# Plan for the Future

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_Caltrans Program Review—July 2012_
Executive Summary—Envisioning Caltrans’ Future

The California Department of Transportation (Caltrans) finds itself at a point in time of changing fiscal, political, climate and environmental circumstances. Caltrans needs to evaluate its processes and determine how to move forward with continued success to fulfill its mission to improve mobility.

Year in and year out, Caltrans has demonstrated an outstanding track record by meeting delivery commitments as reflected in Contract for Delivery success. In addition, Caltrans has successfully implemented the American Recovery and Reinvestment Act and the California Proposition 1B Infrastructure Bond program. Funding for new transportation projects has peaked and is facing a precipice. Moreover, the roles of our local transportation partners are ever changing, and demands and expectations for efficiency and accountability are at an all time high. Caltrans must look to the future and reassess all our activities for opportunities to better serve the State of California.

To maintain our leadership role in transportation in California and the nation, Caltrans must foster an organizational culture that seeks positive change and exhibits the utmost professionalism throughout our ranks. To better achieve our strategic goals, Caltrans must be open to restructuring, more dedicated to managing change and be receptive to improvement initiatives that focus on results. To be successful, Caltrans needs to have progressive project delivery tools and use them effectively. Ultimately, Caltrans must make good business decisions that reinforce an obligation to be good stewards of taxpayers’ dollars.

“Grapevine” linking Los Angeles and Kern Counties—1934
This document captures the recommendations from a thorough Program Review led by a team of Caltrans innovators and local partners. The team’s ultimate objective is to improve the Department and transportation in California. The effort included outreach to all our Districts, Divisions, and partners throughout the State in order to garner the best perspective of where we are today and what direction we need to go. The Program Review enlisted input from employees, reflected on past strategic planning efforts and validated Caltrans’ five-year Strategic Plan as still very relevant to our mission.

To be prepared for the future, Caltrans must focus on an interconnected transportation system that provides mobility options for people and goods. We must be mindful of the impacts a transportation network has on the state’s economy and its environment with careful consideration and rightful diligence.

This vision relies on robust data and analysis to inform decision-making and builds on partnerships with local and regional partners, regulatory agencies, tribal governments, and the private sector. It relies on every employee and partner to perform at the highest level in planning, maintenance, traffic operations, project delivery and administration support.

Caltrans must continue to be an organization that is committed to continuous improvement and innovation in the areas of safety, improved mobility, delivering on project commitments and being good stewards of the environment. This requires healthy internal and external partnerships, and the establishment of a business culture that exemplifies the highest ethical and professional standards throughout our entire workforce.

To be successful, Caltrans will need to resonate harmoniously with our partners and transportation stakeholders. Our actions will be aligned with a clear mission, vision, and goals and our values will never be compromised.

The new and improved business processes that result from this report will serve to hold Caltrans leaders accountable. Improvements will be verifiable and measurable.

Together we can build a better Caltrans for tomorrow.
California's transportation system is the largest and most complex in the nation. The State's historical investment in roads, bridges, rail systems, airports, public transit, and other transportation infrastructure has fueled California's economy for decades.

With the state's population at over 37 million and growing, California must preserve and enhance the functionality of its transportation system in order to foster economic growth, attract employers, and ensure the safe, reliable mobility needed to improve the quality of life for all Californians. The State's future and our quality of life are dependent on moving people and goods efficiently.

Providing this mobility is the primary mission of Caltrans. California's economy depends on the capacity and ability to move people, goods and services throughout California and to other parts of the country. Transportation also employs millions of people by creating jobs in the construction, public transit, and transport industries.

Caltrans must now strategically manage and protect the State's investment in the transportation system to maximize its effectiveness, reliability, and keeping it in a state of good repair. Additionally, the useful life of the existing system, which represents decades of significant investments, must be maximized by employing strategic asset management practices.

A seamless transportation network is a commodity that all Californians, including users of autos, transit, trucks and bicycles as well as pedestrians expect. Reliable and safe mobility is a service users should be inclined to pay for. An interconnected multi-modal system reduces congestion, improves air quality, creates options for users, and allows people and goods to move freely throughout the State and beyond.

Caltrans and its entire workforce play a pivotal role in improving mobility and providing the leadership necessary to make California's transportation system the best in the world.

Caltrans Improves Mobility Across California
The California Department of Transportation (Caltrans) recently conducted comprehensive, collaborative assessments to shed light on the myriad of opportunities, constraints and risks related to improving mobility across California.

The following congruent initiatives will serve as the foundation for the ensuing Caltrans activities to refine assessments, identify measurable goals and to develop effective and efficient strategies:

- Caltrans Program Review
- Caltrans Strategic Plan Update
- California Interregional Blueprint

**Caltrans Program Review:** The primary objective of the Program Review was to identify cost reducing efficiencies without jeopardizing the ability to “Keep California Moving.”

The Caltrans Program Review assessed all the functional areas and organizational structure to identify redundancies and inconsequential activities that slow the delivery of projects, products and services and increase the cost of doing business.

The Program Review included representation of Caltrans agency partners and solicited feedback via a statewide survey to 65 regional and local transportation agencies. The effort yielded many ideas that Caltrans will pursue through immediate actions and “white papers,” to evaluate:

- **Re-organization opportunities** in Divisions and Districts to ensure we are positioned for efficient decision-making
- **Process streamlining** to ensure expeditious delivery of products and services, and facilitation of timely decision-making
- Opportunities for **greater flexibility** in resources and tools to manage program workload
- Maximization of **delegation** of authority and empowerment of employees to support timely decisions with the appropriate amount of risk
- Opportunities to enhance **partnerships** with transportation stakeholders to achieve our mission
The establishment of a Caltrans' Executive Board was the first implemented action resulting from the program review. The board is comprised of Caltrans Chief Deputy Director, Deputy Directors and District Directors and will report regularly to the Caltrans Director. The Executive Board structure will ensure that decisions are vetted and approved by all Caltrans executive managers and thereby enhance accountability.

Together, Headquarters and District executive managers will lead the Caltrans culture of continuous improvement. The development of “white papers” will serve as the primary mechanism to analyze and approve proposals for credible and sustainable change.

**Caltrans Strategic Plan Update:** The Strategic Plan focuses on strategies which are seen as key objectives for organizational process improvement over the next five years. The plan addresses both key external and internal driving forces that are influencing or have the potential to affect Caltrans mission, goals and values. This plan is an important part of the budget development process at Caltrans. The Office of Strategic Planning and Performance Management (OSPPM) will build upon the information and ideas from the Caltrans Program Review, the 2007-2012 Strategic Plan, the focused strategic priorities currently being pursued and performance management reporting in the development of the 2013 update.

**California Interregional Blueprint (CIB):** The purpose of the CIB is to articulate the State’s vision for an integrated, multi-modal interregional transportation system. The vision will incorporate regional transportation and land use plans to develop long range, interregional modal plans with the latest technology and tools. Another important component of the CIB is to identify mobility systems that achieve the maximum feasible greenhouse gas emission reductions. Working with regional partners, the CIB will help address the legislative requirements and objectives to reduce greenhouse gas emissions to 1990 levels. SB 375 requires a 30 percent reduction of vehicle greenhouse gas emissions by 2016. It requires Regional Transportation Plans to include implementation strategies to achieve regional reduction targets. The CIB will begin to focus Caltrans efforts on the changing transportation system and shifts in vehicle modernization, mode choices and average daily traffic. In addition, the CIB will integrate other statewide programs such as the “Smart Mobility Framework,” “Complete Streets,” and “Advance Mitigation Planning and Initiatives.” The CIB will result in the California Transportation Plan, a long-range plan that looks to the 20-year horizon that is updated every five years.

The ultimate goal of these complementary efforts is to effectively balance the mission to improve mobility while being attentive stewards of the state’s finite natural, cultural and fiscal resources. In order to do this well, we need to sustain a comprehensive outlook with continuously engaged, collaborative public and private-sector partnerships.
Program Review Methodology

The Caltrans Program Review project was established by Caltrans Director Malcolm Dougherty, who assigned the following project manager and team of internal and external executives:

**Internal Team Members**

- Laurie Berman, District 11 Director—Program Review Project Manager
- Kome Ajise, P3 Program Manager
- Robert Copp, Traffic Operations Division Chief
- Bijan Sartipi, District 4 Director

**External Team Members**

- Anne Mayer, Riverside County Transportation Commission Executive Director
- Frank Quon, Los Angeles Metropolitan Transportation Authority Executive Officer–Highway Program,
- Suzanne Smith, Sonoma County Transportation Authority Executive Director
- Charles “Muggs” Stoll, San Diego Association of Governments Director of Land Use and Transportation Planning

The Program Review project team was also supported by a Caltrans Executive Steering Committee comprised of the following:

- Rick Land, Chief Deputy Director
- Doug Kempster, Acting Chief Information Officer
- Norma Ortega, Chief Financial Officer
- Robert Pieplow, Acting Chief Engineer
- Cris Rojas, Administration Deputy
- Steve Takigawa, Maintenance & Operations Deputy
- Martin Tuttle, Planning & Modal Programs Deputy

The State Smart Transportation Initiative (SSTI) was also involved in the effort. The mission of SSTI is to promote “smart transportation practices that promote environmental sustainability and equitable economic development, while maintaining high standards of governmental efficiency and transparency.” The institute is composed of former state Department of Transportation agency directors, managed out of the University of Wisconsin and funded by the US Department of Transportation and the Rockefeller Foundation. SSTI provided assistance by taking an outside look at how Caltrans operates and providing advice on specific issues based on what its members have seen in other states.

Input on the areas to pursue for change came from statewide interviews performed by the internal review team. The District Director and their executive management teams from each of the 12 districts were interviewed as a group at the respective district by members of the internal team. While these executives were provided in advance with suggested discussion topics, the interviews involved free-form discussion that allowed all the participants to bring forward unique areas of concern and a wide range of ideas for improvement.

At Caltrans Headquarters, 33 Headquarters executive managers (those deputies and division chiefs not on the project team or the Executive Steering committee) were interviewed by a Program Review team member in groups of three in a similar discussion forum, with topics provided in advance but open to unique areas of concern and improvement ideas.
The project team compiled comprehensive notes from all internal discussions, and specific themes emerged. These themes were developed into the findings/recommendation topics for this report.

The external review team members reached out to local agencies. Similar to the internal review discussions, there were suggested questions, but the discussions were open to all areas of concern. Additional external outreach also included meetings with employee unions, Legislative staff, FHWA and industry.

**Collection of Ideas and the Themes that Emerged**

After ideas from a broad range of sources were collected, all ideas were placed into the following four categories: Operations, Management, Support and External. These four categories are not completely distinct, and some ideas could fall into multiple categories.

- **Operations** ideas are focused on core business activities that could be changed easily, are within Caltrans’ control and don’t require a specific management push for them to happen.

- **Management** ideas impact the department’s organization or have such a large impact on operations that a major change in management focus is needed.

- **Support** ideas are activities that if they became more efficient could broadly help the whole department, including administrative and information technology functions.

- **External** ideas are those that require an external agency in state government or the federal government to approve the change, or new laws or regulations must be put in place to make the change happen.
When looking to the future, it is prudent to prepare for a partly cloudy scenario. Strategic positioning encompasses strengths and opportunities as well as weaknesses and threats. Caltrans is an agency with a long history and tradition of getting big things done. During the past ten years, Caltrans has delivered a multi billion dollar construction program. In addition, Caltrans has conducted numerous demonstration projects to advance innovative delivery methods and products such as, the use of “Design Sequencing,” “Design Build”, “Accelerated Bridge Construction”, Public Private Partnerships “P3” and the use of energy efficient LED lights.

To prepare for and adapt to future demands and challenges, it will be important to research the trends and strategies of national and international transportation agencies. Caltrans will rely on SSTI for their assessments of the best practices of other state Departments of Transportation (DOTs) and will be an important resource to aid Caltrans continuous improvement efforts.

Responding to Change: The challenge to remain current and efficient impacts every organization, and it is imperative that managers commit to sponsoring continuous, results-focused assessments and improvements. Caltrans needs to be open and ready for change. These changes need to be well vetted and prioritized according to magnitude of impact and financial feasibility. Towards this end, the following improvement proposals are already underway (details are provided in the appendix of this report):

- Implement an Enterprise Risk Management Strategy
- Streamline and clarify the roles of Caltrans Headquarters and District staff
- Identify efficiencies to maintain system infrastructure at existing or reduced resource levels, such as investing in energy efficient and/or recycled, “green” products
- Utilize new technologies to maximize effectiveness and efficiencies, such as maximizing the use of fiber optic networking

The Context for Change: Caltrans has identified six key focus areas that will frame the strategic perspective for mobility:

- Expanded Partnerships
- Funding and Fiscal Stability
- Preservation and Sustainability
- Organizational Restructuring
- Risk Management
- Innovation
Expanded Partnerships

Effective partnerships are dependent on a shared vision, with open channels of communication with clear roles and responsibilities. Caltrans partners with many agencies to address the desires and concerns of residential, business and agricultural communities, and shares interests to preserve the natural and recreational environments. Caltrans is pursuing opportunities to enhance and expand partnerships; examples include:

- Collaborate with the Federal Highway Administration (FHWA) to identity strategies to streamline Caltrans’ oversight processes
- Assess and align regional and state planning efforts to eliminate non-value added tasks
- Identify potential highway routes to relinquish to local partners
- Seek private-sector investors to augment public capital project funds
- Streamline the Project Initiation Document (PID) process to reduce cycle time by 30 to 50 percent and provide a PID conflict resolution process
- Increase flexibility to partner with the private-sector to expedite project delivery
- Work with federal and local partners to improve the local assistance program
- Leverage Caltrans’ considerable expertise to deliver large-scale transportation infrastructure projects with other lead agencies, such as the High Speed Rail Authority

Funding & Fiscal Stability

Caltrans is annually funded by the California Legislature within the Budget Act for core program responsibilities to support three key budget categories:

- **State Operations** – All State salary costs, including benefits (Personal Services), Maintenance and Operating Expenses and Equipment
- **Local Assistance** – State Grants/Subvention to local agencies for the operation, maintenance, and acquisition or development of facilities or land, provided the local entity retains ownership after completion of the project
- **Capital Outlay** – Acquisition/creation/renovation costs of real assets for which the State holds ownership (does not include routine maintenance and operation of State assets)

Once funds are budgeted into one of these three categories they can only be expended for work that aligns with the category definition.
Fund levels for State Operations and Local Assistance have experienced moderate change, but Capital Outlay has been highly volatile. This volatility creates significant challenges in managing staffing levels, since Capital Outlay support resources represent approximately 45 percent of the department’s staff. While Caltrans has had a high level of Capital Outlay appropriations in the most recent years (due to Proposition 1B – bond funds), the appropriations drop off sharply in the coming years, with little expectation of a rebound.

Caltrans is California’s owner of the state highway system. State law charges Caltrans with the planning, design, construction, maintenance and operation of the state highway system (Statutes of 1997, Chapter 622, SB 45). Regardless of who performs these functions on the state highway system, Caltrans is ultimately responsible for assuring the system’s safety and integrity.

The “buying power” of gas tax revenues has declined due to the effects of inflation, more fuel efficient vehicles and reduced fuel consumption. In addition, much of the remaining traditional State and Federal dollars for capacity increasing projects in the State Transportation Improvement Program (STIP) have been flowing to the maintenance and operation of an aging system. State and Federal funds will continue to be directed to the State Highway Operations and Preservation Program (SHOPP), however Caltrans anticipates a continued short fall in funds to address deficiencies identified in the SHOPP.

The chart below illustrates the peaks and valleys of transportation revenue, the trend of decreasing resources and the shift to local sales tax revenue.
Caltrans Core Programs: Caltrans ensures that California’s network of highways serves statewide interregional and regional travel demand, connecting local roads or arterials to the state and interstate highway network. Development, modification and maintenance and operation of the state highway system serves the statewide mobility of people and goods and puts a priority on safety. Caltrans accomplishes this within the definitions of its program activities.

Transportation Maintenance and Project Delivery Programs: These programs operate, maintain, and deliver improvements for the state highways. Development and delivery of capital projects make up the largest portion of these efforts, while maintenance and operations remain a significant focus.

Transportation Planning Program: This program implements statewide transportation policy through coordination at the local and regional levels. The program is responsible for preparing the long-range state transportation plan required by State and Federal laws and provides long-range transportation system planning and transportation planning studies.

Mass Transportation & Rail Programs: The objective of these programs is to support the state’s transportation system by providing leadership in the implementation of safe, effective public transportation, rail passenger and freight systems, improved air quality, and environmental protection.

Aeronautics Program: This program supports aviation activities, airport and heliport safety.

Administrative Services: This program supports the mission critical work with essential services such as, accountability for the statewide acquisition of goods and services, administering the health and safety program, human resources support services to all levels of staff within the Department.

Legal Division: This Division primarily consists of tort litigation defense, handling employment law, construction claim arbitration, eminent domain, inverse condemnation, and environmental matters. The Legal Division provides legal support to all programs of the Department statewide.

Transportation revenue is expected to stay stagnant or decrease while transportation demand will increase due to natural population growth. A stronger, more focused organization is the key to maintaining and operating the highway system, providing multi-modal leadership and meeting the overall demands of the traveling public.

For over a decade, Caltrans has worked with regional agencies to advance transportation improvements that have collectively expanded the state’s highway inventory significantly. However, funding to address the state’s operations and maintenance responsibilities have not kept pace with the increased inventory. Adequate maintenance to preserve our infrastructure investments is a shared interest of all Californians. Caltrans will be working with regional and local partners to explore:

- Find ways to address life cycle costs of capital projects especially those adding inventory to the state highway system
- Continue to work with transportation stakeholders to explore revenue options and other strategies that are tied to performance measures and Department accountability
- Sponsor demonstration programs emulated from other state Departments of Transportation evaluated by the State Smart Transportation Initiative (SSTI) to fund system preservation
Furthermore, to respond to state revenue shortfalls and a projected future decline in the budget for capital improvements, Caltrans has been managing staffing levels using attrition and strategic hiring.

Uncertainty abounds in the funding arena. Numerous delays in reauthorizing Federal transportation legislation, declining revenues due to inflation and decreased fuel consumption demand new solutions for sustaining mobility. Without new fund sources, Caltrans can expect a diminished program in the next few years when projects funded with American Recovery and Reinvestment Act (Federal Stimulus Dollars) and Proposition 1B revenues are completed. Regardless, the expansion of California’s highway network is near completion and revenue will be directed towards solutions for operating the existing system more efficiently and maintaining the State’s capital investments.

**Preservation & Sustainability**

Despite the continued increase in transportation demand and an aging infrastructure that requires increased maintenance, transportation funding has not kept pace. The Gasoline Tax has been the primary funding source and has decreased over time with increased efficiency of gas consumption in vehicles, rising construction costs, and no inflationary indexing. A 2011 Statewide Transportation System Needs Assessment prepared for the California Transportation Commission estimated that the total cost of all system preservation, system management, and system expansion for the next ten years is nearly $538.1 billion. The system preservation costs alone are $341.1 billion over this period. Revenue is estimated at $242.4 billion, leaving a shortfall of $295.7 billion.

Another pressing transportation need involves goods movement. The Office of Freight Management at the Federal Highway Administration estimates that the amount of freight moved on California highways will increase from 971 million tons in 2002 to 2,179 million tons in 2035, an increase of more than 100 percent. This increase will further stress California’s 50-year-old interstate highway system. The wear and tear of truck traffic on pavement and bridges accelerates the deterioration of the transportation infrastructure, posing safety concerns and degrading overall levels of service.

Local sales tax initiatives in many counties have served to fund needed expansion of the state highway system, but have also added inventory in the face of a growing resource deficit for system preservation. The State Smart Transportation Initiative’s nationwide scan on this issue notes that Maine has a “Fix, Swap and Help Fund Strategy” in which local governments end up as owners of minor collector roads but the State pays a portion of the ongoing maintenance costs. The State Smart Transportation Initiative proposes that California try the reverse. While this may or may not work for California, Caltrans needs to work with regional and local partners to identify strategies to address the life-cycle impacts of new or improved infrastructure.

Sustainability initiatives in addition to preserving the natural environment, also provide opportunities to address Caltrans system preservation objectives. Energy efficient technology and conservation efforts most often result in reduced life-cycle costs.
Air Quality
Nearly all transportation projects have some effect on air quality. A project's location and capacity increases can have adverse impacts to air quality threatening the health of the public and the environment. However, a project's impact can also be positive, improving traffic flow can reduce pollutant emissions. While emissions have dropped due to improved vehicle emission controls, future traffic growth is expected to counteract these reductions. Caltrans will increase collaborative efforts with public and private partners to support mobility options that significantly reduce or eliminate hazardous emissions.

Climate Change and Green House Gas (GHG) Emissions
Another pertinent issue concerning system preservation and the need for green technologies is climate change. Continued climate change could lead to environmental impacts to the state's transportation infrastructure and if not addressed, could increase long term costs for the maintenance and operation of the state highway system and could impair public mobility and safety.

The California Global Warming Solutions Act of 2006 and the subsequent passage of Senate Bill (SB) 375 increases the scrutiny of pollutants, particularly from vehicles, that contribute to Green House Gas (GHG) emissions. SB 375 requires that global warming issues must be addressed during the transportation planning process. Caltrans is working with regional and local partners to assess and develop Sustainable Communities Strategies (SCS) to meet GHG emission reduction targets. Examples of the transportation elements of the SCS include reducing roadway bottlenecks, increasing transit and Transportation Demand Management. A key outcome of Caltrans' California Interregional Blueprint is a long-range transportation plan to meet California's climate change goals under Assembly Bill (AB) 32.

Caltrans has an important role to play with our regional partners to help mitigate the impacts of climate change by implementing strategies for greenhouse gas reduction. The following conditions resulting from climate change are expected to adversely impact the state's infrastructure:

Extreme Heat
According to the California Energy Commission, California has been warming at a rate consistent with worldwide averages. Extreme heat events in the state are expected to become more common, last longer and affect large areas. Impacts of extreme heat events include; buckling or cracking of concrete, thermal expansion of bridge joints, warping of railroad tracks, and may require roadwork be conducted at night during cooler temperatures.

Sea-Level Rise
California has over 1,000 miles of coastline with major population centers and significant transportation infrastructure. Changes in sea level, especially during storm events at high tide, could pose great threat to transportation infrastructure including roadways, rail lines, ports, airports, and underground rail and subway facilities. In addition to flooded infrastructure, bridges are vulnerable to scour. Scouring occurs when swift moving water removes sediment from the base of bridge supports. Scour greatly compromises bridge integrity, and can lead to bridge failure. As sea levels rise, and extreme storms occur more often, the threat of catastrophic scour is increased.
Precipitation Changes
California is expected to retain its Mediterranean climate of cool, wet winters and warm, dry summers. Overall, it is unlikely that typical seasonal precipitation patterns will change drastically, however significant regional variations are expected. It is expected that the Sierra Nevada mountain range will get more precipitation in the form of rain rather than snow which will affect runoff and increase the potential for landslides and roadway washout. Changes in the timing and intensity of precipitation events could lead to more rock and snow slides and slope failure. Traditionally dry regions that experience more extreme events are at high risk for system disruption from washouts.

Water Quality
The conservation and quality of water is another area of concern for California. Storm water run off degrades water quality from soil erosion and other roadway related pollutants. Caltrans construction projects and maintenance activities are subject to rigorous federal, state and local regulations and permitting requirements to sustain or improve water quality. These requirements are expected to become much more prescriptive over time. Proposed regulations are and will continue to increase Caltrans risk of unmet compliance, while at the same time Caltrans financial commitment is decreasing.

Caltrans’ credibility with the State and Regional Water Quality Control Boards is vital to project delivery, owner operator activities and commitment to Caltrans' stewardship goal. California's drought conditions and the cost of water are also expected to increase, thereby compounding the need for water conservation and the preservation of water quality.

Organizational Restructuring
Caltrans needs to continuously assess the optimum workforce, including a balance of classifications, management staff to rank and file staff ratios and evaluations of personnel practices, hiring and training. Training and retention efforts are essential for preparing Caltrans workforce of the future.

Caltrans will be developing many ideas to achieve efficiencies. These ideas will be thoroughly vetted to ensure that quality of our projects, products and services are maintained. Examples of organizational restructuring include:

- Reorganizing and consolidating Caltrans divisions with similar focus areas
- Reorganizing Districts to improve responsiveness to regional/local needs
- Reorganizing Information Technology where needed
- Delegating more production responsibility and approval authority to the Districts
- Evaluating oversight roles and responsibilities to eliminate duplicative reviews and to provide clear decision-making authority
Risk Management

The single most significant roadblock to change that was highlighted both internally and externally is the department’s aversion to risk. Given the evolution of project sponsorship and funding, in some cases, there has been a shift in risk ownership to regional and local partners. Since many risks involve impacts to transportation safety and potentially large tort liabilities, it is important to identify and implement improved risk management protocols.

Caltrans is currently working on developing an Enterprise Risk Management program that will enhance the identification of acceptable risks, assure that we manage risk sufficiently and delegate decision-making to the correct level. Enterprise Risk Management and associated processes must be robust and account for district and regional cultural aspects. Caltrans has identified four types of risk that require diligent assessments: project risk, program risk, operations risk, and organizational risk. Since the Districts have direct contact with the public and relationships with their local partners, they need to be provided the flexibility to act appropriately and decisively, within the Headquarters policy structure. Furthermore, Caltrans employees need to be empowered to make risk management based decisions and process changes within their respective span of control.

Innovation

California boasts a culture of business innovation and mobility. Our state is known for our high-tech business community and entrepreneurial spirit. To remain relevant in today’s rapidly changing world there is risk in continuing to do things the same way and not embracing the need to change. Therefore, Caltrans is committed to deploying innovation more rapidly throughout the department.

Caltrans will pursue many innovative products, tools and methods utilizing a continuous improvement model managed by a two-year strategic planning cycle. Caltrans will also focus on ways to expedite the process to test and implement new technologies.

Examples of innovation currently being examined and tested are:

- Light Detection and Ranging (LiDAR), laser technology for survey mapping
- Public Private Partnerships (P3) for expanded project delivery and funding opportunities
- Alternative project delivery methods such as Design Build and Construction Management/General Contractor (CM/GC)
- Improve traveler information, such as Caltrans “Quick Maps”
- New programs to improve worker safety, for example, use barrels in lieu of cones to protect work zones
- Streamline the contract procurement process to minimize duplication with Department of General Services approval process

Promoting a culture of change requires empowering staff at the lowest level to foster ideas by providing adequate support and encouraging intelligent risk-taking. If Caltrans continues to be mired in outdated processes and antiquated technology, the ability to carry out it’s core mission and goals becomes impossible.
As the Caltrans Program Review was being conducted, it was necessary to define how the Program Review related to Caltrans’ Strategic Plan and Strategic Priorities. It is important to ensure a consistency of purpose between the two efforts and to incorporate information gained from the Program Review into the Strategic Plan update for the next five years, 2013-2018.

The Strategic Plan starts with Caltrans Mission/Vision and Values and Goals. The Values and Goals support the Mission/Vision and are the foundation to Caltrans strategic outlook. While Caltrans’ values are an expression of how we choose to operate and the manner in which we intend to carry out our Mission, our strategic goals outline the direction we must pursue to accomplish our Mission and Vision.

Caltrans went through an extensive process to develop its current 2007-2012 Strategic Plan, a “living document” that includes an on-going effort to regularly evaluate and report on Caltrans performance measures. To make the plan work it was important to secure buy-in from all employees. Caltrans developed the plan using a “bottom-up approach” and invited our more than 19,000 employees to participate in a survey to aid in its development.

The following diagrams illustrates the dynamic process involved in strategic planning. In order to make informed decisions for new policies, protocols and practices, analysis must be obtained from previous strategic plans, quarterly performance reports, and “white paper” proposals. Strategic planning requires an on-going effort of soliciting ideas, information and feedback from Caltrans employees, agency partners and stakeholders.

**Program Review Master Action Plan:** In the course of interviewing internal staff and external partners, several hundred ideas were gathered. From these ideas, several common themes emerged. Program Review Team Members and the newly formed Caltrans Executive Board agreed upon a priority ranking for each theme. These ideas are contained in the Program Review Master Action Plan. This is a living document that will be updated regularly. Caltrans Executive Board will hold at least monthly meetings to foster the strategic plan update, monitor, and evaluate performance and to acknowledge and celebrate achievements.

Caltrans will be implementing a communication plan for employees, partners and stakeholders to convey strategic objectives, corresponding performance expectations, performance measures, and activities related to the Program Review.
Implement Program Review Master Action Plan:

- Caltrans Executive Board will hold at least monthly meetings to foster the strategic plan update, monitor, and evaluate performance and to acknowledge and celebrate achievements.

- The Program Review team will meet semiannually to follow up on actions and reassess strategies in order to foster continuous improvement.

- White papers will be developed for those ideas contained in the Program Review Master Action Plan. Each white paper will provide a full analysis and define performance measures, including cost-benefit analysis.

- Department performance measures will ensure that outcomes achieve the objectives of the Program Review effort.

- A communication plan for employees, partners and stakeholders to convey strategic objectives, corresponding performance expectations, and measures and to delineate roles and responsibilities. Caltrans must continuously impress upon the workforce that our Mission, Vision and Goals are given the utmost priority.
Program Review Action Plan

Overview of Recommendations

A. Strategic Management

A-1 Establish Executive Board
Chair: Chief Deputy, members 6 Deputies, 12 District Directors that regularly report to the Director

Scope:
- Develop and articulate Caltrans Vision for the future
- Integrate Risk Management into organization’s policy and process development
- Oversee Service and Policy Boards

A-2 Clearly Identify Future Needs and Appropriate Restructuring
- Identify activities performed by Caltrans that are not core responsibilities and that may be more appropriately performed at a local level or privately, such as: ferry boat operators, toll collection, park and ride lots
- Develop strategy for accomplishing the relinquishment of designated routes no longer part of the State Highway system that remain Caltrans responsibility. Fully scope this effort, starting with a comprehensive listing of those routes, and fiscal information from Maintenance on their current management costs.

B. Fiscal Stability

B-1 Develop a fiscally-constrained plan for addressing clear priorities with the decreasing level of funding projected for the future

B-2 Develop and implement strategies for new funding mechanisms beyond the gas tax.

C. Improved Mission Delivery

C-1 Assess and Improve Caltrans Processes
- Create a master inventory list of key processes for each mission-delivery program. Assure that processes are reviewed on a regular basis to assure continuous improvement and “sunsetting” of obsolete requirements.
Appendix A (page 2 of 3)

Program Review Action Plan

Overview of Recommendations

C-2 Implement targeted process improvements:

- **Local Assistance** - Reduce duplicative reviews and develop certification process for local agencies who want more authority and responsibility.

- **PIDs** - Continue implementation of Project Initiation Document (PID) Strategic Plan adopted in 2009. To date, 17 of 20 recommendations have been adopted, including the Project Study Report - Project Development Support (PSR-PDS) document as the base streamlined document. Remaining actions are to be implemented within the next year.


- **IT modernization** - Identify technology changes desired along with an efficient procurement process.

C-3 Improve Processes involving Partnerships with Other Entities

- **FHWA** - Work with the Federal Highway Administration to delegate authority to Caltrans and local agencies. Coordinate Local Assistance streamlining with FHWA.

- **CTC** - Caltrans, external partner agencies and the California Transportation Commission (CTC) need to work together to hone in on the role of each entity and identify opportunities for improvement towards more effectively and efficiently delivering the state’s transportation program.

- **DGS** - Employ greater flexibility in contracts and procurement. Eliminate duplicate legal and other reviews at Department of General Services (DGS) and Caltrans prior to contract execution. This is costly in time and dollars for both departments.

- **Resource Agencies** - Streamline environmental oversight from state environmental agencies and move management of mitigation banks to resource agencies that are better suited to manage this resource.

- **Local/Regional Partners** - Evaluate transportation planning roles and responsibilities between regional planning agencies and Caltrans. Identify efficiencies and eliminate any duplication of efforts.

- **High-Speed Rail Authority** - Work cooperatively with the High-Speed Rail Authority to share staff wherever possible and ensure success of one of the biggest transportation programs in the state.
D. Improved Effectiveness through Innovation

D-1 Pursue Innovative Delivery and Operations Methods

• **Life Cycle Impacts**—Fully commit to asset management of the state highway system infrastructure, with focus on its performance. Develop life-cycle cost methodologies and determine how to factor into the process when projects are being developed.

• **Project Delivery Methods**—Increase emphasis and application of Public-Private Partnerships, Design-Build and Construction Manager–General Contractor, and Job Order Contracting. Adopt methods as part of Caltrans’ toolbox to increase the options for delivering a variety of infrastructure projects.

• **Incentive Payments**—Implement the Federal Highway Administration proposal to make incentive payments to property owners who sign contracts in a timely manner.

D-2 Contracting

• **Contracting with other State departments**—Identify services that are provided by other State Departments and determine whether they might more economically be performed there:

• **Contracting out privately**—Identify things that might be more economically performed externally

• **COS contracting/in-house mix**—Increase flexibility in determining mix of in-house staff and consultant services to better match and adapt to the volatility of the Capital Outlay Support (COS) budget.

E. Improved Efficiencies

E-1 **Look for opportunities to reduce operating costs.**

E-2 **Improve Information Technology (IT) operations**

• Benchmark new system proposal and development process

• Improve Feasibility Study Report (FSR) selection process so that funding availability by program is not the primary determinant.

• Perform overall IT evaluation

E-3 **Improve Administrative operations, such as procurement, facilities management, Training, and Human Resources procedures**
Executive Summary

An objective survey was sent to Caltrans regional and local transportation partners, designed to provide views of California transportation priorities, and strategies to achieve these priorities. It also sought to determine the leadership approach and roles that should be assumed by the related transportation partners in different efforts and finally asked for evaluation of Caltrans performance in its transportation programs and reimbursed work.

The survey was sent to 65 partners, primarily representing Metropolitan Planning Organizations (MPOs), Regional Transportation Planning Agencies (RTPAs), and Congestion Management Agencies (CMAs). Of the more than half who answered the survey, the majority were from larger regional agencies.

Top priorities were identified as reliability and affordability, with service life sustainability and accessibility listed as more medium priorities. Key strategies identified for achieving the priorities were mode choice/connectivity and technology investments.

In most cases, the respondents felt that a coordinated state and regional approach was the best way to achieve the strategies, except for land use coordination, which the majority felt should be best led at the regional level.

The evaluation of Caltrans performance found the most dissatisfaction in Planning and Environment Impact Review. They responded with some dissatisfaction with Public/Stakeholder Outreach, Local Assistance, Cost Estimates, and Travel-way Features & Aesthetics.

The majority of respondents came from agencies that contract with Caltrans to perform reimbursed work. The majority felt the work met their expectations. Only a small group expected to have Caltrans perform reimbursed work for them in the next 3-5 years.
Introduction:
The 2012 Caltrans Survey of Regional and Local Transportation Partners was conducted February 13 - 21, 2012 as a component of the Department's program review effort. The goal of the survey was to obtain feedback on the effectiveness of Caltrans from Metropolitan Planning Agencies (MPO), Regional Transportation Planning Agencies (RTPA) and local jurisdictions with whom the Department coordinates planning and project delivery activities throughout the State of California. The survey covers a wide range of program areas including transportation planning, capital project delivery, maintenance and operations, contracting, and the use and availability of other Caltrans products and services.

Development of the Survey Instrument:
The survey instrument was developed by the program review team, with refinement and final configuration coordinated between Caltrans District 11 and the San Diego Association of Governments (SANDAG). SurveyMonkey, a web based survey tool, was used to design the survey instrument and solicit responses via e-mail. A total of 65 regional and local partners, primarily focused at the executive management level, were identified as survey recipients. The initial survey invitation was transmitted on February 13, 2012, with three reminder invitations sent out prior to the survey closing date of February 21, 2012. A total of 35 responses were collected, which represents a 54 percent response rate.

Survey Data Analysis:
The SurveyMonkey program provides several data analysis tools which enable the survey administrator to perform traditional survey tasks such as developing filters, crosstabs, tables, charts, etc. To accomplish survey goals, some additional analysis was performed in order to gauge regional or geographic trends, combine similar responses within program areas, and breakout individual “free-form” responses collected through text input boxes. Respondents providing specific comments for questions with additional input options were kept anonymous.

The full 25-page report of survey findings and analysis can be obtained via the web link provided on page 32.
Caltrans Responsibilities
Caltrans and its employees manage over 50,000 lane-miles of roadways. Caltrans owns and operates 265 state highways, owns and manages 12,300 bridges and 665 buildings and other structures. Caltrans ensures the safety of State highway bridges as well as nearly 12,000 additional bridges on local highways.

While the majority of the work performed continues to support the state's highway system, Caltrans provides leadership in multi-modal transportation planning, as well as permits nearly 800 airports and aviation facilities. Caltrans also manages the largest state-supported rail system in the nation with 88 intercity passenger rail cars and 17 locomotives, with annual ridership of nearly 6 million.

Caltrans’ responsibilities are accomplished through the cyclical transportation process: planning, designing/building, maintaining, and operating the State’s transportation systems. Caltrans continues to demonstrate a great ability to deliver projects, respond to emergencies, handle winter conditions and make the most of limited resources. The opportunity that exists going forward is one of leadership for transportation statewide and partnership with our local agency partners.

Profile of Caltrans
Caltrans is currently a department of approximately 19,300 employees; about 80 percent of those employees are responsible for the planning, building, maintaining and operating of the State Highway System. The remaining 20 percent deal with other modes of transportation, department support and administration of State and Federal subventions to local governments.

Over 70 percent of Caltrans employees are managed from the 12 geographic districts offices that cover all of California. The remainder is managed through Caltrans’ Sacramento Headquarters.

Transportation Funding Gap
Much of the state highway system was built between 1950 and the early 1970s to serve the growing population and economy of the state. Many of these assets are reaching the end of their service lives, and most are at an age that they are deteriorating at an accelerating rate. This deterioration comes at a time when demands on the state highway system are steadily increasing. Between 1955 and 2008, the number of vehicle miles traveled annually increased by 475 percent. National projections by the Federal Highway Administration indicate that vehicle miles traveled will continue to rise by an additional 130 percent by 2050.

Despite the increase in transportation demand, transportation funding has not kept pace. In addition, the purchasing power of the traditional funding sources, such as the gasoline tax, has decreased over time because of increased fuel efficiency and rising construction costs. A 2011 Statewide Transportation System Needs Assessment prepared for the California Transportation Commission estimated that the total cost of all system preservation, system management, and system expansion projects during the 10-year study period is nearly $538.1 billion. Of this total, the cost of needed system preservation projects (both rehabilitation and preservation projects) during the study period is $341.1 billion. Unfortunately, there is only $148 billion of identified total revenue (for rehabilitation and maintenance) available during that same 10-year period.
Appendix C (page 2 of 6)

A look at Caltrans’ budgets in the recent decade paints a graphic picture. (See Chart 1 below.) Both State Operations and Local Assistance have experienced moderate change, but Capital Outlay has been highly volatile. With Capital Outlay the majority of Caltrans’ appropriations, and hence the driver of most of its Personal Services expenditures, this volatility creates significant challenges in managing staffing levels in the department. While Caltrans has had a high level of Capital Outlay appropriations in the most recent years (due to Proposition 1B bond funds), the appropriations drop off sharply in the coming years, with no expectation of rebound.

![Chart 1](chart1.png)

Chart 1: Annual Level of Categories

<table>
<thead>
<tr>
<th>Year</th>
<th>State ops</th>
<th>Cap Outlay</th>
<th>Loc Asstc</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004/05</td>
<td>9,000.0</td>
<td>7,000.0</td>
<td>3,000.0</td>
</tr>
<tr>
<td>2005/06</td>
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<td>2,000.0</td>
</tr>
<tr>
<td>2006/07</td>
<td>7,000.0</td>
<td>5,000.0</td>
<td>1,000.0</td>
</tr>
<tr>
<td>2007/08</td>
<td>6,000.0</td>
<td>4,000.0</td>
<td>0.0</td>
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<td>0.0</td>
</tr>
<tr>
<td>2010/11</td>
<td>3,000.0</td>
<td>1,000.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2011/12</td>
<td>2,000.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>2012/13</td>
<td>1,000.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Annual levels of each Appropriation category, actual budget fiscal years 2004/2005 – 2011/2012, proposed budget 2012/2013 ($000,000)

* Does not include Prop 1B Bond funds, which will be added in the May 2012 revise

Chart 2 on the next page shows historical highway expenditures in California, compared to population growth and vehicle miles travelled.

Transportation stakeholders face significant funding challenges to fund the increasing transportation needs. Both state and federal revenues have not kept pace with the investment needs of an aging system, much of which was built between 1950 and the early 1970’s. In a ten-year look comparing transportation system cost to expected revenues, the California Transportation Commission forecast a $165 billion deficit for California highways. The willingness of cities and counties to tax themselves in support of transportation is a bright spot in an otherwise dismal funding scenario.

California is suffering under a growing gap between needs and revenues that can be addressed only by changing the funding model. While Caltrans needs to continue in an important leadership role in the state’s transportation systems, other transportation solutions as well as other avenues to deploy and finance transportation need to be devised.
Unmet Transportation Needs

Chart 3 on the next page is from the California Transportation Commission’s report of November 2011 (“Statewide Transportation Needs Assessment”). The report quantified statewide needs against projected funding for the 10-year period 2011-2020.

The report estimates that the California transportation system has only about 43 percent of funding capacity for system preservation over the next 10 years and only 48 percent of funding for system management and expansion. This amounts to a roughly $295.7 billion funding gap for the system over the next 10 years at an average annual shortfall of almost $30 billion. Caltrans continues to work with all relevant stakeholders to meet California’s mobility needs while faced with an aging system and ongoing funding shortfalls.

The identified needs cover the full realm of transportation categories: highways, local roads, public transit (excluding California’s High-Speed Rail), intercity rail, freight rail, seaports, airports, land ports, intermodal facilities, bike/pedestrian. This was done without respect to facility owner/prospective project sponsor. However, Caltrans is the owner/operator of the first item—state highways—and has a significant interest in the other categories.
Not surprisingly, the state highway system is near the top of the list in terms of need and cost, expecting to require $166 billion over the 10-year period. The amount is split between Preservation (Rehabilitation and Maintenance), which is circled in the chart above, and System Increases (Management and Expansion).

Failing to provide infrastructure preservation during the appropriate life-cycle stage can result in triple the eventual repair costs, dealing with preservation shortfalls has an exponential fiscal impact (the less you do today, the more it will cost you tomorrow). Not making System Management investments causes less than optimal use of the transportation facilities and lack of System Expansion investment creates increasing economic loss due to congestion and safety issues.

The downturn in the Capital Outlay program will drive a significant reduction in Caltrans Capital Outlay Support staffing in the next five years, additionally impacting the level of support functions such as Administration, Accounting, and Information Technology. Also, the reduction in funding for the SHOPP will drive a continuing gap between state highway pavement needs and funding, as more pavement and other facility preservation is deferred.
Appendix C (page 5 of 6)

Regular condition surveys evaluate the status of the state highway system, bridges and appurtenances. Based on the current condition and the cost it would take to bring to a state of good repair, Caltrans is only able to fund 27 percent of the needs (see Chart 4). The implication of this deferral is future cost escalation since pavements and bridges deteriorate at an accelerated rate when they do not receive timely preventative maintenance.

![Chart 4](image)

<table>
<thead>
<tr>
<th>SHOPP Needs and Funding</th>
<th>Estimated Annual Need ($ in Millions)</th>
<th>Estimated Funds Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Damage Restoration</td>
<td>$346</td>
<td>100%</td>
</tr>
<tr>
<td>Collision Reduction</td>
<td>$517</td>
<td>73%</td>
</tr>
<tr>
<td>Mandates *</td>
<td>$682</td>
<td>27%</td>
</tr>
<tr>
<td>Mobility Improvements</td>
<td>$381</td>
<td>18%</td>
</tr>
<tr>
<td>Minor Program</td>
<td>$150</td>
<td>100%</td>
</tr>
<tr>
<td>Bridge</td>
<td>$1,186</td>
<td>30%</td>
</tr>
<tr>
<td>Roadway</td>
<td>$3,318</td>
<td>13%</td>
</tr>
<tr>
<td>Roadside</td>
<td>$484</td>
<td>3%</td>
</tr>
<tr>
<td>Facilities Improvements</td>
<td>$167</td>
<td>4%</td>
</tr>
<tr>
<td>Total</td>
<td>$7,231</td>
<td>27%</td>
</tr>
</tbody>
</table>

* Includes estimated costs of new statewide stormwater Permit

In 1920, the population of California was 3.4 million. Some 90 years later (2010), the state had grown to 37.2 million and had become the most populated state in the nation. By 2030, the state's population is forecast to grow by an additional 9.3 million residents—all looking to live, work and play in our great state. The state's population, increasing at a rate of more than 600,000 each year, is projected to double by the year 2040. The current system is inadequate in many respects to meet all mobility needs today. Given the current trends, it is expected that without an effective intervention, capacity will be eroded rapidly as the population grows and the number of vehicle-miles-travelled grows at an increasing rate. All portions of the multi-modal statewide system are aging and are approaching, or in many instances are beyond, their useful life. This base system requires significant investments for rehabilitation of state highways, bridges, bus fleets, rail cars and tracks, seaports, and airport facilities.

Along with the projected increase in demand, one of our most pressing transportation needs involves truck traffic. The Office of Freight Management at the Federal Highway Administration estimates that the amount of freight moved on California highways will increase from 971 million tons in 2002 to 2,179 million tons in 2035, an increase of more than 100 percent. This increase in the movement of goods will create more truck traffic, and much of this increase will occur in and around urban areas and on the 50-year-old interstate highway system. Truck traffic exacts a greater toll on pavement and bridges than lighter weight vehicles, so an increasing truck volume will exacerbate the deterioration of the transportation infrastructure.
**Performance Measure Trends**

Caltrans statutory requirements will continue to drive its stated mission of “improving mobility across California.” This is not expected to change in the future, rather how we achieve that mission will continue to evolve in the future. In addition to condition data which highlights priorities for preserving the State’s transportation infrastructure, we are directed in the future by the trends of some of the Department’s key performance measure—especially those that are indicators of Caltrans strategic goals of safety and mobility.

Caltrans measures the fatalities per 100 million vehicle miles traveled on the State Highway System. Since 2000, that rate has been reduced by over 30 percent—from 1.05 to 0.64 (see Chart 5). This improvement translates to more than 400 fewer fatalities, an important improvement.

![Chart 5](image)

While this is a successful performance trend for Caltrans’ safety initiative, it will never be an area we will stop endeavoring to improve upon. A critical safety issue is Worker Safety. Since 2000, we have only had 2 calendar years without any Caltrans work-related fatalities. The majority of the deaths have been due to errant drivers, which challenge our ability to improve this statistic, but nonetheless, it is a high priority for Caltrans.

The mobility goal performance data continue to reflect the results of increased travel miles on approximately the same amount of lane-miles on the State Highway System. While two important measures, Performance Measure (PM) 2.1a “Statewide Daily Vehicle Hours of Delay” and PM 2.2b “Percent of major incidents cleared in less than 90 minutes” show either improved or stable trends, both are important areas for continued focus, given the impact congestion has on the economy. This puts a future emphasis on the importance for operational efficiencies in managing the transportation flows, and in local and regional partnership, who share the impacts of congestion and incident response.
Plan for the Future

Relevant Web Links

Caltrans 2012 Program Review

2012 Caltrans Survey of Regional and Local Transportation Partners

Caltrans Office of Strategic Planning & Performance Management
http://www.dot.ca.gov/perf/

Caltrans California Interregional Blueprint
http://www.dot.ca.gov/hq/tpp/californiainterregionalblueprint/

State Smart Transportation Initiative
http://www.ssti.us/