve districts into sets of comparable units, using geographic, population, and traffic volume characteristics. Current versions of the model have shifted the focus from district-level analysis to route-level analysis by grouping all routes based on traffic volumes and geographic locations. Through route-level analysis, the budget model provides detailed comparative analysis for determining relationships between performance and resource needs for each highway inventory unit, which creates standardized allocation and efficiency rates for each route.

The budget model is used:

- To measure the direct relation between funding and Level of Service and the effects of changes to either.
- To measure an efficiency curve at the State-route level for statewide comparisons.
- To measure a standardized allocation process for inventory items at a State-route level for life-cycle cost and asset management practices.
- To assist decision-makers in determining the best course of action relative to budgetary and performance issues.
- To predict funding needs based on project delivery actions and decisions.

ANALYSIS OF ALTERNATIVE LEVELS OF MAINTENANCE INVESTMENT

LEVEL OF INVESTMENT 1—BASELINE FUNDING

The current baseline annual funding level for pavement, bridge, and drainage maintenance totals $412.1 million, as listed in Table 2 below. Caltrans recommends maintaining this level of funding, which will reduce the annual average backlog of maintenance needs for pavement by 300 lane-miles and the bridge backlog by 96 bridges. The pavement backlog will decrease from 8,410 lane miles (17 percent) to 5,410 lane miles (10 percent) in ten years, and the bridge backlog will decrease from 2,170 bridges (17 percent) to 1,210 bridges (9 percent) in ten years. Although the overall drainage backlog will increase, the rate of increase is less than projected in the 2011 Maintenance Plan. The backlog for drainage will increase from 14,733 (7 percent) to 42,333 (21 percent) in ten years.

Table 2. LEVEL OF INVESTMENT 1—CURRENT BASELINE FUNDING

Program	Annual PYs	Annual Cost ($000,000)	Annual Accomplishments	Average Annual Change in Backlog	Future SHOPP Cost Avoidance ($000,000)
Pavement*	290	234.0	2,100 lane-miles	300 decrease	936
Bridge†	264	155.1	728 bridges	96 decrease	1,653
Drainage‡	188	23.0	262 culverts 12,000 assessments	2,760 increase	115
Total	742	412.1	---	---	2,704

*Pavement costs include personal services and Major Maintenance contracts. Annual costs include $204 million in Major Maintenance contracts and $30 million in personnel services for contract delivery support. The 2005, 2007, 2009, and 2011 Maintenance Plans did not include State maintenance forces for pavement work. The State force work included is limited to spot locations of damage, such as pothole repair and crack sealing.

†Bridge costs include State force repair crews, materials, equipment rental, contract dollars, and support. Bridge structural resources include $94.1 million in Major Maintenance contracts and $61.0 million in support of contract delivery, paint, and inspection.

‡Drainage costs include $12.5 million for State maintenance forces for assessments, maintenance, repairs, and associated equipment and materials, $7 million in Major Maintenance contract dollars and support, and $3.5 million for the drainage program.

LEVEL OF INVESTMENT 2—REDUCE BACKLOG (TEN YEARS)

With an increase of $144.5 million a year beginning in FY2014/15 to bring the total annual funding level to $556.6 million, at the end of ten years the backlog of pavement and bridge maintenance needs would be reduced as listed in Table 3 below and the known drainage maintenance backlog would be reduced to zero. An increase in investment of $116 million for pavement would reduce the pavement backlog by 440 lane-miles a year, a decrease of $1.5 million for bridges would reduce the bridge backlog by 87 bridges a year. The pavement backlog will decrease from 8,410 lane miles (17 percent) to 4,010 lane miles (8 percent) in ten years, and the bridge backlog will decrease from 2,170 bridges (17 percent) to 1,300 bridges (10 percent) in ten years. An increase of $30 million for drainage would reduce the culvert repair backlog growth by 805 culverts a year, from the current 2,760 culverts to 1,955 culverts a year. The backlog for drainage will increase from 14,733 (7 percent) to 33,883 (17 percent) in ten years.

Table 3. LEVEL OF INVESTMENT 2—REDUCE BACKLOG (TEN YEARS)

Program	Annual PYs	Annual Cost ($000,000)	Annual Accomplishments	Average Annual Change in Backlog	Future SHOPP Cost Avoidance ($000,000)
Pavement*	435	350.0	3,100 lane-miles	440 decrease	1,400
Bridge†	260	153.6	720 bridges	87 decrease	1,634
Drainage‡	267	53.0	1,067 culverts 12,000 assessments	1,955 increase	377
Total	962	556.6	---	---	3,411

*Pavement costs include personal services and Major Maintenance contracts. Annual costs include $305 million in Major Maintenance contracts and $45 million in personnel services for contract delivery support. The 2005, 2007, 2009, and 2011 Maintenance Plans did not include State maintenance forces for pavement work. The State force work included is limited to spot locations of damage, such as pothole repair and crack sealing.

†Bridge costs include State force repair crews, materials, equipment rental, contract dollars, and support. Funding includes $93.0 million in Major Maintenance contracts and $60.6 million in support of contract delivery, paint, and inspection.

‡Drainage costs include $12.5 million for State maintenance forces for assessments, maintenance, repairs, and associated equipment and materials, $3.5 million for the drainage program, and $37 million in Major Maintenance contract support costs.

LEVEL OF INVESTMENT 3—ELIMINATE BACKLOG (FIVE YEARS)

With an increase of $631.1 million a year beginning in FY2014/15 to bring the total annual funding level to more than $1 billion, within a five-year period the goal for pavement and bridge maintenance work would be achieved, as listed in Table 4 below. The pavement backlog will decrease from 8,410 lane miles (17 percent) to 4,160 lane miles (8 percent) in five years, and the bridge backlog will decrease from 2,170 bridges (17 percent) to 1,030 bridges (8 percent) in five years. At the projected drainage assessment rate of 12,000 assessments a year, there still would be 59,000 culverts remaining in the inventory to be assessed at the end of the five years, with an estimated 2,760 culverts needing repair work each year. However, the current backlog for drainage repairs will be eliminated from 14,733 (7 percent) to 0 (0 percent) in five years. Future SHOPP needs would be significantly less than either of the previously identified levels of investment.

Table 4. LEVEL OF INVESTMENT 3–ELIMINATE BACKLOG (FIVE YEARS)

Program	Annual PYs	Annual Cost ($000,000)	Annual Accomplishments	Average Annual Change in Backlog	Future SHOPP Cost Avoidance ($000,000)
Pavement*	625	520.0	5,000 lane-miles	850 decrease	2,080
Bridge†	329	178.2	861 bridges	228 decrease	1,953
Drainage‡	900	345.0	6,294 culverts 12,000 assessments	3,534 decrease	730
Total	1,854	1,043.2	---	---	4,763

*Pavement costs include personal services and Major Maintenance contracts. Annual costs include $455 million in Major Maintenance contracts and $65 million in personnel services for contract delivery support. The 2005, 2007, 2009, and 2011 Maintenance Plans did not include State maintenance forces for pavement work. The State force work included is limited to spot locations of damage, such as pothole repair and crack sealing.

†Bridge costs include State force repair crews, materials, equipment rental, contract dollars, and support. Funding includes $111.2 million in Major Maintenance contracts and $67.0 million in support of contract delivery, paint, and inspection.

‡Drainage costs include $12.5 million for State maintenance forces for assessments, maintenance, repairs, and associated equipment and materials, $3.5 million for the drainage program, $256 million in Major Maintenance contracts, and $73 million in Major Maintenance contracts and support costs.

RECOMMENDATION ON LEVEL OF INVESTMENT

The 2013 Maintenance Plan emphasizes the importance of completing critically needed maintenance work to the State's infrastructure, thus protecting California's unique quality of life and ensuring its economic competitiveness in the global marketplace. Caltrans recommends continuing the Level of Investment 1 of $412.1 million a year with no additional resources requested at this time. The total cost estimate for the five years of the 2013 Maintenance Plan is $2.06 billion.

APPENDIX

STREETS AND HIGHWAYS CODE SECTION 164.6

164.6.(a) The department shall prepare a 10-year state rehabilitation plan for the rehabilitation and reconstruction, or the combination thereof, by the State Highway Operation and Protection Program, of all state highways and bridges owned by the state. The plan shall identify all rehabilitation needs for the 10-year period beginning on July 1, 1998, and ending on June 30, 2008, and shall include a schedule of improvements to complete all needed rehabilitation during the life of the plan not later than June 30, 2008. The plan shall be updated every two years beginning in 2000. The plan shall include specific milestones and quantifiable accomplishments, such as miles of highways to be repaved and number of bridges to be retrofitted. The plan shall contain strategies to control cost and improve the efficiency of the program, and include a cost estimate for at least the first five years of the program.

(b) The department shall prepare a five-year maintenance plan that addresses the maintenance needs of the state highway system. The plan shall be updated every two years, concurrent with the rehabilitation plan described in subdivision (a). The maintenance plan shall include only maintenance activities that, if the activities were not performed, could result in increased State Highway Operation and Protection Program costs in the future. These activities may include roadway, structural, and drainage maintenance. The maintenance plan shall identify any existing backlog in these maintenance activities and shall recommend a strategy, specific activities, and an associated funding level to reduce or prevent any backlog during the plan's five-year period. The maintenance plan shall include specific goals and quantifiable accomplishments, such as lane-miles of highway to be repaved and the number of bridge decks to be sealed. The maintenance plan shall contain strategies to control cost and improve the efficiency of these maintenance activities, and include a cost estimate for the five years of the plan.

(c) The rehabilitation plan and the maintenance plan shall attempt to balance resources between State Highway Operation and Protection Program activities and maintenance activities in order to achieve identified milestones and goals at the lowest possible long-term total cost. If the maintenance plan recommends increases in maintenance spending, it shall identify projected future State Highway Operation and Protection Program costs that would be avoided by increasing maintenance spending. The department's maintenance division shall develop a budget model that allows it to achieve the requirements of this subdivision.

(d) The rehabilitation plan shall be submitted to the commission for review and comments not later than January 31 of each odd-numbered year, and shall be transmitted to the Governor and the Legislature not later than May 1 of each odd-numbered year. The maintenance plan shall be transmitted to the Governor, the Legislature, and the commission not later than January 31 of each odd-numbered year.

(e) The rehabilitation plan and the maintenance plan shall be the basis for the department's budget request and for the adoption of fund estimates pursuant to Section 163.