
BUILDING CALIFORNIA:
INFRASTRUCTURE CHOICES AND STRATEGY



LITTLE HOOVER COMMISSION

January 2010



State of California

LITTLE HOOVER COMMISSION

January 28, 2010

The Honorable Arnold Schwarzenegger
Governor of California

The Honorable Darrell Steinberg
President pro Tempore of the Senate
and members of the Senate

The Honorable Karen Bass
Speaker of the Assembly
and members of the Assembly

The Honorable Dennis Hollingsworth
Senate Minority Leader

The Honorable Sam Blakeslee
Assembly Minority Leader

Dear Governor and Members of the Legislature:

A key component of California's economic health and global competitiveness is the quality of its infrastructure. Despite a surge in bond-funded projects over the past decade, California's deteriorating roads slow goods movement, congestion on urban freeways increases pollution while wasting fuel and time, and much of the state's rich agricultural bounty and drinking water to 23 million residents is dependent on century-old levees built on peat soil. California's investments in infrastructure lack an integrated strategy and adequate oversight and have relied too heavily on general obligation bonds.

The state entered 2010 with double-digit unemployment and is still in the grip of the worst recession since the Great Depression. If California is to emerge from the recession more economically competitive, state leaders must develop an infrastructure strategic plan that prioritizes the state's most pressing needs and identifies new ways to pay for the billions of dollars of infrastructure the state will need.

This plan must integrate the state's existing strategy for reducing greenhouse gas emissions and improving sustainable development. A smart infrastructure strategy can help the state meet its environmental goals as well as foster a healthy economy. Likewise, the transformation envisioned by AB 32 and SB 375 only can be achieved with a growing economy, one supported by strategic infrastructure investments.

The state currently lacks such a plan, though Governor Schwarzenegger has made considerable progress in this direction in developing strategic growth plans. What government-wide planning exists – collated in the administration's annual Five-Year Infrastructure Plan – is segmented by department without a view to overarching goals or a ranking of projects by relative need or the value they would deliver economically or environmentally. Though the plan is delivered to the Legislature, lawmakers have yet to engage the administration in a discussion about which projects are most important or how California can use existing state assets more efficiently.

This discussion must start now, and it must address how the state pays for infrastructure. Over the past decade, the state has relied increasingly on general obligation bonds to finance infrastructure projects, a type of borrowing that must be repaid by the General Fund. The steep downturn in General Fund revenues precipitated by the recession revealed how growing debt service can force difficult budget choices. Further borrowing through general obligation bonds, given the outlook for continued budget deficits, will mean more difficult trade-offs.

Simple arithmetic suggests that the state budget will not support the amount of borrowing that would be required to meet the estimated \$500 billion California needs to build new and replace worn-out infrastructure. With the passage in 2009 of legislation enabling the state to pursue public-private partnerships, the state has the opportunity to reevaluate the way it provides and delivers public projects and services and whether these projects should use a public-private model. With this, the state has options, including user fees or special taxes such as the state's fuel taxes. Increased reliance on such revenue sources has been politically unpalatable in recent years, but must be re-considered in light of the need to invest in projects for immediate and long-term growth as well as the true cost of general obligation borrowing.

Fortunately, California can learn from two pioneering projects already in place in the state, State Routes 91 and 125 in Southern California, as well as the collective experience of other states and countries gained in the years since California last experimented with innovative public-private partnerships. Such arrangements can be a valuable tool for policy-makers, allowing the state to pursue projects that otherwise could not be completed. Where they have been successful, they have influenced how governments provide infrastructure, even when they represent only a small portion of the projects a government undertakes.

One strategy that can help the state meet its goals is demand management, which uses incentives such as tolls and user fees to encourage people to make more efficient choices, helping states avoid the cost of creating more infrastructure, while helping the state meet its environmental goals. Such a strategy includes congestion pricing, already used on Interstate 15 in San Diego County and in cities in Europe and Asia, which can achieve both improved mobility and air quality while generating revenue that can be directed to related services, such as public transit.

The state is fortunate to have the benefit of a group of experts gathered as the Public Infrastructure Advisory Commission, which is developing recommendations on transportation projects suitable for public-private partnerships. The group's debates are surfacing issues that policy-makers will need to resolve as California again explores public-private partnerships, issues described in this report. Though the state enjoys the skills of highly qualified planners and engineers, it will need to develop new skill-sets to capture the benefits and minimize the risks presented by public-private partnerships. If it is to pursue such arrangements, the state must have on its team experienced experts who can negotiate on the state's behalf with private-sector groups that have the benefit of decades of deals behind them.

Much has been said about the risk of change, so much that the state instead has pursued an infrastructure investment policy that imperils California's economic health and quality of life. It is time to develop a strategic plan to rebuild and expand the state's infrastructure and develop better and more sustainable ways to provide for it.

Sincerely,

A handwritten signature in black ink, appearing to read "Daniel W. Hancock", written in a cursive style.

Daniel W. Hancock
Chairman

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Executive Summary

The decisions California's leaders make now in how the state invests in its infrastructure can help California and its people recover from the worst recession since the Great Depression and lay a foundation for a competitive, world-class economy for decades to come.

The way California currently spends its infrastructure dollars lacks a long-term vision and a systematic process for prioritizing projects. The administration and the Legislature have not adequately coordinated departments' activities and their dozens of programs. With the current fiscal crisis only deepening, California's pattern of borrowing money through general obligation bonds and repaying debt through the General Fund to pay for infrastructure investments will force further spending cuts in healthcare, social services, education and public safety programs. To deliver on its golden promise, California must think harder and spend smarter on the roads, bridges, levees, schools, prisons and canals it builds. And it must take better care of its assets so that they continue to serve the Californians of tomorrow.

California once relied on a pay-as-you go method for funding road maintenance and new freeways, using gasoline taxes and sales tax on fuel, the kind of fees and special taxes that force users of the system to make efficient choices. And the people who benefitted directly from freeways helped pay for them. But at 18 cents a gallon, the gas tax no longer keeps up with the cost of maintenance; sales tax revenues on gasoline have been borrowed to bolster the General Fund. While gas tax revenues indeed have increased – by 21 percent – between 1994 and 2008, California highway construction costs rose 200 percent during the same period. Additional sources of revenue are one part of the solution; just as essential are new strategies that ensure greater value for the money invested in a new project and new technologies to manage infrastructure demand.

Despite the increases in infrastructure spending under Governor Davis and Governor Schwarzenegger, the state is still dependent upon infrastructure systems designed in a different time with different technologies. Our immense water system was built when California's population was 14 million, not 38.5 million and growing. Our prison system was built for far fewer than the numbers it holds now. Our

freeway system, the envy of the nation when it opened, was not designed for the volume of vehicles it now carries nor was it intended to supplant the rail system for moving cargo from ports to inland cities.

Our freeway system alone is estimated to be worth \$300 billion. But at any one time, 27 percent of it is wearing out, as the state budgets only about a quarter of the estimated \$6.2 billion in maintenance the system needs each year. Californians are using the system ever more intensely; vehicle miles travelled in the state, estimated at 164 million in 2000, are expected to increase to 207 million in 2010. With this greater volume comes greater delay, giving California the dubious honor of being home to six of the most congested metropolitan regions of the nation's top 25.

The state estimates that in order to have the infrastructure needed to support a thriving, sustainable, competitive economy, California will have to invest \$500 billion over the next two decades. The way the state currently funds its infrastructure spending cannot possibly pay for this level of investment.

Providing infrastructure that can deliver government services to support economic growth and California's quality of life is an essential role of government. How should California reconcile the need, the obligation and the funding?

Vision and Strategy

The first answer is to develop a strategy for statewide infrastructure investment that develops a vision for the kind of state that Californians want in the future; identifies needs across the different roles of government and prioritizes these needs according to where an investment can deliver the greatest value.

This will require considerable re-thinking of how the state delivers such public goods as education, transportation, clean water, public safety and public health. The process will require regular and deep engagement with the Legislature. A first step will require a re-orientation toward delivering services in a way that improves outcomes, such as greater educational attainment or improved mobility – a shift from the current model that emphasizes increasing inputs, such as new classrooms or more freeway lanes, which may not deliver the desired outcomes.

Governor Davis made a laudable start in this direction with the Commission on Building for the 21st Century, which produced important recommendations. The Legislature followed by requiring the administration to produce an annual Five-Year Infrastructure Plan for

the state. Governor Schwarzenegger expanded on these efforts with two Strategic Growth Plans. They have been important initiatives, though not enough. The projects in the five-year plan are not coordinated or prioritized. Most embody old technology and a focus on inputs, not outcomes. Worse, the Legislature never engaged the administration on the report, its plans or its ideas.

California's leaders have shown themselves capable of launching hugely ambitious programs to meet daunting challenges. Cooperation between the governor and the Legislature created California's policy to reduce greenhouse gas emissions that has made the state a worldwide leader on this issue. One result was the creation of the Strategic Growth Council, made up of key members of the governor's cabinet. Given its facilitative and planning role, this is an appropriate place to develop the state's infrastructure strategy and this strategy should be integrated into California's strategy for achieving the goals of reducing greenhouse gas emissions and more sustainable urban growth. Such a strategy must recognize the role infrastructure can have in enhancing the state's economy, and a strong economy must be recognized as essential to the transformation envisioned by AB 32 and SB 375, the legislation that codifies policy-makers' goals to reduce greenhouse gas emissions and promote sustainable growth.

In evaluating how California can deliver services by outcomes, the state must free itself from thinking solely in terms of increasing supply to meet ever-growing demand. One avenue is to develop strategies that encourage people to use a service more efficiently, or use less of it, allowing the state to avoid building more. This strategy, known as demand management, has been put to great use by utilities in California and the United States as well as by cities and countries around the world.

California's overreliance on general obligation debt for infrastructure spending has obscured the reality that all costs for projects ultimately must be repaid. More borrowing adds to the level of annual debt service paid out of the General Fund. State Treasurer Bill Lockyer, in the Office of the Treasurer's annual Debt Affordability Report, issued in October 2009, estimated that debt service outlays would surpass 10 percent of the General Fund budget in the 2013-14 budget if already authorized bonds were sold in the market and the state were able to sell as-yet unauthorized bonds envisioned by the governor's second Strategic Growth Plan. In testimony to the Legislature in December 2009, the treasurer noted that if the proposed water bonds were approved and issued, debt service outlays would reach an estimated 10.98 percent of the General Fund budget in Fiscal Year 2013-14. Given the state's steep drop in revenues over the past two years and the Department of

Finance's projection of three more years of structural budget deficits, more borrowing will mean more spending cuts to programs. Prioritizing infrastructure over programs is a policy choice, and one the Legislature may want to make, but it is a choice that must be made explicitly and not by default.

The state's increasing use of general obligation bonds has contributed to the habitual under-budgeting for maintenance of parks, prisons, roads and levees, as bond measures typically authorize spending for construction costs, but leave unsaid how the state will pay to maintain and operate a project afterward. A policy of chronic deferred maintenance results in higher costs for repair and reconstruction; its short term benefits come at the expense of the taxpayer and those who must endure deteriorating highways, schools and water systems. In developing a strategic plan for infrastructure, the state must not only identify and prioritize infrastructure needs, but calculate as well the true cost of projects to be created to address these needs.

Need To Look Past Borrowing to New Revenue Sources

Absent higher taxes or greater general obligation bond borrowing, California will need to find other sources of money to build new freeways, dams and university classrooms. Though the state benefitted from federal stimulus money in 2009, it is unrealistic to believe this could be a substantial source of money in the future to support sustained infrastructure investment.

The state's strategy should identify the source of revenues that will be used to repay financing costs of construction, as well as operating and maintenance costs, and as part of this process, identify which projects are best suited to the use of user fees or special taxes. General obligation bonds should be reserved for infrastructure needs that lack a source of repayment or where equity or a broad public good, such as education or public health, is a consideration.

Economists and public finance experts point to user fees as a source of revenue that directly links the benefits of using a public service and the cost of providing it. Moreover, user fees can be enlisted in demand management approaches, such as congestion pricing on freeways or block pricing for water. Designed properly, such strategies can help government meet several goals at once. Tolls for single passenger car use of high occupancy vehicle lanes can increase revenue, improve mobility and reduce air pollution, as can time-of-day pricing of tolls for

entering central city districts, as seen in Singapore, London, Milan and Stockholm.

California pioneered demand management in the United States with congestion pricing on State Route 91 Express Lanes in Orange County, the nation's first toll road with no toll booths. This system, along with State Route 125, Interstate 15 in San Diego County and the San Francisco Bay Area bridges, use the FasTrak transponder system to electronically collect tolls. I-15 uses data from the transponders to assess traffic congestion, feeding the data into a dynamic electronic pricing system that can change tolls every two minutes to reflect changes in demand. All are examples of how technology can aid, and propel, new ways of managing infrastructure to lower costs and improve quality.

California needs a strategy and vision for its infrastructure future, and it needs new sources of revenues to pay for it. It also needs more choices in how it can deliver projects. SB 4 X2, legislation enacted as part of the February 2009 budget package, has opened up this opportunity by allowing an unlimited amount of projects to be delivered through public-private partnerships through 2017.

The term "public-private partnerships" covers a broad range of relationships, most of which represent greater private sector involvement than the state has regularly employed. California had an early lead in this area in 1989, when it passed AB 680, which allowed four such projects, of which State Route 91 and State Route 125 were the only two built. The practice, widely used in Australia, Spain, Italy, the United Kingdom and Canada, has been controversial in the United States, mainly because of fear that private profit can come only at the taxpayer's expense.

Though public-private partnerships can be used to help finance a project, their main benefits are in speeding delivery, saving money by combining the design and building processes, introducing new technology and management models, and by maintaining the condition of a project over the life of the contract or lease.

Experts from governments that have engaged in public-private partnerships said that such arrangements rarely account for more than 15 percent of the infrastructure projects undertaken by the government. But the approach can have wide influence simply by challenging conventional thinking, introducing competition and opening up options for projects that the state may otherwise not be able to build. If SB 4 X2 has presented California with an opportunity, it also has created an important test for the state.

The inclusion of public-private partnerships as an option requires a sophisticated skill set for state government managers engaged in such deals, and will require new ways of thinking about project delivery, its benefits, risks and its costs. A major benefit of such partnerships is that expectations of performance, deadlines, costs and benefits all can be laid out in a contract. Such contracts also are an excellent vehicle to assign various risks involved in projects to the party best able to handle them. In this way, the state can take on the risk of delay for environmental review while the private sector party could take on the risk of sharp increases in construction materials.

California has experienced financial professionals and highly qualified engineers who can help work through many of the issues and choose the best options for projects.

But identifying, assessing and assigning risks – set forth in the contract – is a new skill set for most government agencies, making the contract a major source of risk in itself. The state should take advantage of the expertise it has in state service and augment its team with expert, experienced negotiators to handle contract negotiations until it can develop a center of excellence that can handle these sophisticated tasks on a centralized basis for all departments pursuing infrastructure projects through public-private partnerships.

California has no shortage of energy or innovators. Or opportunity. Already, the staff at Caltrans and at the California Transportation Commission are quickly learning new approaches and business practices to take advantage of the options presented to them through public-private partnerships. They are asking for the tools to help them try new approaches.

California's leaders need to give them those tools as well as a vision and strategy for how the state will meet its infrastructure challenges to create a strong and sustainable economy. California's leaders must find new ways to pay for infrastructure to ensure the next generations will not bear the cost for the public benefits consumed by this generation. And they must insist on ensuring that Californians benefit from the innovations that have improved public services around the world.

Recommendation 1: The governor and Legislature should conduct statewide infrastructure strategic planning and needs prioritization that assesses needs across state operations and sets an infrastructure vision for California that gives equal priority to both environmental and economic growth goals.

- The Legislature should expand the role of the Strategic Growth Council beyond its current coordination of state policies and activities for green house gas reduction and sustainable regional planning to include infrastructure planning that supports both economic growth and the state’s environmental goals.
 - ✓ The Strategic Growth Council should synthesize the information received from agencies and departments to create an integrated and overarching infrastructure strategic plan that sets a broad vision for California’s future, benchmarks for implementation and measurable goals toward progress. This plan should replace the current five-year infrastructure plan.
 - ✓ Building on the state’s current five-year infrastructure planning process, the infrastructure strategic plan must integrate and prioritize projects by how they can support economic growth and meet state goals for reducing greenhouse gas emissions and urban sprawl. There must be a rational and transparent process for identifying and prioritizing the most urgent needs. Resource limitations mean that choices must be made among competing goals. The Strategic Growth Council must recognize that such choices must be made, with emphasis on long-term goals, return on the investment of limited dollars, as well as other fiscal constraints. The plan should include recommendations for financing as well as alternative strategies that can achieve the same goals, such as demand management.
 - ✓ The council’s charge should be made explicit in recognizing that the state cannot meet its ambitious environmental goals without the support of a vibrant economy that can generate the wealth needed to fund such a transformation.
 - ✓ The governor should require state agencies and departments to report to the Strategic Growth Council with their assessments of infrastructure needs and developing trends; infrastructure priorities; ways the department is or could be maximizing existing resources; and suggestions for policy, financing, and technological changes that could help deliver the projects more efficiently.

- ✓ The infrastructure strategic plan should include recommendations for legislation, state agency actions and budget changes needed to implement the chosen priorities and should be submitted to the Legislature biennially in January, at the beginning of each two-year legislative session.
- ✓ The Strategic Growth Council should be expanded beyond its current membership to include other state agency leaders with significant involvement in infrastructure development. Currently, the council includes the following members:
 - Director of the Office of Planning and Research, Chair.
 - Secretary of the Business, Transportation and Housing Agency.
 - Secretary of the Environmental Protection Agency.
 - Secretary of the Health and Human Services Agency.
 - Secretary of the Resources Agency.
 - One public member appointed by the governor.

The following members should be added to the council:

- Director of the Department of Finance.
 - Secretary of the State and Consumer Services Agency (which houses the Department of General Services).
 - Secretary of the Labor and Workforce Development Agency.
- State agencies should consult local and regional entities in their respective areas to assess local needs and priorities, and catalog these needs so that they can be prioritized by the governor, the Strategic Growth Council and the Legislature.
 - Each house of the Legislature should establish an infrastructure planning committee to review the Strategic Growth Council's infrastructure strategic plan and provide a forum for dialogue with state and local infrastructure partners through legislative hearings. The Legislature should respond to the strategic plan through its legislative and budget processes. The governor and Legislature should align program funding to incentivize state goals set in the infrastructure strategic plan.

- ❑ The Legislature and relevant state agencies should work to streamline funding for local infrastructure development, whether from state or federal sources, in order to eliminate duplication, facilitate project delivery and ensure that money can be used for project costs rather than compliance costs.

Recommendation 2: The governor and Legislature should restructure the processes for planning for and meeting the state’s infrastructure needs to reflect the true costs of infrastructure projects and the need to explore alternatives to General Fund revenues to repay money borrowed to finance projects.

- ❑ The state should expand its options to generate revenues to repay project financing costs, such as user fees or special taxes, and ensure such revenues are dedicated to the purpose defined in the infrastructure strategic plan and not redirected to other parts of the budget.
 - ✓ In planning for new infrastructure projects, the state should adopt a life-cycle cost approach to provide a more complete estimate of a project’s total cost, taking into account all costs of building, maintaining, operating and owning the infrastructure over the projected life of the asset.
- ❑ The governor and Legislature should incorporate demand management strategies and approaches such as joint-use arrangements to make better use of existing infrastructure assets and reduce the need to build new infrastructure.

Recommendation 3: The state should increase its capacity for creating public-private partnerships at the state and local levels to increase efficiency, reduce costs and speed delivery of projects where such an approach is appropriate. Such partnerships may include the use of private financing in cases where it can reduce a project’s overall cost or reduce risk to the state.

- ❑ The state should partner with private entities where doing so would benefit the state through reduced costs and delivery time and improved project quality and performance; the governor and Legislature should set broad goals for such partnerships, then provide the authority for state and local agencies to enter into partnerships.
- ❑ In implementing SB 4 X2 and creating the Public Infrastructure Advisory Commission, the state should do the following to maximize the likelihood that its initial public-private partnership results are successful:

- ✓ Retain experienced professionals to represent the state on any public-private partnership deal in order to fairly negotiate vis-à-vis the private sector.
 - ✓ Conduct a value-for-money analysis of each project in order to determine whether the project should be done as a public-private partnership.
 - ✓ Delineate the risks borne by each partner and how the state has shifted risk to its private sector partner where appropriate.
 - ✓ Utilize performance measurements that will allow evaluation of the results of each project.
 - ✓ Calculate infrastructure costs for all projects, whether by public-private partnership or otherwise, over the life-cycle of the asset, taking into account all costs of building, maintaining, operating and owning the infrastructure over the projected life of the asset.
- Ultimately, the governor and Legislature should create a statewide center of excellence to both advise and represent state and local agencies that seek to enter into public-private partnerships.
- ✓ The center should be able to provide all public-private partnership expertise – from assistance with deciding whether a public-private partnership is appropriate to implementing and managing the public-private partnership agreement – for a state or local government entity and should be able to charge the entity a reasonable fee for its service.
 - ✓ The center should have the ability and resources to compete with the private sector for experts to represent the state in its transactions with the private sector, and it should follow all of the above recommendations regarding public-private partnership projects.

Introduction

California voters in 2006 passed \$43 billion in general obligation bond measures to pay for transportation, education, housing, water, and natural resource infrastructure – California’s single largest infrastructure investment financed with long-term bonds. Two years later, voters approved another \$11 billion for high speed rail and children’s hospitals.

Given the magnitude of funds authorized for spending, the Commission in 2008 was concerned about how bond money would be managed and spent, as well as whether general obligation bond financing was the best approach for funding infrastructure. In its June 2009 report, *Bond Spending: Expanding and Enhancing Oversight*, the Commission reviewed how effectively and efficiently the state spends bond money, and recommended actions to improve oversight, accountability, and transparency of bond spending programs.

Shortly after the bond spending study began, the Commission decided to take a broader look at the use of general obligation bonds to finance infrastructure as well as how California otherwise can and should pay for and deliver its infrastructure. The Commission initiated this study in early 2009 to review how the state develops its infrastructure, from the planning and financing to the delivery and ongoing maintenance of the asset. The Commission sought to investigate the state’s existing

Commission Reviewed Bond Spending

The Commission, in its June 2009 report titled *Bond Spending: Expanding and Enhancing Oversight*, included the following recommendations:

Recommendation 1: The Legislature and state government entities administering bond programs must improve oversight to ensure bond money is spent efficiently and effectively and as voters intended. Specifically, both houses of the Legislature should establish a bond oversight committee to review performance and independent financial audits of bond-funded programs and annual reports statutorily required of bond-administering agencies.

Recommendation 2: The state should reconstitute the California Water Commission as the California Natural Resources Commission and charge it with prioritizing and overseeing bond-funded programs currently managed within the California Natural Resources Agency. Specifically, the California Natural Resources Commission should develop an overarching plan for funding state natural resources programs, address cross-cutting issues within the bond-funded programs to ensure all government entities work in concert and not at cross purposes, and allocate bond money authorized for natural resource projects and programs.

Recommendation 3: To improve transparency and clarity for voters, the state must establish fundamental criteria for ballot measures and these criteria should be evaluated and included as a simple and easy-to-understand report card in the voter guide for all bond measures placed on the ballot.

Recommendation 4: To improve local oversight of school and community college school facility construction projects passed under the reduced threshold established by Proposition 39, the state should bolster the capabilities of local bond oversight committees.

The June 2009 report can be accessed on the Commission’s Web site at: www.lhc.ca.gov.

process for developing infrastructure and to make recommendations – based on new technology and strides made in other states and countries – to the governor and Legislature to improve the way it uses existing resources and builds new state assets.

Such a review touches agencies and departments throughout state government and spreads from local government, businesses and non-profits to federal agencies and funding sources. Given the expansive reach of players, organizations and issue areas that both affect and rely on infrastructure, the Commission chose to look broadly at infrastructure planning and financing across the state while also taking a deeper look into the application of state infrastructure decisions and innovations in the transportation sector.

The study began with an initial subcommittee meeting in January 2009 to receive direction from experts on the major policy and finance issues surrounding the development of California’s infrastructure. Discussion at the meeting revealed the need to examine how the state plans and funds infrastructure projects and how the state could maximize the value of existing resources, including strategies to better manage demand. Participants included representatives from the Public Policy Institute of California, U.C. Berkeley Institute of Urban and Regional Development, Keston Institute for Public Finance and Infrastructure Policy at the University of Southern California, Stanford Collaboratory for Research on Global Projects, California State Treasurer’s Office, Blue Sky Consulting, New America Foundation and CalPERS.

The Commission’s first infrastructure hearing in February 2009 provided an introduction to problems with the current process of infrastructure development, the interests of different parties who have a stake in any potential policy change, current efforts by the governor’s administration to improve delivery of projects and a sampling of potential reforms that should be considered.

The Commission explored alternative ways of paying for and delivering infrastructure at its hearing in March 2009. Witnesses shared their expertise about possible tools that would help California make smart investment choices about how to fund, deliver and manage new and existing resources. These alternatives included innovative financing and delivery methods such as private financing or delivery through public-private partnerships, revenue-generating options and demand management techniques.

As most of California’s infrastructure is provided by local spending, the Commission’s infrastructure subcommittee traveled to Los Angeles in May 2009 to meet with local transportation planners and stakeholders.

Local representatives discussed state-imposed rules and restrictions on contracting for construction and services, local taxing, environmental protection, and using state and federal funding.

Later in May, the Commission held a third infrastructure hearing focused on how state policy-makers and administrators are providing leadership on infrastructure. The Commission heard from Senate and Assembly transportation committee leaders about the role of the Legislature in setting an overarching statewide infrastructure strategy. The director of the California Department of Transportation discussed statewide transportation planning and coordination with local jurisdictions, and the policy director of the Institute of Transportation Studies at U.C. Davis, who also serves on the Air Resources Board, shared his expertise on planning for AB 32 and SB 375.

The Commission's final gathering on infrastructure occurred in June 2009 at an advisory committee meeting to hear from the chief executive officers of two Canadian public-private partnership centers of excellence. These experts shared their experiences working on public-private partnerships and offered advice on how California might capitalize on its opportunity, through recent P3-authorizing legislation and beyond, to benefit from these arrangements. The subcommittee was also joined by key individuals working to implement recent public-private partnership legislation in California including Dale Bonner, Secretary of the Business, Transportation and Housing Agency and Bimla Rhinehart, Executive Director of the California Transportation Commission.

Participants who engaged in each of the Commission's hearings and meetings are listed in Appendix A and B.

Commission staff received valuable feedback from a number of experts, through meetings as well as one-on-one interviews, who offered various perspectives on California's infrastructure development. Staff also observed meetings held by other organizations including the Strategic Growth Council, the Public Infrastructure Advisory Commission and the Keston Institute for Public Finance and Infrastructure Policy at the University of Southern California. The Commission greatly benefited from the contributions of all who shared their expertise, but the findings and recommendations in this report are the Commission's own.

This report, and all written testimony submitted electronically for each of the hearings, is available online at the Commission Web site, www.lhc.ca.gov.

California Infrastructure Policy and Finance

California's population, now nearly 38.5 million people, increased by 10 million people from 1985 to 2005, and is projected to grow by another 7 to 11 million by 2025.¹ Population growth is the key driver of increased demand for infrastructure, as are changes in the economy.² Obsolescence also is a factor, as roads, bridges, dams, levees and schools built decades ago reach the end of their life span, in some cases earlier than expected because of habitual underfunding for maintenance. How California will support the growing number of people living in the state with its existing physical network of assets to deliver services and move people, goods, energy, water, information and communications is one of the most significant challenges policy-makers face today.

California entered 2010 in the grip of its worst economic downturn since the Great Depression. Job losses fueled by steep cutbacks in construction and related real estate services, as well as the financial sector, pushed the state's 2009 unemployment rate above 12 percent. Plunging state revenues forced billions of dollars of spending reductions. These cuts have been only partially offset by federal stimulus funding through the American Recovery and Reinvestment Act of 2009, which aimed to boost employment and direct money toward renewing the nation's infrastructure base. If creating jobs is important to economic recovery, a strong infrastructure foundation is critical to sustained economic health, from the freeways that connect the state's cities to each other as well as its ports to customers in California and beyond, to the State Water Project that delivers water to San Joaquin Valley farmers and 23 million people in Southern California's cities.

Significant systematic investment in infrastructure, both to maintain existing resources and to build new assets, is needed to ensure economic vitality and high quality of life in California. Governor Schwarzenegger's administration estimates California's infrastructure needs at the state level at \$500 billion over the next 20 years, not including local and regional needs across the state.³ Voters in 2006 approved \$43 billion in general obligation bonds for new infrastructure spending and added nearly \$11 billion in bonding authority in November 2008. Compared to infrastructure investments over the last 50 years, this is a major

“Quality of life and productivity are directly affected by the availability and quality of infrastructure.”

California Commission on Building for the 21st Century. September 2001.

California's Major State Infrastructure Assets

The state's major infrastructure includes capital facilities in a variety of areas such as water resources, transportation, higher education, natural resources, criminal justice, health services and general government office space. In addition to these state investments, the state provides funds for local public infrastructure, including K-12 school and community college construction, local streets and roads, local parks, wastewater treatment, flood control and jails.

Water Resources

- 34 lakes and reservoirs.
- 25 dams.
- 20 pumping plants.
- 4 pumping-generating plants.
- 5 hydro-electric power plants.
- 701 miles of canals and pipelines—State Water Project.
- 1,595 miles of levees and 55 flood control structures in the Central Valley.

Transportation

- 50,000 lane miles of highways and 12,000 bridges.
- 9 toll bridges.
- 11 million square feet of Department of Transportation offices and shops.
- 209 Department of Motor Vehicles offices.
- 141 California Highway Patrol offices.

Higher Education

- 10 University of California campuses.
- 23 California State University campuses.

Natural Resources

- 287 parks containing 1.5 million acres and 4,000 miles of trails.
- 228 forest fire stations, 39 conservation camps and 13 air attack bases.
- 16 agricultural inspection stations.

Criminal Justice

- 33 prisons and 43 correctional conservation camps.
- 7 youth offender institutions.
- 11 crime laboratories.

Health Services

- 5 mental health hospitals (more than 4 million square feet of facilities and 2,300 acres).
- 5 developmental centers (more than 5 million square feet of facilities and 2,000 acres).
- 2 public health laboratory facilities.

General State Office Space

- 8.5 million square feet of state-owned office space.
- 16.6 million square feet of leased office space.

Source: Elizabeth Hill. Legislative Analyst. January 2006. "A Primer: The State's Infrastructure and the Use of Bonds."

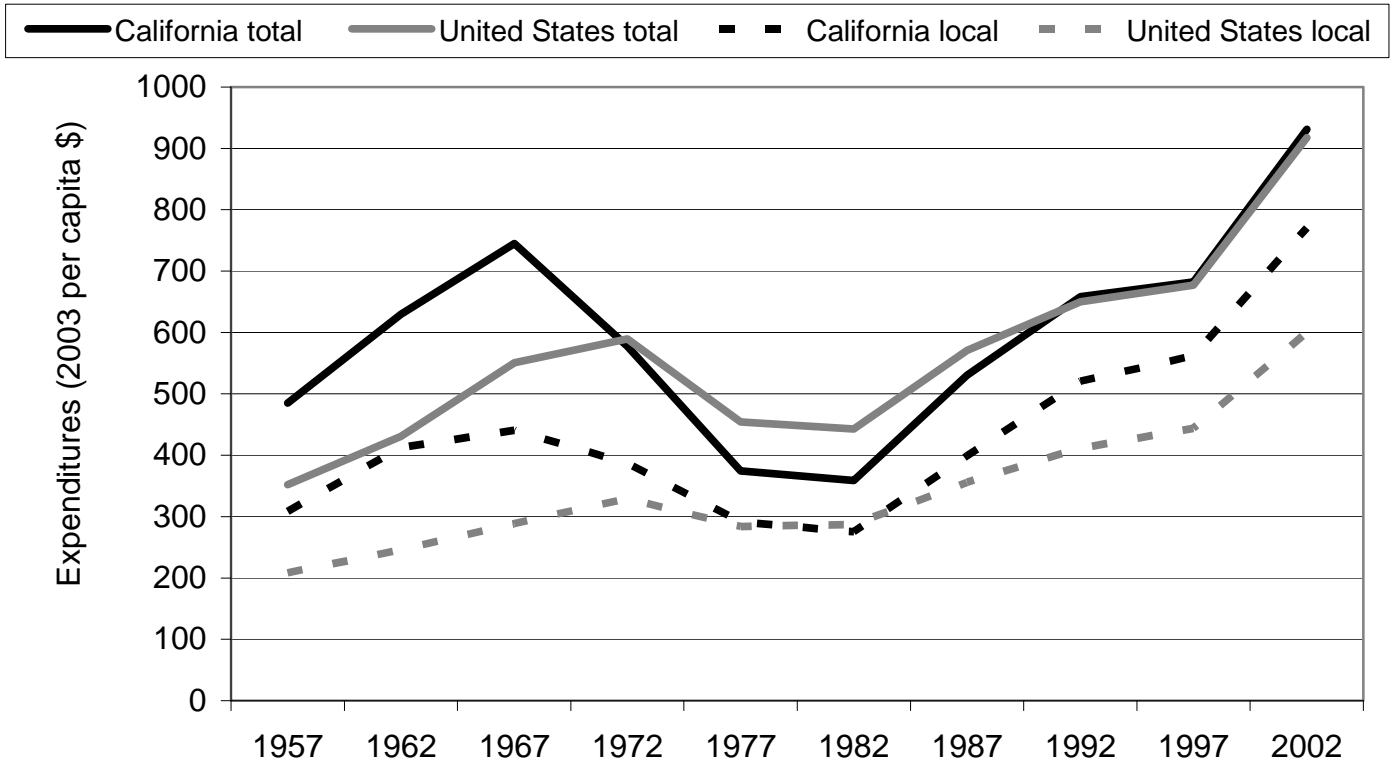
injection of money for specific infrastructure projects. Unfortunately, the total of \$54 billion, characterized by the governor as a "down payment," falls short of the projected need over the next two decades and may not be directed to the highest priorities for California.

How the state provides infrastructure – the way it plans, pays for, delivers, maintains and maximizes these valuable assets – is a key question facing California as it stands at the crossroads of enormous infrastructure needs and challenging economic times. To help answer this question, this chapter reviews the state's existing approach to infrastructure development and briefly identifies areas – to be discussed further in the following chapters – where other states and countries have forged ahead in finding new ways to provide the infrastructure essential for a thriving community.

California's History of Infrastructure Investments

California's investment in its network of infrastructure assets has fluctuated over the past half-century according to changes in public attitudes, revenue availability and population demands. Spending on infrastructure peaked in the late 1950s and 1960s during Governor Pat Brown's administration and a period of time marked by increased federal spending, bipartisan support for infrastructure and a rise in tax revenues. Capital expenditures then declined below 1957 spending levels in the late 1970s and has increased steadily since.

State and Local Capital Outlay Expenditures 1957 – 2002



Source: Ellen Hanak and Mark Baldassare. Public Policy Institute of California. 2005. "California 2025: Taking on the Future." Citing U.S. Census Bureau (1957-2002a) and California State Controller (2001-02).

This variation in spending over the years is consistent with capital outlay expenditure patterns for the United States as a whole, though California's spending behavior was more pronounced, with higher peaks and lower valleys.⁴

Infrastructure spending, particularly through the passage of bond measures, has increased significantly in the last few years under Governor Schwarzenegger's renewed focus on infrastructure investment, which raised per capita state capital outlays above pre-1960 levels. The bond package that voters approved in 2006 designated \$19.9 billion for transportation, \$2.9 billion for housing, \$10.4 billion for education, \$4.1 billion for flood control, and \$5.4 billion for resources projects. Voters in 2008 approved another \$11 billion in bonds – nearly \$10 billion for high speed rail and roughly \$1 billion for children's hospitals. In the period from 1970 to 2004, voters authorized 69 bond measures for \$79 billion for infrastructure projects, an amount that would be far higher in inflation adjusted dollars.⁵

Planning for Infrastructure

Infrastructure investments in California traditionally have been made by appropriation of the Legislature or by approval of the voters in a piecemeal fashion. Projects are identified by program areas within state agencies or by local entities wanting to develop or update local infrastructure with the help of the state. The governor's administration has estimated the total cost of outstanding infrastructure needs, but neither the governor nor the legislature plans infrastructure development on a statewide level. Though some efforts have been made by the governor and Legislature over the years to conduct broader state planning of infrastructure, particularly around environmental goals, none have resulted in an ongoing statewide strategy or holistic infrastructure development planning process.

State Development Plan

The Legislature in 1959 passed SB 597 to require the governor to prepare a State Development Plan to serve as a "long-range comprehensive guide to the future physical development of California."⁶ Governor Reagan's administration began working on the plan in 1962 and completed the report in 1968, though the final product was criticized for its lack of specific suggestions and was not taken seriously by the governor or the Legislature.⁷

Environmental Goals and Policy Report

The 1959 legislation also created the state Office of Planning within the Department of Finance. The office was dissolved and replaced in 1970 with the State Policy Development Office, later named the Office of Planning and Research, which reported directly to the governor. The new office was created alongside the Environmental Quality Act of 1970, an acknowledgement by the Legislature that the state lacked environmental goals and needed improved planning at the state level. The office was assigned the responsibility of overseeing environmental policy and reporting to the Legislature on the state of California's environment.⁸

This report is now known as the Environmental Goals and Policy Report, published for the first time in 1973 by the Office of Planning and Research. The report is intended to "articulate the state's policies on growth, development and environmental quality; to recommend specific state, local and private actions needed to carry out these policies; and to serve as the basis for the preparation of the state's functional plans (such as housing, transportation, air and water quality) and for locating major projects such as highways, water projects and university

facilities.”⁹ By design, development of the report required the input of the Legislature, creating at least the opportunity for cooperation and a coordinated approach to implementing environmental policy goals. Details about the report can be found in Appendix C.

The Environmental Goals and Policy Report was partially updated in 1978 by Governor Jerry Brown in response to such problems as high inner-city unemployment, abandoned buildings and inadequate schools. The report sought to identify specific actions the government could take to revitalize urban areas in California, provide new development and protect the environment.¹⁰ After this partial update, the report was not revised again until 2003. It has not been updated by the governor since, nor has the Legislature considered it, despite statutory requirements to do so. Some of the policies discussed in the early versions of the report, however, since have been implemented through other means.

Department of Finance Capital Outlay and Infrastructure Report

Efforts to conduct an assessment of needs and statewide planning have been expanded since 1997. That year, the Department of Finance produced a capital outlay and infrastructure report, estimating that the state’s infrastructure needs totaled \$80.9 billion from 1998-2007. Shortly after, the business community published a report in 1998 that highlighted California’s lack of a “formal process for considering capital investment within a larger fiscal and policy framework.”¹¹ The report said “decisions on capital expenditures are made on an ad hoc basis, with little or no knowledge of how they might affect the state’s ability to meet its most pressing need for public works.” The business community’s report called for a comprehensive review of the state’s capital facilities needs, establishment of a clear set of priorities and adoption of an annual plan for financing those priorities over the following 10 years.¹²

Five-Year Infrastructure Plan

In response to the calls for more assessment and planning, the Legislature in 1999 passed the California Infrastructure Planning Act, which required the governor, in conjunction with the Governor’s Budget, to submit an annual five-year infrastructure plan to the Legislature that identifies the infrastructure needed and funding proposed for state agencies, schools and postsecondary education institutions.¹³ The plan is a summary of infrastructure needs for state programs developed through a collaboration of department staff and the Department of Finance, with the intent that it “be considered by the Legislature in conjunction with its consideration of the Budget Bill.”¹⁴ In 2002, Governor Gray Davis presented the first five-year infrastructure plan

required by the act. Since then, a five-year plan has been submitted by the governor's office in 2003, 2006, 2007 and 2008. No plan was released in 2009. None of the released five-year plans have been formally considered by the Legislature.

Commission on Building for the 21st Century

Governor Davis by executive order in 1999 formed the Commission on Building for the 21st Century with leaders of business, labor, the environment, academia, and government to make recommendations to the governor and to public and private sector leaders to tackle the state's infrastructure challenges for the next 20 years.¹⁵ The 21st Century Commission issued a report in September 2001 that found that "infrastructure planning and investment is a shared responsibility for all Californians. While the state must play a leadership role, shared responsibility means that an effective investment strategy requires the effort and coordinated planning of all of California's infrastructure investment partners – the federal, state and local governments, regional agencies, private and philanthropic sectors, and most importantly California's people."¹⁶

The Commission on Building for the 21st Century identified immediate priorities, such as a school bond measure to modernize K-12 and higher education facilities, a statewide energy infrastructure policy to diversify energy supply and provide surplus capacity, an increase in the supply

and affordability of housing, a lower vote threshold for local bonds and sales tax initiatives for local and regional infrastructure plans, and a statewide water infrastructure plan to provide reliable water supply and improved water quality.¹⁷

In order to fund, plan, integrate and sustain long-term strategies across all infrastructure categories, the Commission further recommended cross-cutting reforms, including a California Infrastructure Partnership, a permanent, public-private entity to provide analysis, dialogue and collaboration to support necessary and cost-effective infrastructure planning and investment in the state. It also suggested establishing a permanent infrastructure investment fund – separate from funds currently allocated for infrastructure – that would require an

Commission on Building for the 21st Century: Guiding Principles

1. ***Improve our quality of life.*** We need to achieve success in economic growth, environmental quality and social equity – to leave a more sustainable California to future generations.
2. ***Make the best of our assets.*** We need to get the most from our use of natural resources, human capital, investment dollars and existing infrastructure. To do so, we must use all of these precious resources and investment dollars more efficiently than in the past.
3. ***Provide equal access to opportunity.*** We must invest to ensure that all Californians have equal access to opportunity including the benefits provided by our infrastructure.

Source: California Commission on Building for the 21st Century. September 2001. "Invest for California: Strategic Planning for California's Future Prosperity and Quality of Life." Page 5.

annual appropriation of 1 percent of the state General Fund to go into the investment fund.¹⁸ Neither of these recommendations has become a reality.

Strategic Growth Plan

Governor Schwarzenegger brought renewed attention to infrastructure development with his administration's focus on rebuilding California, akin to Governor Pat Brown's devotion to infrastructure in the late 1950s and 60s. In addition to releasing the 2008 California Five-Year Infrastructure Plan as required annually by the California Infrastructure Planning Act of 1999, the governor took a longer-term approach with his 20-year strategic growth plan and attempted to reform the state's financing and coordination of infrastructure development.

In 2006, the governor released his strategic growth plan, which provided a larger vision than the five-year plan and proposed placing \$48.1 billion in new general obligation bonds on the 2008 and 2010 general election ballots to supplement \$188.2 billion in existing and other new funding for a total of \$238.6 billion for infrastructure over the next 10 years.¹⁹ The plan also suggested granting broad authorization for state and local governments to partner with the private sector beyond what is currently allowed to help deliver infrastructure projects. It further proposed creating two organizations to aid in managing infrastructure development in a more cost effective and accountable manner: Performance Based Infrastructure California and the Strategic Growth Council.

Performance Based Infrastructure. As proposed, Performance Based Infrastructure California (PBI California) would provide the state with a centralized group of experts to create and manage public-private partnerships and to leverage resources and generate economies of scale. "Public-private partnership" is an umbrella term that describes a broad array of arrangements in which a government agency contracts with a private sector entity to provide some portion of public infrastructure. The proposed state PBI California office would contract with local and state government agencies to assist them in determining whether to form and how to enter into a public-private partnership.

Coupled with broader authority for state and local entities to enter into performance based infrastructure, or public-private partnerships, PBI California has been presented by the governor's office as a way to "harness the advantages of technology knowledge, management efficiencies and entrepreneurial spirit with the social responsibility, environmental awareness and job generation concerns of the public sector to leverage and build infrastructure."²⁰ Part of the governor's PBI California proposal was introduced in the Legislature in 2008 as AB 2600 (Niello), a measure that would have broadly granted unlimited authority to state agencies and departments to enter into partnerships with the private sector, but the bill failed to pass its first committee.

New Legislation Authorizes Public-Private Partnerships

SB 4 X2, chaptered by the Secretary of State in February 2009 (Chapter 2, Statutes of 2009), generally expands state and local governments' ability to enter into public-private partnerships in limited situations. SB 4 X2 does the following:

- Authorizes the use of design-build contracting for up to five state office, prison, or court facilities statewide upon approval by the Department of Finance.
- Authorizes redevelopment agencies, until January 2016, to use design-build contracting for building up to 10 projects across the state (and no more than two per redevelopment agency) that cost more than \$1 million each upon receiving a permit from the State Public Works Board.
- Authorizes, until January 2014, local transportation agencies to use design-build on up to five projects for local streets, road, bridge, tunnel, or public transit projects, and Caltrans to use design-build on up to 10 state highway, bridge, or tunnel projects.
- Authorizes Caltrans and regional transportation agencies, until January 2017, to enter into an unlimited number of comprehensive development lease agreements with public or private entities, or consortia thereof, for transportation projects. (Prior law allowed only four such agreements statewide until January 2012.)
- Creates the Public Infrastructure Advisory Commission within the Business, Transportation and Housing Agency to advise Caltrans and regional transportation agencies in developing public-private partnership transportation projects. The Commission may charge a fee for its services.

Source: SB 4 X2 (Cogdill). Chapter 2, Statutes of 2009.

Public-private partnerships (P3s) are a controversial and highly politicized topic in California. The Professional Engineers in California Government, a powerful union in California with 13,000 members, has opposed increased private sector participation.

Despite this resistance, P3-authorizing legislation was approved as part of the 2008-09 mid-year budget package that was negotiated in late February 2009. The bill, SB 4 X2 (Cogdill), expanded state and local governments' ability to enter into public-private partnerships in limited situations and created a Public Infrastructure Advisory Commission to assist certain government entities with their public-private partnership transactions.

Strategic Growth Council. In addition to his proposed PBI California, the governor also suggested creating a Strategic Growth Council to coordinate state agency activities to "promote environmental sustainability, economic prosperity, and quality of life" for all Californians.²¹ The goal

of the council is to synchronize plans to manage resources and develop infrastructure while facilitating efforts to reduce greenhouse gas emissions under AB 32 in 2006,²² relieve congestion, protect from floods, provide affordable housing, and include a strong land use and resource planning component. SB 732 (Steinberg) passed in 2008, creating the Strategic Growth Council and appropriating \$500,000 from the Resources Agency budget from Proposition 84 to support the council and its activities.²³ The council has convened a handful of times since its initial meeting in February 2009 and is considering the role of the five-year infrastructure plan as it maps out its agenda.

Paying For Infrastructure

The two most common methods of paying for infrastructure in California have been 1) pay-as-you-go or 2) borrowing through the bond market and repaying bond debt over time from the General Fund or from user fees.

Under pay-as-you-go financing, the government uses current revenues to pay for a project. This is the cheapest way to finance projects as no borrowing occurs and no interest is paid. However, this type of financing limits the state to the amount it has available in its coffers to pay for infrastructure at the time, making it difficult to fund large and costly projects that are intended to have long life spans.²⁴

Most of California's recent infrastructure activity is financed through bonds, which is a way of borrowing money to be paid off over 20 or 30 years. Bond financing allows the state to take on major capital outlay projects such as educational facilities, prisons, parks, water projects and office buildings that could not be paid for up front and that will provide services over many years to the benefit of several generations of taxpayers. California primarily uses two types of bonds: General Fund-supported bonds and traditional revenue bonds.²⁵

General Fund-supported bonds include both general obligation bonds and lease-revenue bonds. General obligation bonds require voter approval and are backed by the state's general taxing power. Payments on general obligation bonds are usually made from the General Fund, though some payments may come from designated revenue streams with the General Fund as a back-up. Lease-revenue bonds do not require voter approval and are not guaranteed but are instead authorized by the Legislature and paid from lease payments by state agencies that use the facilities and which ultimately come from the General Fund. Because they are not backed by general taxing power of the state, lease-revenue bonds must offer higher interest rates than general obligation bonds.

Traditional revenue bonds are similar to lease-revenue bonds in that they do not require voter approval and are not guaranteed by the general taxing power of the state. Payments on the bonds are made from a designated revenue stream that is typically attached to the specific project being financed by the bond. Traditional revenue bonds differ from lease-revenue bonds in that the General Fund provides no support for repayment of the bond.

Comparison of State General Obligation Bonds and Lease-Revenue Bonds

Feature or Characteristic	General Obligation Bonds	Lease-Revenue Bonds
Legislative authorization needed for program	2/3 vote in each house	Majority vote in each house
Voter approval required?	Yes – majority vote of the electorate	No
Pledged security to bondholders	Full faith and credit of the state (its taxing power)	Annual debt-service appropriations, plus available bond reserve funds
Interest rate on bonds	Lowest possible	Recently has been averaging roughly 0.2 percentage point above GO bond rate
Underwriting process	Usually competitive bidding, but negotiated sales allowed if cheaper	Some competitive bidding, but most sales to date have been negotiated
Need for reserve fund to effectively market bonds?	No	Yes
Need property and liability insurance?	No	Yes
Amount of bonds required	Based on project costs, plus small amount (less than 1 percent) for issuance costs	Bond volume upsized, typically by roughly 15 percent over project costs, to cover underwriting fees, debt-service during construction period, other issuance costs and reserve fund
Type of amortization schedule currently used	Typically level total payment (principal and interest) over 30 years	Typically level total payment (principal and interest) over 25 years
Real cost of bond financing	Lowest possible (typically about \$1.20 to \$1.30 per \$1 capital costs)	Typically 10 percent to 15 percent above GO bond cost, depending on circumstances

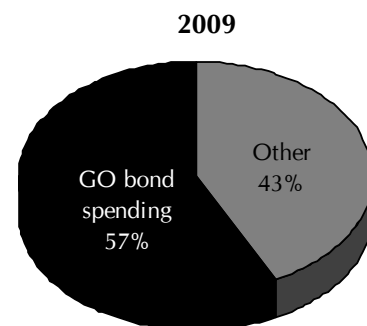
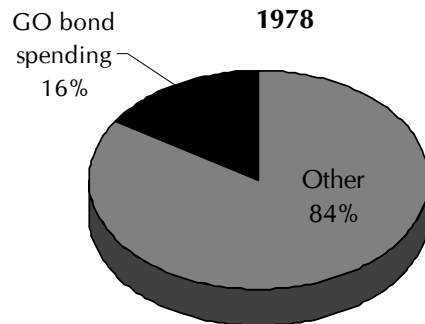
Source: Legislative Analyst’s Office. February 2007. “Frequently Asked Questions About Bond Financing.” Page 4, Figure 1.

General Fund Repays General Obligation Bonds

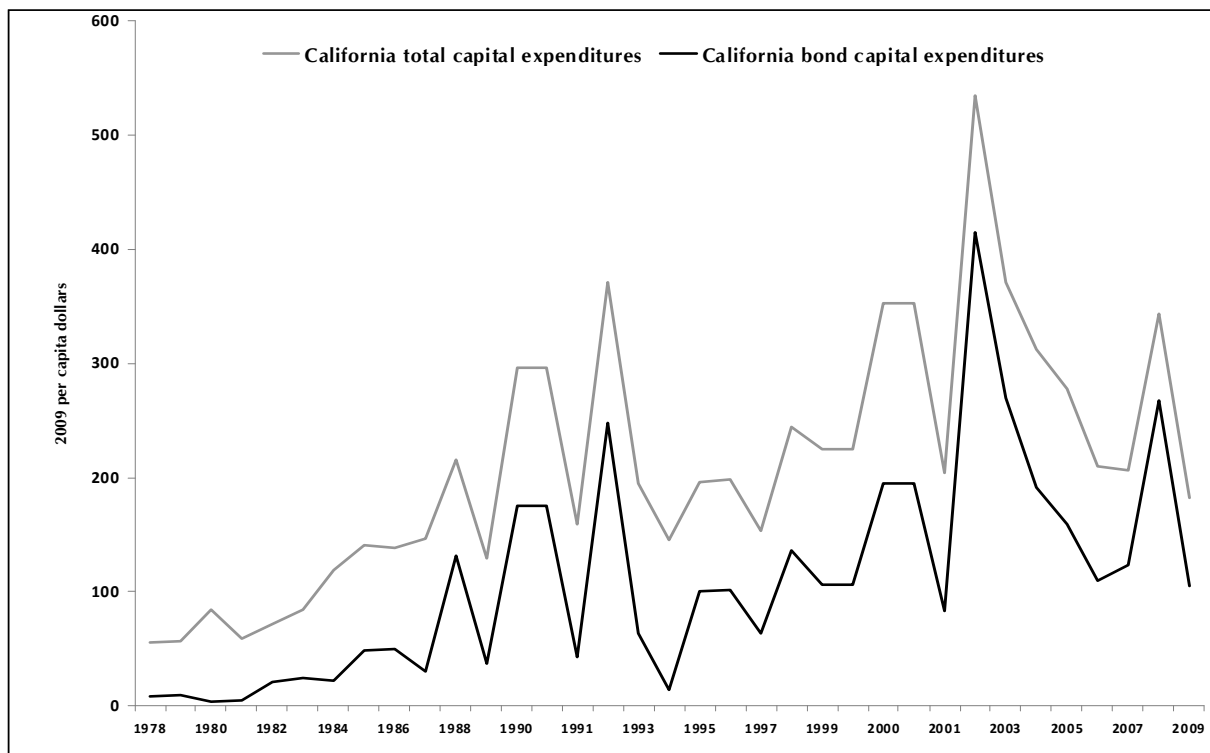
Most bonds that are issued by the state are general obligation bonds. Debt that accrues from issuing general obligation bonds is repaid from the state’s General Fund, and California law dictates that these payments take priority over other state programs funded by the General Fund. In periods of flat or falling revenue, or increasing costs of providing government services, this means that increasing debt payments can force cuts in program spending in other areas, such as education, health care, schools and public safety.

California’s use of the general obligation bonds to finance infrastructure projects has increased significantly as a share of the state’s capital spending since the late 1970s.²⁶ State general obligation bonds are popular because they are relatively easy to pass with only a majority vote, and they apportion the cost of the infrastructure over more than one generation that will benefit from its existence.²⁷

Total Capital Spending



California State Infrastructure Budget, 1978-2009



Source: Ellen Hanak. Public Policy Institute of California. January 2009. "Paying for Infrastructure: California's Choices." Citing governor's budgets (spending), California Department of Finance (population) and U.S. Department of Labor (producer price index for materials and components for construction). Page 4.

Cost of Bond Financing

Public finance experts stress that money from bond sales is debt, not revenue, and must be paid back at a rate of roughly \$2 for every dollar borrowed. Extending repayment over decades can reduce the inflation-adjusted cost of borrowing, but it still represents an added cost, one determined by the state's credit rating and the bond's time to maturity.

In the United States, interest income from general obligation bonds and many other types of debt issued by public agencies is exempt from income taxes. In general, this results in governments offering investors lower interest rates on public bonds than would be offered for corporate bonds. All other things being equal, it means governments generally have lower borrowing costs than do private companies.

Locked out of the Bond Market

Until 2008, general obligation bonds were seen as a reliable source of financing for California, a situation that changed dramatically late in the year, when credit markets seized up because of a global crisis of confidence and a recession that had started earlier in the year sharply reduced tax revenues to the state.

The steep drop in revenues sparked an extended state budget crisis, which complicated California's ability to borrow through credit markets. At one point, lacking a budget, the state essentially was shut out of the credit markets. To conserve cash for critical services and schools, the state shut down its short-term financing vehicle, the Pooled Money Investment Account, freezing or delaying payment on more than 5,400 infrastructure projects statewide. Although it could be argued that this was an extreme case, created by the combined effect of the state's severe economic downturn and the global credit crisis, it hampered the state's ability to sell bonds. Because of the crisis and separate restrictions on bond sales, California was unable to sell general obligation bonds for nine months.

The state has since returned to the bond market, though its bond rating is the lowest among the states. The state's credit rating, coupled with weak market conditions, in October 2009, forced California to trim the size of a 4.5 million bond offering because it was unwilling to pay the higher interest rate demanded by bond buyers.

Source: Los Angeles Times. October 9, 2009. "California municipal bond sale falls short of fundraising goal." Also, Department of Finance. "Information Regarding Bond Funded Infrastructure Projects." www.dof.ca.gov/infrastructure/bond_funded_projects/. Accessed June 22, 2009.

California's borrowing costs are affected by the state's credit rating, currently the lowest in the nation. This has had the effect of adding to the state's borrowing costs, though not to the degree that would be expected given California's credit rating. California currently is the biggest player in the nation's \$2.3 trillion municipal bond market. The municipal bond market, and the rest of the credit markets, experienced upheaval of historic proportions during the previous 12 months, so conclusions based on California's experience in the markets during that period are likely of limited value. The market, however, is slowly returning to more normal conditions, according to the State Treasurer. Yet California's revenue plunge, and the multiple delays in signing a budget, influenced its ability to borrow and the cost of borrowing. The rate the state had to offer for 30-year tax-exempt general obligation bonds increased from 5.12 percent at the beginning of fiscal year 2007-08 to a high of 6.76 percent at the height of the credit crisis, but dropped back to 5.10 percent by September 2008. These are substantially higher rates than governments with better credit ratings had to offer.

Other Revenue Sources

Aside from the General Fund, another approach to paying for infrastructure, whether to repay debt or pay directly for operating costs, is through user fees, in which the person who benefits from the use of infrastructure pays a fee that represents the costs of construction, maintenance and operation of the system. Linking user payments more closely to actual use is suggested by many transportation and financing experts as a way to generate revenue, manage demand, maximize new and existing resources, and potentially provide a useful indicator for prioritizing and allocating infrastructure spending. Direct user fees in transportation, for example, include tolling, congestion pricing and charges for vehicle miles traveled.²⁸

Economists like tolls and user fees because they make a direct link between the benefits a user receives and the cost the user imposes on an asset. Collected over time, an operator can use information from fees and tolls to determine how to best run the operation and whether revenues cover the cost of financing, building, operating and maintaining the asset. This information is critical to setting tolls, as well as to renegotiating contracts. It also can help guide decision-making about further investment in the area.²⁹

Gas, water and electric utilities generally repay debt and operating costs through user fees. The state has successfully harnessed user fees, if indirectly, to pay for bonds issued to construct the State Water Project. Water districts and agencies, including cities and irrigation districts, contract for water from the state; the cost of providing the water and repaying capital costs of the project are reflected in user fees paid by the end consumers of the water based on how much is consumed.

In the early 1920s, the state adopted a motor fuel tax to pay for the state's burgeoning road system, a practice pioneered in Oregon and later made mandatory by the federal government. When the Legislature first considered a gas tax, the preferred method was to charge for the use of a road rather than to tax gas, but toll collection methods available at the time would have been too costly. The Legislature in 1923 instead implemented an easier and less expensive system of taxing fuel.³⁰ The state now charges 18 cents a gallon for gasoline and diesel; the federal government levies a charge of 18.4 cents, both unchanged since 1994. A sales tax on fuel purchases was introduced in the 1970s; voters in 2002 passed Proposition 42 to ensure that gas sales tax revenues were directed to new transportation projects and transit, though much of these revenues have been diverted to shore up the General Fund.

California State Park entrance fees also are user fees, though like gasoline taxes, they no longer cover the cost of construction, maintenance or operation. Bridge tolls also are user fees, though often toll revenues are used for a variety of purposes not immediately related to the use of the bridge.

Tolling also is used as a tool, as tolls can be varied at different times of the day, week, month or year – a concept also known as congestion pricing – where prices are set according to traffic flow in order to better manage the demand for the infrastructure. Congestion pricing can be applied to all users generally, or it can be adopted in particular settings, such as high-occupancy toll lanes, that are separate from other free or lower cost, more congested lanes on a road. Toll rates can be set at pre-published levels with different rates for every hour or half-hour period each weekday, or adjusted in real-time – called dynamic pricing – depending on measured vehicle density and potential for flow-breakdown. Real-time prices are typically posted on electronic message boards that allow drivers to decide whether to make use of the priced lanes as they approach the span.

Absent federal subsidies and grants, state government can pay for infrastructure in three ways, through raising taxes, imposing user fees or shifting money from other programs in the budget.³¹ It has an array of options to finance projects, but the financing still has to be repaid through either tax revenues or user fee (or similar) revenues. Just as the state has an array of financing options, it also has a range of alternatives for delivering infrastructure projects that can be used by Californians. The choices available for how California designs, builds, operates and maintains infrastructure, however, do not free it from ultimately having to pay for such projects, which are tax revenues, user fees or some combination.

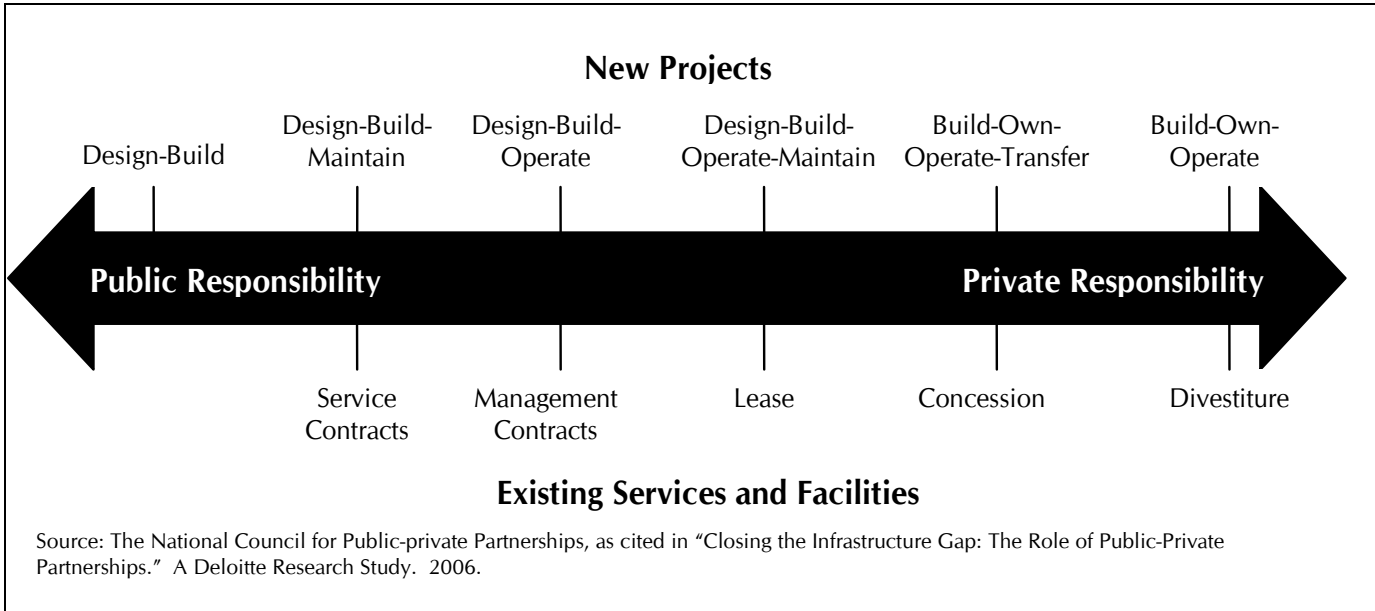
Innovative Delivery of Infrastructure

Faced with similar limitations on paying for infrastructure, other states and countries have turned to new methods of delivering needed projects. Along with increased implementation of user fees, public-private partnerships (P3) are emerging as a new trend in both the financing and delivery of infrastructure projects.

The spectrum of public-private partnerships includes partnering with private enterprise at any point during the planning, designing, financing, building, operating, leasing or ongoing maintenance of infrastructure. The greater the portion to be provided by the private sector, the further along it will be on the P3 spectrum. Different configurations reflect the

vastly different conditions, financial structures and legal systems around the world where such arrangements are employed. Typically, the public agencies and private parties that form successful public-private partnerships look at infrastructure in a fundamentally different way than do most governments, treating public goods as assets, not liabilities, and as a result, distinguish between investments and costs.

Spectrum of Public-Private Partnerships



When it comes to designing a public-private partnership, witnesses told the Commission that no one partnership structure fits all circumstances. The type of partnership that is appropriate, if at all, depends on the specific details of the project and should be crafted in order to meet current conditions and expected needs. In some cases, the public sector may end up being the best choice over a partnership with private companies once all possibilities have been considered. Advocates for P3s agree that it should be available as a tool for the government to employ only when it is the best choice among the options available. P3s have added value as a way to allocate risk to the party best able to handle it. The public sector, for example, is often in the best position to take on the risk of a lengthy environmental review, where a private entity could better manage construction delay risk or the risk of rising material costs.

Private involvement in infrastructure development is nothing new. Few public projects are built without private construction firms doing the work under contract, an arrangement that would fall under the category of design-build on the P3 spectrum.³² In California, the most untapped

areas for innovation are more extensive public-private partnerships that fall along the spectrum beyond the design-build class.

California once was a pioneer in this more innovative public-private partnership arena, legislatively authorizing competitive selection of four privately-financed toll-road pilot projects in 1989. AB 680 allowed the California Department of Transportation (Caltrans) to contract with private companies to design, build, operate and maintain four transportation projects using private money and no state funds.³³ At least one project had to be in northern California, and one in southern California. Two of the pilot projects were completed: State Route 91

Express Lanes in Orange County, which opened in December 1995, and the San Diego State Route 125 South Toll Road, which began construction in 2003 and opened in November 2007. The other two projects, selected by Caltrans, failed to gain financial and community support before the bill's authorization expired in 2003.³⁴

The Legislature followed with AB 1467 in 2006 to authorize the development of four additional projects divided among northern and southern California. No partnership has yet emerged from this authorization, which sunsets in 2012. Experts attribute this to the detailed provisions of the bill, including the following requirements: 1) any agreement must be the subject of a public hearing and submitted to the Legislature for approval, 2) the agreement cannot have a non-compete provision, 3) tolls and fees cannot be charged against noncommercial vehicles with three or fewer axles, and 4) the agreement must identify the toll rates at fixed amounts, with increases subject to approval by Caltrans.³⁵

California's First Innovative P3 Projects

SR 91 Express Lanes (Orange County)

SR 91 Express is a four-lane, 10-mile toll road located southeast of Los Angeles in the existing center median of SR 91, an existing non-toll public highway that connects three of the fastest-growing counties in the United States: Riverside, San Bernardino and Orange counties. It was privately financed at a cost of \$135 million and opened in December 1995. Originally, it was owned and operated by California Private Transportation Company L.P., a joint venture of Kiewit Pacific, Granite Construction, and Cofiroute. In 2002 the Orange County Transportation Authority bought it for \$207.5 million, but Cofiroute continues to operate it pursuant to a management contract. SR 91 was the first toll road in the United States to use variable congestion pricing and the world's first fully automated toll road that uses electronic transponders to collect tolls.

SR 125 South Toll Road (San Diego)

SR 125 South is a 9.5 mile, four-lane toll road located in San Diego County. Development of the SR 125 had been planned for years, but construction did not begin until September 2003, with an official opening in November 2007. It is intended to reduce traffic congestion on I-5 and I-805 and increase capacity for future travel between the United States and Mexico. With a cost of \$722 million, it was financed and developed as a public-private partnership under a franchise agreement between Caltrans and California Transportation Ventures, an affiliate of Macquarie Infrastructure. The project was financed by private debt and equity supplemented by a loan under the U.S. Department of Transportation's TIFIA (Transportation Infrastructure Finance and Innovation Act of 1998) program.

Source: Robert W. Poole, Jr., Peter Samuel, and Brian F. Chase. Reason Foundation. Policy Study 324. January 2005. "Building for the Future: Easing California's Transportation Crisis with Tolls and Public-Private Partnerships."

Public-Private Partnerships in Other States

Meanwhile, public-private partnerships have sprouted in other jurisdictions. The City of Chicago in 2005 entered a 99-year lease of the Chicago Skyway for \$1.83 billion, becoming the first in the United States to enter a long-term lease of a public toll road. Shortly after, the state of Indiana set up a partnership with an operator to assume responsibility over the Indiana Toll Road for \$3.85 billion in a 75-year lease beginning in 2006. These deals have given the government up-front cash for a pre-existing “brown field” asset while shifting the ongoing maintenance and operations costs to companies who then charge consumers a toll.

Partnerships also have been used to build new “greenfield” projects that in some cases otherwise would not have been completed. The Pocahontas Parkway in Virginia, which opened in 2002, was designed and built by a partnership between the state and a private company. When lower than expected tolls brought the parkway close to defaulting on the debt, another private company in 2006 stepped forward into a 99 year lease, agreeing to pay off the debt, upgrade the tolling systems, maintain the parkway, and build a connection to the Richmond airport, in exchange for the right to raise tolls.

In Colorado, three local governments formed the Northwest Parkway Public Highway Authority to build the Northwest Parkway with funding from revenue bonds guaranteed by projected toll revenues. When tolls amounted to half the estimated revenues, the authority in 2007 leased the parkway to a private operator, allowing the authority to use some of the \$603 million from the 99-year lease to pay down bond debt.

Centers of Excellence in Other Countries

Given the complexity of the deals, other countries have formed expert-laden organizations that help the government negotiate and manage the contracts that govern public-private partnerships. Britain, Canada and Australia have incorporated far more extensive use of P3s than the United States and California. Each of these countries has formed an entity to provide expertise and guidance to government agencies in the procurement of public-private partnerships, which comprise no more than 15 percent of total public investments as they are not always the best method of providing public infrastructure.

Partnerships UK. Partnerships United Kingdom (PUK) was set up in 2000 to provide a permanent center of excellence for the public sector in the UK by providing project advice and support, government policy expertise, co-sponsorship of projects and assistance in turning public sector under-

utilized assets and innovative ideas into business and joint venture opportunities. PUK is itself a public-private partnership with an arms-length relationship with Her Majesty's Treasury, with operational independence, and 51 percent private sector equity ownership. Since it began, more than 620 P3 (called PFI, or private finance initiatives in the UK) projects worth roughly \$50 billion have been initiated, and PUK has played a major role in the development of this market. The PUK team, which comes from a wide range of private and public sector backgrounds, has grown from 15 in 2001 to more than 80 current staff.

Partnerships BC. Partnerships British Columbia, created in 2002, is similar in intent to Partnerships UK, but is owned entirely by the province of British Columbia. With roughly 45 staff, the organization takes a hands-on approach to providing services to plan and negotiate P3 deals and helps foster a policy environment that suits public-private partnerships. It also works on behalf of public sector agencies to form relationships with private businesses, investors and the financial sector.

Infrastructure Ontario. Infrastructure Ontario was formed in 2005 and takes a more focused approach to coordination of projects that merge the public and private sectors. It uses public control and ownership and private financing in managing projects aimed at renewing public assets such as hospitals, courthouses, roads, bridges and water systems. All projects have been completed on time and on budget. The organization also directs municipalities, universities and other public bodies toward affordable loans for building and renewing infrastructure. Infrastructure Ontario differs from Partnerships UK and Partnerships BC in that, once the government sends the project to Infrastructure Ontario, the legislature is no longer involved, and Infrastructure Ontario is solely responsible for all tasks associated with delivering the project.

Opportunities in California

With the passage of SB 4 X2, California is moving forward on its most ambitious authorization of public-private partnerships, allowing unlimited P3 contracts by Caltrans and regional transportation agencies until 2017.³⁶ This new authorization gives California the opportunity to learn from its own and others' previous experiences with public-private partnerships. It also allows the state to look at its own operations in a new light, offering the potential for improving how the state plans, manages and pursues infrastructure development.

Statewide Strategic Planning for Infrastructure

California's infrastructure is struggling to keep up. Years of underinvestment have put the state's resources – its levees, freeways and schools – in serious need of maintenance and repair.

At the same time, the state's population has swelled, increasing the load on these assets that form a critical part of the foundation vital to the state's health, economy and prosperity. Recent policy initiatives, such as efforts to reduce greenhouse gas emissions and encouraging smart planning, have imposed new conditions on state and local efforts to build and maintain infrastructure.

Despite the need for infrastructure improvements, the state has either lacked the revenue or lawmakers have not chosen infrastructure investment as a top priority for the past several decades. When the state faces budget shortfalls – as it has multiple times in recent years – infrastructure often is overlooked for other spending priorities. The 2008-09 recession was no exception.

Federal money has provided a welcome infusion, though in many cases, the combined \$6 billion in stabilization and stimulus funding simply has backfilled cuts. In the current environment, funding for infrastructure is uncertain and often nonexistent despite growing needs, as lingering effects of the global credit crisis hobbled the state's ability to sell previously authorized bonds targeted for infrastructure projects. Even in good budget times, however, California's infrastructure investments have lagged behind what the state needs to keep up with growth and maintenance needs. This pattern has been determined in part by the siloed nature of the state's infrastructure planning but more important, by the lack of an institutional champion to advocate specifically for keeping the state's physical network in optimal condition. The result is crowded freeways, crumbling college buildings and prisons, levees vulnerable to collapse, an outmoded water conveyance system and hundreds of millions of dollars in deferred maintenance at our state parks.

California's economic crisis ultimately will pass, though the state may recover later than other states and other countries, many of them

“The current economic climate and budget crisis in California offer compelling reasons for restructuring how California plans, finances, builds and operates its infrastructure – the state desperately needs a new model.”

David Dowall

California's competitors. Given the potential for others' head start, California's future competitive position very well may depend on the infrastructure decisions and investment its leaders make today.

The choices facing the state decision-makers are difficult, as the recession forced the administration to lower revenue forecasts by 20 percent in 2008-09, then by another 22.7 percent for the 2009-10 budget.³⁷ The subsequent \$16 billion spending cuts over the two budgets made clear that California's increased reliance on general obligation bond financing to pay for infrastructure spending cannot be sustained without further hard choices, including cuts in spending on social and health programs as well as public safety programs. Issuing more general obligation bonds will only increase the amount of debt service; in a climate of flat or slowly growing General Fund revenues, this strategy will necessarily mean further cuts to other programs.

Even in the currently constrained environment, however, California has a wealth of opportunities for enhancing its infrastructure system. Innovations in technology, for example, can help the state and the public understand how intensely a highway or bridge is used, information planners already use to forecast future needs. Drawing on real-time data, the state could set policies and mechanisms that can better distribute costs of operating and maintaining the bridge to the people who use it most, or put in place mechanisms to manage demand for an asset to make it last longer or avoid costs of expanding it. New ways of involving the private sector, in both the financing and delivery of a project, can allow the state to complete a project more quickly or tackle projects that otherwise may not have been done at all. These and other tools can help the state fulfill its role in providing the infrastructure foundation California needs to support its economy and quality of life, despite a lengthy recession.

Providing quality infrastructure in challenging times and capitalizing on potential opportunities requires strategic thinking, integrated planning, and long-term goal setting that capitalizes on California's existing assets and strengths, both public and private. To date, this kind of coordinated planning and priority-setting is not being done on a statewide, cross-sector level with full input from all stakeholders and with openness to innovation in how infrastructure is funded, financed, delivered and managed, though many of the pieces exist. This chapter reviews the way infrastructure currently is developed and how the state could improve its leadership, planning and coordination of infrastructure investments.

California Lacks an Infrastructure Vision and Statewide Strategy

California has no comprehensive infrastructure vision for the future. Infrastructure decisions are made in government silos and often through bureaucratic approval processes that are focused on individual projects and on the availability of funding, or whether they meet certain standards unrelated to overall state needs. In the case of the 2006 and 2008 bond proposals, voters approved large sums of bond borrowing in five measures placed on the ballot by the governor and Legislature and two measures added to the ballot through the initiative process, but the bond measures were not based on an integrated statewide assessment of needs or an agreed-upon strategic plan. This has produced unrelated programs of infrastructure spending initiated with little thought as to how projects fit within the larger picture of state goals and priorities, and continues the pattern of inconsistent investment in infrastructure over the years.

2006 and 2008 Bond Measures

California voters in 2006 authorized almost \$43 billion in general obligation bond spending:

- Proposition 1B – Transportation \$19.9 billion.
- Proposition 1C – Housing \$2.9 billion.
- Proposition 1D – Education \$10.4 billion.
- Proposition 1E – Resources \$4.1 billion.
- Proposition 84 – Resources \$5.4 billion.

Voters then approved roughly \$11 billion in bond spending in 2008:

- High-Speed Rail \$10 billion.
- Children’s Hospital Bond Act \$980 million.

In 2007, and reiterated in 2009, the California State Auditor listed infrastructure maintenance and improvement as one of the five high-risk issues facing the state. The auditor cautioned that, “considering the breadth of the state’s needs, the numerous categories of infrastructure the 2006 bond package is authorized to fund, and the number of administering agencies, the state faces risks. Such risks include ensuring that it properly prioritizes its infrastructure projects, then selects and executes those most likely to meet existing and future needs. The state also faces risks in ensuring that the various agencies with a role in expending the bond funds coordinate as needed and that redundancy and confusion do not result in wasted time and money and needless delays in completing critical projects.”³⁸

The Commission found in its June 2009 study, *Bond Spending: Expanding and Enhancing Oversight*, that California lacked a government-wide system to ensure that bond money was spent wisely on projects that delivered lasting value.

California’s biggest infrastructure challenge is the lack of a clear vision and strategy for what infrastructure goals the state wants to achieve in the next 20 years, witnesses told the Commission. The state needs to set

“We lack a vision for what our transportation system is and should become.”

Senator Alan Lowenthal

strategic, programmatic and capital investment priorities, which can enhance infrastructure outcomes and performance.

In its thinking about infrastructure investment, the state must design its strategy around desired outcomes, not simply inputs such as adding lanes to freeways. Reduced congestion and better air quality are outcomes, and while added freeway lanes might produce less congestion, so might other paths, such as more public transit or a user fee system that increases tolls during peak travel times as an incentive for people to adjust their travel plans or pay for the added congestion and emissions they create. Smart and integrated planning would give the state a chance to pursue its goals with a more innovative demand management strategy that incorporates all of the outcomes desired by the state.

Potential solutions have to be considered as part of a larger visioning process that takes all of the state's priorities into consideration. One mistake governments often make is focusing on increasing supply to meet demand, basing forecasts of need on per capita consumption. Long-term state planning, when it is done, typically pays too little attention to how consumers react to changes in price, or the effects of conservation (whether the result of price signals or not) or new technology, such as drip irrigation or smart sensors for soil humidity or traffic congestion.³⁹ In doing so, policy-makers fail to recognize the extent to which Californians make such economic decisions every day in selecting cellular telephone or cable television packages, timing their showers, switching to low-flow toilets and fluorescent light bulbs, or choosing a toll road if it means avoiding a late fee picking up their children from daycare or being late for work.

California's process for planning infrastructure, or lack thereof, makes it difficult to make these important policy decisions that will affect the impact that new and updated infrastructure will have on the state and its citizens.

Infrastructure Planning in Agency Silos

Planning for infrastructure currently takes place within program areas generally organized into state agencies and departments. Under the current process, decisions about what to build reflect what money is available and what can be approved, making it difficult to coordinate infrastructure development across the state as a whole.⁴⁰ In addition, general obligation bond measures for infrastructure projects often are placed on the ballot through campaigns backed by political interests, not because they respond to state needs. For example, voters recently have approved more than \$6 billion for various resource projects, children's

hospitals, and other designated projects through bond initiatives that were underwritten by parties who in some cases stood to gain from the measures, not because the funded projects were part of the state's strategic plan. As a result, the state's infrastructure develops in a piecemeal fashion, planned independently in separate agencies and departments, funded through bond measures or the state budget process, each with its own problems and limitations.⁴¹

A Department of Finance official told the Commission that infrastructure investment is not a program unto itself, but instead an element of each substantive state program that plans and delivers the projects.⁴² The state's five-year infrastructure plan required by the California Infrastructure Planning Act of 1999 embodies this approach. It requires departments to submit information to the Department of Finance on projected infrastructure needs, estimated costs and creative alternatives for meeting those needs, and the consequences of not addressing its needs. The submitted information then is analyzed by finance staff to determine which areas of infrastructure should be included in the five-year plan.

In 2008, the finished plan was detailed in a 256-page report divided by program area that discussed a department's infrastructure plan according to such categories as "Existing Facilities," "Drivers of Need" and "Five-Year Needs," culminating in a proposal for projects and sources of funding for them. Each project entry must articulate that it addresses three state planning priorities required by more recent legislation, emphasizing infill development, the protection of environmental and agricultural resources and efficient land use.⁴³ As the final report explains, "[t]he 2008 Plan reflects the infrastructure needs of state programs and recommends funding priorities based on considerations of criticality, equity and funding availability. It proposes a balanced and affordable investment in California's future."⁴⁴

The five-year plan is a major step forward in understanding the state's infrastructure resources and needs; however, it falls short of the smart planning and investment strategy needed to effectively and efficiently meet the state's needs. Information is generated at the department level, with department staff holding the responsibility for creating innovative solutions to their infrastructure needs, doing so within existing resources and under current funding structures. These are difficult and narrow parameters within which to innovate, and staff inside a department may not have the knowledge or expertise to make suggestions for a new approach, whether programmatic or fiscal. Faced with a real fear that cost-savings from innovation may reduce funding for the program in the next fiscal year, departments lack incentives for finding creative ways to

minimize costs. Whatever the reason, the final five-year plan includes little, if any, innovative proposals.

Methodology of the 2008 California Five-Year Infrastructure Plan

To ensure cross-department consistency in the infrastructure planning information reported by state departments, the Department of Finance established the following guidelines for departments to identify and report their needs:

- 1. Determine total infrastructure need over the five-year period.** Identify a) what type of services they will be providing during the next five years, b) what level of service, and c) what infrastructure is necessary to support that type and level of service.
- 2. Determine baseline infrastructure capacity.** Answer the question, "To what extent can the department's existing infrastructure accommodate the need identified in step one?"
- 3. Calculate the "net need."** Subtract the existing capacity identified in step two from the total need determined in step one.
- 4. Identify alternatives for meeting net need.** Explore realistic and possibly creative means of meeting the net need to ensure that the most efficient and effective solution was selected. This may include changing program requirements to reduce need, co-locating with similar programs to share resources, and using alternative means of service delivery such as the Internet.
- 5. Develop a proposed plan.** Prepare a comprehensive plan that is project-specific, except for projects that face too many uncertainties in which case the department should articulate the need in some tangible fashion, and include an estimate of its cost and timeframe for implementation.
- 6. Consequences.** Provide an evaluation of the consequences of not addressing identified needs, and an articulation of what benefits would accrue as a result of implementation of the proposed plan.

Source: Governor Arnold Schwarzenegger. State of California. 2008. "2008 California Five-Year Infrastructure Plan."

In its current form, the plan lacks substantive analysis based on long-term strategic goals at both the state and department levels. The analysis for the document is done within the ranks of the Department of Finance, and is based mainly on funding considerations. Department of Finance staff testified that priority-setting is difficult as certain funds are earmarked for specific project areas because of specific language in bond measures or as conditions of federal funding.⁴⁵ In failing to set priorities among projects, however, the plan implies an equivalent level of importance of projects across departments, leaving for readers to decide which of the projects are needed most. The resulting list is an important perspective that should be considered in the process of planning statewide infrastructure development, though it is shaped by budget considerations and statutory requirements, not an integrated strategy.

The goals articulated in the plan are not the broad, overarching policy goals that should drive infrastructure development in the state. The plan identifies "criticality, equity, and funding availability" as the determining factors driving prioritization. This leaves out larger state policies in areas such as environmental protection, economic development, public health, resource maximization and other considerations that must be incorporated in the development and use of new and existing infrastructure. These broader state goals are not discussed in the five-year plan, and are not encouraged in the planning that filters up through the departments to the Department of Finance.

The five-year infrastructure plan has equipped the state with an important resource that in one document identifies program area needs and offers basic information about existing and projected capacity to maintain the status quo. Such a compilation was non-existent before 1999. However, the state still lacks cross-sector planning of projects, and it has not employed the full range of innovative methods for financing them. The unstable, inconsistent, and unsustainable nature of how the state pays for infrastructure shows the need for strategic thinking and smart planning for infrastructure financing and delivery, calling for broad, state-level leadership on infrastructure development and, at a minimum, more involvement by the Legislature.

Role of the Legislature in Infrastructure Development

Discussing the five-year plan at the Commission's February 2009 hearing, California Business Roundtable President Bill Hauck testified that "there is one tremendously important ingredient that's missing from that plan, and that is that there has been no participation, none, zero, by the California Legislature in relation to that plan and that's why it looks the way it does."⁴⁶ Mr. Hauck said the lack of legislative input is why the plan lists the needs of each department without regard to other state government departments.

Rather than evaluating the state's overall capital spending plans, the Legislature examines individual department budgets each year that include each department's capital spending plans. Currently, no process exists for legislative priority-setting or comparison of one infrastructure project to another, even during consideration of budget expenditures for programs.⁴⁷ This reinforces the siloed nature of infrastructure planning and analysis and for the most part, puts the Legislature in a position of reacting to an administration plan, rather than bringing an institutional vision and overall strategy for prioritizing and paying for infrastructure.

"California's infrastructure problem is partly the result of insufficient funding as well as piecemeal planning and budgeting."

David Dowall

Senator Bob Huff, vice-chair of the Senate Transportation Committee, said the Legislature's current system of bottom-up planning focuses on local and regional needs, a process that involves the individual views and priorities of the Legislature's 120 members. In this, the Legislature mirrors the California Transportation Commission's approach to approving local transportation projects, which take a more regional approach.

As long as the state is in a crisis mode of addressing transportation needs, that approach will likely endure, Senator Huff said, especially when infrastructure planning timelines often exceed legislative terms.

“You’re handing the baton off to someone else, and to the degree they don’t share the vision of the person who started the race, or have a different vision, you are going to have an inefficient method for setting priorities,” Senator Huff told the Commission.

As a result, spending for new projects finds its way into the final budget more easily than does spending for maintenance and repair for existing state property and assets. This reflects the reality that new projects typically bring with them their own sense of urgency as well as attached political benefits; the costs of delayed maintenance and political benefits of paying for it are less obvious. One consequence is the growing backlog in deferred maintenance throughout state government. The California State Parks program currently has a deferred maintenance backlog of \$1.7 billion, and adds to it each year by \$120 million. The California Department of Transportation estimates that maintenance and repairs on the state’s roads and highways costs more than \$6 billion a year, yet budgets \$1.5 billion for the task. One solution to this is to include the costs of maintaining a project over its life-cycle both in bond measures and in operating budgets.

Another result of implementing infrastructure policy piecemeal through the budget process is that multi-year projects receive funding within a one-year budget time frame. Changes in budget priorities can have deleterious effects on projects underway, Caltrans director Will Kempton testified. Extending construction schedules delays improvements, adds cost and increases congestion.

To date, the Legislature has not responded to the governor’s annual five-year infrastructure plans, despite intent language suggesting that the Legislature review the plan as part of its annual budget process. At the same time, however, the Legislature has enacted ambitious policies that directly and indirectly impact infrastructure development, such as goals to reduce greenhouse gas emissions and encourage smart growth through AB 32 in 2006 and SB 375 in 2008.

Senator Alan Lowenthal, chair of the Senate Transportation and Housing Committee, told the Commission that the air quality and traffic congestion problems that prompted such legislation will require lawmakers to develop a new vision for how to meet these goals. Speaking specifically on the Legislature’s role in transportation infrastructure, Senator Lowenthal said he saw three important tasks for lawmakers:

- ✓ Facilitating a process for articulating a vision for the state’s transportation system that is consistent with AB 32 and SB 375.
- ✓ In the process, identifying the Legislature’s own broad goals for transportation.

- ✓ Establishing a framework for achieving the identified goals and holding agencies accountable for meeting them.⁴⁸

Senator Lowenthal said these tasks bring with them challenges for the Legislature: articulating a vision and framework for achieving the vision, generating sufficient revenue and aligning policy priorities with budget priorities.

Legislative involvement is essential to developing an effective infrastructure policy, one that should be “coordinated in a flexible and collaborative manner” by the governor and the Legislature.⁴⁹ Without such coordination, the Legislature loses an opportunity to link its goals for reducing greenhouse gas emissions to funding the most promising infrastructure projects that could achieve those goals. Such projects could be freeway improvements, transit projects or state help in streamlining the movement of cargo from ports to rail lines. The Legislature should exercise its leadership responsibility early in the process, not after construction is finished, to ensure state planners consider a wide range of alternatives.

AB 32 and SB 375

The California Global Warming Solutions Act of 2006, or **AB 32**, was the nation’s first law to attempt to reduce greenhouse gas emissions. The law requires the California Air Resources Board (CARB) to develop regulations and market mechanisms to reduce the state’s greenhouse gas emissions by 25 percent by 2020. The law also mandates CARB to measure the greenhouse gas emissions of the industries it determines are significant sources of emissions and gives the governor the ability to suspend emissions caps imposed by CARB for up to one year in the case of an emergency or significant economic harm.

SB 375, passed in 2008 to lower greenhouse gas emissions through better land use and transportation planning. While AB 32 set the goals and created the regulatory authority, SB 375 focuses on taking action in the transportation and land-use planning areas. Under the law, CARB must develop regional greenhouse gas emission reduction targets for autos and light trucks for 2020 and 2035. CARB also must work with California’s Metropolitan Planning Organizations (MPOs) to align their regional transportation, housing and land use plans and prepare a “sustainable communities strategy” aimed at lowering the number of vehicle miles traveled in their regions. SB 375 provides incentives for revitalizing existing communities, encouraging walkable and sustainable communities and, for home builders, contains provisions for relief from certain CEQA reviews for projects consistent with the new strategy.

Sources: AB 32 (Nunez). Chapter 488, Statutes of 2006. Also, SB 375 (Steinberg). Chapter 728, Statutes of 2008.

State Attempts at Strategic Planning

Attempts to improve infrastructure planning or set a long-term strategic vision for infrastructure generally have been short-lived efforts, leaving no ongoing planning process behind.

The five-year infrastructure plan is a useful process and an important step in the right direction, but it merely provides a list of state infrastructure projects within the existing paradigm of infrastructure delivery. It has not been, and was not required to be, a plan or strategy for taking action on the state’s infrastructure needs, nor does it delineate priorities among the list of projects. It also does not serve as a catalyst

for innovation in the way infrastructure is financed or delivered, and it includes only state-owned resources with no integration of local or regional infrastructure projects that account for 80 percent of infrastructure assets around the state. Witnesses told the Commission that the Legislature has not engaged the plan or used it to provide feedback, despite intent language in the enabling legislation that “the proposed infrastructure plan be considered by the Legislature in conjunction with its consideration of the Budget Bill.”⁵⁰

Earlier, Governor Davis created the Commission on Building for the 21st Century that in 2002 produced a thoughtful plan for developing infrastructure for the future. The commission’s report included guiding principles, specific priorities, and suggestions for new entities and practices that would put a process in place for infrastructure decisions and actions. While some of the ideas of the report found their way into other organizations and studies, Governor Davis never formally accepted the report or acted on its recommendations, in part because by the time the report was released, the state’s agenda had been overtaken by the energy crisis, the collapse of the high-tech stock boom and the economic aftermath of the September 11, 2001 attacks. These events contributed to a \$24 billion budget deficit that shelved discussion of new spending plans.

The Environmental Goals and Policy Report that appeared irregularly during the 1970s is the closest the state has come to putting together an overarching state strategy. The initial report was an important acknowledgement that broad state policies needed first to be articulated, then integrated into functional plans for state projects as well as the discussion of local and private actions needed to implement state policies. The content of the report focused on state policies related to growth, development, and environmental quality only. But the report served as an insightful attempt to provide a broad strategy for policy in these areas with an eye toward implementation and recognition of the overlap between infrastructure planning and development. While the intent of the legislation for the report was ambitious, the appearance of the report has relied on the level of interest of the sitting governor. The report has been written and submitted only three times, once in 1973, updated in 1978 and revised again in 2003.

What has remained from this attempt at broad planning around environmental goals is the Governor’s Office of Planning and Research (OPR). The office was created under the direct control of the governor in 1970 to oversee environmental policy and to write the Environmental Goals and Policy Report to inform the Legislature on the state of California’s environment. OPR’s role has evolved since, as it, like the report it was created to produce, is subject to the changing priorities of

the governor. OPR has gone from a highly engaged and prolific planning entity under Governor Brown to a weaker organization under more recent administrations. It has been tasked with many more responsibilities in the years since 1970 and now has five main units: the State Clearinghouse, the legislative unit, the policy and research unit, the Office of the Small Business Advocate, and the Advisory for Military Affairs. The State Clearinghouse is where most of OPR's work is done as the state's "comprehensive planning agency" with myriad duties related to state and local planning around environmental policy, CEQA coordination and coordinating with local jurisdictions.

Governor's Office of Planning and Research

The main statutory functions of the Governor's Office of Planning and Research can be divided into two categories: 1) state planning, and 2) coordination of California Environmental Quality Act (CEQA) activities.

State Planning

OPR is designated in statute as the state comprehensive planning agency. Accordingly, it is responsible for the following programs and activities:

- Formulate long-range goals and policies for land use, population growth and distribution, urban expansion, land development, resource preservation and other factors affecting statewide development patterns.
- Assist in the preparation of functional plans by state agencies and departments which relate to protection and enhancement of the state's environment.
- Ensure that all state policies and programs conform to the state's adopted land use planning goals and programs.
- Create regional planning districts.
- Establish a Planning Advisory and Assistance Council.
- Prepare the state's Environmental Goals and Policy Report (EGPR) every four years.
- Develop and adopt guidelines for the preparation of city and county general plans.
- Provide general planning assistance to local governments.
- Serve as the state's "single point of contact" for evaluation of federal funding proposals.
- Prepare guidelines for the newly-required comprehensive service review and for fiscal analysis of incorporation proposals, as required by legislation that reforms local agency formation commission (LAFCO) duties, powers and procedures.

CEQA Coordination

OPR is responsible for carrying out various state level environmental review activities pursuant to the California Environmental Quality Act, including:

- Prepare state CEQA Guidelines (part of the California Code of Regulations) for implementation of CEQA. The guidelines are adopted by the Secretary for Resources following public hearings.
- Operate the State Clearinghouse which coordinates state level review of environmental documents prepared pursuant to CEQA.
- Post various environmental notices filed with OPR pursuant to CEQA.
- Assist in identification of state responsible and trustee agencies for development projects.
- Provide education and training to public agencies on implementation of CEQA.
- Maintain a database of environmental documents to streamline the preparation of environmental documents.
- Assist lead agencies in determining which other agencies may have CEQA responsibilities.
- Maintain CEQA notices in a manner that is accessible to the public on an Internet Web site.

Source: The Governor's Office of Planning and Research. "Functions." <http://www.opr.ca.gov/index.php?a=about/functions.html>. Accessed August 18, 2009.

The Governor's Office of Planning and Research was slated for potential elimination as part of the summer 2009 budget negotiations, and the change is reflected in the Governor's proposed budget for 2010-11. The potential elimination of OPR comes as the administration needs more collaboration with the Legislature, sharing resources and expertise rather than duplication, and proactive planning that incorporates innovation and addresses multiple issues, rather than piecemeal measures from siloed departments.

The California Performance Review

The 2004 California Performance Review devoted considerable attention to infrastructure planning, proposing the creation of a separate Office of Infrastructure Planning, Programming and Evaluation. The office, which was to be connected to the Business, Transportation and Housing Agency, would "provide the planning, budgetary, performance evaluation functions necessary to support coordinated statewide infrastructure planning and programming." The review also recommended that the governor form a "State Plan Coordination Council" consisting of cabinet members and chaired by the secretary of the Business, Transportation and Housing Agency, to coordinate state plans, such as those developed by the Business, Transportation and Housing Agency and the Natural Resources Agency.

The recommendations were not implemented, though two initiatives that followed embodied some of their spirit: Governor Schwarzenegger's Strategic Growth Plan and Strategic Growth Council are two efforts that come close to statewide, cross-sector planning that include elements of infrastructure in the discussion.

Strategic Growth Plan

Governor Schwarzenegger released his California Strategic Growth Plan in 2006 to provide a comprehensive framework for infrastructure investments over a 20-year period. The plan served as the basis for the 2006 and 2008 statewide bond measures and was a springboard for the creation of the Strategic Growth Council. The plan "outlines the governor's strategy for restoring and improving the state's infrastructure," including the following:⁵¹

- Highways, roads and transit systems, including high speed rail.
- Ports, levees and water supply systems.
- Schools and universities.
- Courthouses and correctional facilities.

- Protection and management of the state’s natural resources.

The Strategic Growth Plan recognizes that “[i]t is increasingly apparent that many of the statewide challenges – from greenhouse gas reduction to affordable housing to congestion relief to flood protection – include a strong land use and resource planning component as part of the solution.” The plan goes on to say that “there is a growing awareness among state agencies and departments that meeting the goals of the Strategic Growth Plan requires collaboration and coordination; the challenges are too great and the solutions are too multi-dimensional to address without a coordinated effort.” To lead this effort, the governor proposed creation of the Strategic Growth Council to “coordinate the activities of state agencies to promote environmental sustainability, economic prosperity, and quality of life for all residents of California.”⁵²

The plan is an enormous step forward by the governor in acknowledging the need for infrastructure planning, coordination among agencies and departments, and long-term focus for investments. The Commission commends the governor for his initiative in creating the plan and taking action on it.

Yet in its present form, the document essentially is a spending plan that identifies infrastructure needs and proposes specific bond spending to address those needs. The plan does not lay out a statewide vision and strategy, and it reflects only the governor’s perspective and not the priorities of the Legislature. It also does not discuss new or innovative strategies that might help achieve the broader policy goals mentioned in the introductory pages of the plan, though it proposes two entities to help move the state forward on infrastructure planning.

One is the Strategic Growth Council. The body was established in 2008 legislation to “assist state agencies in coordinating activities that protect and restore the state’s natural resources, as well as to distribute grants and loans to support the planning and development of sustainable communities.”⁵³ The council consists of six members: the director of the Governor’s Office of Planning and Research, the secretary of the Resources Agency, the secretary of the Environmental Protection Agency, the secretary of the Business, Transportation, and Housing Agency, the secretary of the California Health and Human Services Agency, and one member of the public appointed by the governor. The council first convened in February 2009 and has met several times since.

Support for the council currently consists of two staffers from the Governor’s Office of Planning and Research who contribute work time to the council alongside their existing OPR duties, as well as a handful of

similarly situated staffers from represented agencies. The council plans to hire two staff to support its activities.

The Strategic Growth Council shows potential for statewide planning and coordination across multiple sectors and issues. It enjoys the participation of several agency heads as well as a high-ranking member of the governor's staff, all working in unison on a variety of issues toward broad goals that involve multiple departments. The council actively solicits innovative ideas that will help further its goals by including at each meeting at least one example of a pioneering project that shows coordination of multiple parties, purposes or funding.

Strategic Growth Council

The Strategic Growth Council, created in 2008 by SB 732, has the following tasks:

- Identify and review activities and funding programs of member state agencies that may be coordinated to improve air and water quality and improve natural resources protection, increase the availability of affordable housing and improve transportation, meet state climate change goals, encourage sustainable land use planning and revitalize urban and community centers in a sustainable manner.
- Review and comment on the five-year infrastructure plan.
- Recommend policies and investment strategies and priorities to the governor, Legislature and appropriate state agencies to encourage the development of sustainable communities, such as those communities that promote equity, strengthen the economy, protect the environment and promote public health and safety.
- Provide, fund and distribute data and information to local governments and regional agencies that will assist in developing and planning sustainable communities.
- Manage and award grants and loans to support the planning and development of sustainable communities and report information about the grant/loan program annually to the Legislature, beginning in 2010.

Source: SB 732 (Steinberg). Ch. 729, Statutes of 2008.

Like OPR, the Strategic Growth Council was designed around environmental policy goals, yet the range of issues for which it is responsible is quite broad, recognizing that movement forward on environmental policy must embrace all parts of government, not just those whose mission is related to environmental protection. Though neither entity has the specific mission of infrastructure planning and development, each is designed to conduct broad, multi-sector statewide coordination and planning and may be well-suited to play a broader role in the state if they were expanded in reach and focus.

Much of the focus of the council has been on the implementation of AB 32 and SB 375, the state's two efforts to reduce greenhouse gas emissions, one through a focus on major sources of greenhouse gas emissions, the other through better land-use planning and development. AB 32 has generated considerable concern among businesses, which fear that regulations aimed at reducing greenhouse gas emissions will be costly and will put them at a disadvantage to out-of-state competitors.⁵⁴

Part of the council's charge is making recommendations to strengthen the economy.⁵⁵ Given that one of the most direct ways state government can enhance

the economy over the long term is through infrastructure investment, the Strategic Growth Council is an obvious location for statewide planning for infrastructure, particularly considering the council's role in planning for greenhouse gas reduction. Any large transit or surface transportation project, or water project expansion has significant greenhouse gas implications. In terms of efficiency and achieving the best possible outcome, the two planning activities should be coordinated and, whenever feasible, integrated, given their interrelatedness.

Such coordinated planning already has been undertaken on an ambitious scale in California in developing, and now, executing, the Goods Movement Action Plan. The two-track approach is challenging and time consuming, as people involved in that experience can attest.⁵⁶ The two-year process to develop the action plan combined infrastructure prioritization, economic development and environmental mitigation. It also involved coordinating with local and regional cities and agencies, important to any successful planning effort. Started in 2005, the project was led by the Business, Transportation and Housing Agency and the California Environmental Protection Agency.

The plan looked at the goods movement corridors connecting California's major ports to rail lines and freeways to Inland Empire consolidation and distribution centers to customers out of state. The goals included speeding goods movement out of the ports, diminishing congestion, reducing idling times for ships waiting to unload and for trucks waiting to move cargo on or off ship, as well as associated particulate pollution and other greenhouse gas emissions. One goal was to shift more cargo moved by diesel tractor-trailers to rail, to get heavy trucks off city streets and overloaded commuter routes. The plan hopes to protect jobs generated by port activity in cities like Long Beach and Los Angeles, keep shippers engaged and prevent them from thinking about alternative ports such as Seattle or Vancouver; create new blue-collar jobs in the growing logistics field in port regions as well as inland cities such as San Bernardino, Riverside and Stockton, and reduce respiratory problems caused by particulate pollution for people who live in urban areas surrounding ports.

The California Transportation Commission approved the \$3 billion program for 79 goods movement projects in April 2008. The money will come from the Trade Corridors Improvement Fund, one component of Proposition 1B passed by voters in 2006. Projects selected for funding were culled from 200 high-priority projects identified in the Goods Movement Action Plan, through dozens of meetings with stakeholders around the state. "It was painful, it was a lot of listening, but it was integrated, and that was the whole point," recalled one participant, Wally Baker, chair of the Green Tech Foundation of Long Beach.

Infrastructure Planning in Other States and Countries

California can learn from the example of its own Goods Movement Action Plan as well as from other strategy-driven priority-setting done elsewhere, such as the states of Washington and Utah, in New York City, and in other countries, such as Canada, which have developed a broad vision and strategy for their infrastructure plans. This year, the release of billions of dollars of stimulus money through the \$787 billion American Recovery and Reinvestment Act of 2009 has sparked discussion for the development of a new vision for federal infrastructure for the country.

Washington State Governor Leads Visioning Process

In 2005, Washington Governor Christine Gregoire established a Global Competitiveness Council, building on her predecessor's efforts, to develop a vision for global success by identifying and prioritizing issues important to citizens of the state, as well as to provide guidance and recommendations to enhance Washington's competitiveness in the world. The council pulled together industry, academic, political, government, labor and agricultural leaders from across the state, and focused them on determining what kinds of investments should be made in the state's human capital, physical capital, and intellectual capital.⁵⁷ The council was concerned that, with the fluidity of capital and communications technology erasing physical boundaries and modern corporations operating across national boundaries, Washington, with a population of 6.5 million, was not making the investments in itself to ensure it continued to create jobs and be attractive to business, despite the success at the time of Microsoft Corp., Boeing and Starbucks.

The Global Competitiveness Council formed five committees to discuss and determine the best methods to pursue investment strategies in the following areas: infrastructure, marketing, political environment, research and innovation, and skills. Each committee outlined specific recommendations, listed measurements of completion and identified the parties involved in taking action.⁵⁸

The governor used the council's final report, together with input from workforce and economic development activists and other Governor's Summits, to write a vision for the future called The Next Washington. Three components round out the governor's vision and strategy released in 2007: "education and skills," "foundation for economic success" (infrastructure), and "Washington is open for business" (marketing). The plan specifies actions to be taken in each of these areas and discusses

performance measurements that align with state and regional priorities and, in total, add up to significant movement forward for the state.⁵⁹

Envision Utah: Partnership for Planning

Envision Utah, created in 1997, is a public-private partnership that aims for a big picture approach to growth in the Greater Wasatch Area of Utah, the region that is experiencing most of the state's population boom. Envision Utah grew out of an effort by the Coalition for Utah's Future's Quality Growth Steering Committee. The coalition formed in 1988 in response to the state's recession as a way to boost the economy and attract businesses. By 1995, the trend had reversed and the state was seeing a growth spurt, prompting concerns about quality of life and an acknowledgement that it needed a growth strategy to manage its expansion.

Creating the partnership took years of learning, educating and coordinating, given a state culture that emphasizes local control, does not easily embrace regional governance and historically has shied away from long-term planning.⁶⁰ Prior to Envision Utah, fragmented governance had produced little, if anything, in the way of an overall approach to planning.⁶¹

Because of the political hurdles of addressing regional, long-term growth in Utah, the steering committee turned to a public-private partnership model for addressing growth issues and planning. The steering committee drew on a public opinion survey to understand area residents' concerns, a study of other areas' experiences with growth and coordination to gain public support for an initially controversial partnership idea. The coalition participated in a growth summit in 1995 and made presentations to the Legislature. The coalition has worked since the mid-1990s with the Governor's Office of Planning and Budget on research into growth issues and on Envision Utah.⁶²

Three years of public discussion and work led to recommendations toward a "Quality Growth Strategy" that included analysis of transportation and land use issues and ideas. Envision Utah's analysis showed that, when compared with the baseline, in 2020, the Quality Growth Strategy would be expected to save 171 square miles of land, reduce car emissions by 7.3 percent, reduce traffic congestion and need \$4.5 billion less in investments for transportation, water, sewer and utility infrastructure.⁶³

PlaNYC: Visioning Through Intense Public Input

In densely populated and highly urbanized New York City, a functioning infrastructure system is essential to moving millions of people around daily, providing them with clean water and air, and supporting the needs of the nation's financial headquarters. Having a plan to keep the infrastructure functioning in the future is just as essential. Under Mayor Michael Bloomberg, the city launched PlaNYC in December 2006, to focus residents and businesses on the need to prepare for more population growth, updating, replacing and expanding aging infrastructure, and anticipated climate change and rising sea levels, no

small consideration where all five boroughs have significant water front.

The process began as an attempt to create a strategy for managing city needs within its limited land availability. Planners soon realized that “the scale, intricacy, and interdependency of the physical challenges” in the city called for a more holistic approach.⁶⁴ As a result, planners analyzed not only physical elements but also the values that are embedded in any policy choice for how to address physical needs. The plan further recognized how a strategy in one area – such as land, water, transportation, energy, air quality and climate change – impacts others, and it calls for a “new level of collaboration between City agencies and among [its] partners in the region” to address this interdependence.⁶⁵

In contrast to the approach used by Washington, New York City officials built in residents' values through an intense four-month listening process, meeting with more than 100 advocacy groups, holding neighborhood meetings and collecting more than 3,000 e-mails, asking people what they thought the city should be. The process served two purposes – taking input from the public and raising awareness among the city's 8.3 million residents. PlaNYC also pulled in initiatives from city agencies and input from its universities and

PlaNYC

New York City's PlaNYC program built its sustainability strategy on plans organized around 10 goals that addressed three challenges: the city's growth, its aging infrastructure and its environmental vulnerability.

Getting Bigger

1. Create homes for almost a million more New Yorkers, while making housing more affordable and sustainable.
2. Improve travel times by adding transit capacity for millions more residents, visitors and workers.
3. Ensure that all New Yorkers live within a 10-minute walk of a park.

Growing Older

4. Develop critical back-up systems for our aging water network to ensure long-term reliability.
5. Reach a full “state of good repair” on New York City's roads, subways and rails for the first time in history.
6. Provide cleaner, more reliable power for every New Yorker by upgrading our energy infrastructure.

Living Greener

7. Reduce global warming emissions by more than 30 percent.
8. Achieve the cleanest air in any big city in America.
9. Clean up all contaminated land in New York City.
10. Open 90 percent of our waterways for recreation by reducing water pollution and preserving our natural areas.

Source: Mayor Michael R. Bloomberg. City of New York. “PlaNYC: A Greener, Greater New York.”

a newly-created Sustainability Advisory Board. The resulting publicly produced vision – organized under the challenges of growth, aging infrastructure and environmental sustainability – articulated a list of 10 goals that then became the framework for planning for land, air, water, energy use and transportation improvements. This vision is intended to be used to guide policy and make investment decisions for the next three decades.

Canada Creates a Vision and Strategy

In order to ensure consistent policy-making and to strategically focus its efforts on initiatives that will further Canada’s competitive position in the world, Canada outlined its vision in its Advantage Canada plan in 2006. The plan acknowledges that “[w]hen government policies and plans are complementary, their positive impact is multiplied,” and it identifies the following principles to serve as prisms through which policy decisions can be made in a consistent and cohesive manner:

- ***Focusing government.*** Government will be focused on what it does best. It will be responsible in its spending, efficient in its operations, effective in its results and accountable to taxpayers.
- ***Creating new opportunities and choices for people.*** Government will create incentives for people to excel – right here at home. We will reduce taxes and invest in education, training and transition to work opportunities so Canadians can achieve their potential and have the choices they want.
- ***Investing for sustainable growth.*** Government will invest and seek partnerships with the provinces and the private sector in strategic areas that contribute to strong economies – including primary scientific research, a clean environment and modern infrastructure.
- ***Freeing businesses to grow and succeed.*** Government will create the right economic conditions to encourage firms to invest and flourish.⁶⁶

In each of these areas, Canadian leaders outlined several goals and policy commitments to move its overarching vision forward. For example, as part of its strategy for investing in sustainable growth, the third of its four core principles, the plan discusses the importance of high-quality, modern infrastructure and commits the government to work toward a comprehensive plan for infrastructure that includes the following:

- Long-term predictable funding.

- A fair and transparent provincial allocation for a program envelope to support: 1) improvements to the core national highway system, 2) large-scale provincial, territorial and municipal projects such as public transit and wastewater management, and 3) small-scale municipal projects.
- Separate national infrastructure funds, accessible on a merit basis, to support: 1) public-private partnership (P3) projects, and 2) gateways and border crossings, particularly projects selected pursuant to a new national gateway and trade corridor policy.
- A requirement that provinces, territories and municipalities consider P3 options for all larger projects receiving funding from the program envelope and the national infrastructure fund for gateways and border crossings.
- The establishment of a federal P3 office to help facilitate the increased use of public-private partnerships in Canadian infrastructure projects.⁶⁷

To implement these infrastructure-specific goals, Canada created an infrastructure program in 2007 called Building Canada, a “comprehensive, long-term infrastructure planning and development initiative that provides a framework for the federal government to manage and coordinate federal investments and collaborate with provinces, territories, and municipalities.”⁶⁸ Building Canada aims to provide a structure for federal coordination and funding of provincial and local level projects; support capacity building, long-term planning and research to increase the knowledge-base of infrastructure development locally; and facilitate and support a variety of project financing mechanisms at each level.⁶⁹

State Needs Infrastructure Vision and Process

California has a responsibility to its citizens to use its resources wisely. To accomplish this, the state must set an infrastructure vision for the future based on an understanding of infrastructure needs and that incorporates broad state policies to ensure common goals are sought. The vision must be accompanied by a state strategy that identifies how the vision will be pursued, with specific actions to be taken in the near and long-term to achieve the vision.

The National Governors Association recommends a multi-pronged approach to state infrastructure development that includes coordination of infrastructure decisions across government agencies and from state to local levels; planning and prioritization that emphasizes environmental protection, demand management strategies and new technology; state

standards for project selection and performance; and diverse and new revenue sources to pay for infrastructure.⁷⁰

This kind of high-level, cross-discipline strategic planning will not be easy. The state consists of numerous state agencies, dozens of departments, hundreds of program areas, thousands of employees, and all kinds of infrastructure resources ranging from buildings, roads, sewer systems, water facilities, transportation systems, schools and communications networks. The governor and Legislature must find a way to coordinate cross-sector planning that includes input from the various departments and agencies to inform broad policy-making and drive these larger decisions.

Such discussion should focus on providing a sustainable level of infrastructure services for Californians at the lowest possible cost, rather than simply building more infrastructure to meet estimated demand.

To facilitate this coordination, California should establish a statewide strategic planning and action entity within the governor's office that can work horizontally across agencies and departments as well as vertically with local and federal organizations on infrastructure development in the state. The planning office must have the participation of the leaders of state agencies with a significant infrastructure component, and it should receive input from other agencies and departments as needed. It should communicate with the

A New Approach to Infrastructure

The National Governor's Association recently concluded that infrastructure across America is "no longer adequately meeting the nation's needs and faces several long-term challenges that affect our ability to maintain and enhance our competitiveness, quality of life, and environmental sustainability." Even the recent federal stimulus money will not suffice. Infrastructure is plagued by underinvestment, inadequate revenue, and declining performance, and is in need of improved planning that incorporates energy and climate change efforts - a truly refined approach. More money alone is not the answer. Instead, states should embrace the following six principles as part of a new approach:

1. Expand and diversify revenue sources for infrastructure development and maintenance.
2. Coordinate infrastructure decisions across government agencies and levels of government as well as between states and regions and ensure that energy and environmental costs and concerns are considered.
3. Prioritize comprehensive planning efforts that will reduce or manage demand to reduce the cost of or avoid new capacity projects.
4. When adding capacity is necessary, look first to environmentally beneficial alternatives to conventional infrastructure, including transit and intercity rail, distributed and central clean and renewable energy, energy efficiency and smart grid projects, and plug-in hybrid and electric vehicle infrastructure.
5. Set clear state-directed cost-benefit criteria and performance targets for infrastructure investments, collect data and measure success, and provide for accountability and transparency by reporting performance pegged to a variety of well-defined, outcome-based metrics.
6. Incorporate appropriate new technologies wherever practical.

Source: Darren Springer and Greg Dierkers. Center for Best Practices. National Governors Association. 2008-09. "An Infrastructure Vision for the 21st Century."

legislature during the planning process and after completing its vision and strategy.

The Strategic Growth Council, with its commitment from agency leaders, leadership from the governor's office, and all-encompassing agenda, is currently the best vehicle for this planning process, though a revamped and refocused Governor's Office of Planning and Research – contrary to the office facing imminent closure in 2010 – also could serve this purpose. The Strategic Growth Council is statutorily assigned the responsibility to review the five-year infrastructure plan and is already considering how to incorporate an infrastructure component into its activities. The council should be expanded to conduct statewide infrastructure planning and equipped with additional staff, borrowed from member agencies, to support the council's work. For example, council membership could include the secretaries of the Labor and Workforce Development Agency, which could provide input on where infrastructure is needed based on workforce trends and industry growth and how projects might stimulate economic development in a particular region, and the State and Consumer Services Agency, which houses the Department of General Services, the state's contracting and procurement office that also manages state property. The director of the Department of Finance also could provide valuable input as a member of the council, given the department's expertise with the five-year infrastructure plan. In each of these cases, the need for maintaining a workable size and structure of the council must be balanced against the need for input from additional relevant agencies and departments. In other words, these players could be added as members of the council, or could otherwise participate as advisers to the council so as to avoid making the council too big to effectively act.

A statewide strategy must recognize that a vibrant economy is essential to making the changes required to reduce greenhouse gases and to support sustainable urban growth. Many fear that policies to reduce greenhouse gas emissions will hobble the state's economy. The infrastructure investments the state makes must deliver economic value at the same time they drive the changes envisioned under AB 32 and SB 375. For this reason, the state's Strategic Growth Council must be explicit in ensuring that enhancing economic growth is given appropriate priority alongside greenhouse gas reduction and sustainable development.

Such a strategy also must build into its decision-making process an opportunity to assess the best way to meet a given goal. If the state's goal is to reduce carbon emissions and increase mobility by reducing congestion, is the solution more freeway lanes, or a High Occupancy Toll

lane and greater transit options? Or incentives to create more housing near transit centers?

The state plan further must include input and buy-in from the state Legislature. The Strategic Growth Council is made up of governor's office appointees and is essentially an arm of the governor's administration. The Legislature must take a more active role in infrastructure planning and must establish a process where it can consider infrastructure development in a systematic fashion according to a regular schedule.

To nurture a more active role, the Legislature should create a separate committee devoted to infrastructure. The Commission in 2009 recommended forming a committee for bond spending oversight; the two functions – infrastructure and bond oversight – are related and could be joined into one committee.⁷¹ Such a committee would establish a permanent process for the Legislature to join in the statewide infrastructure planning and take necessary legislative actions to implement the state's strategy.

Improving California's Infrastructure Services

In a 2009 article produced by UC Berkeley's Institute of Urban and Regional Development, David Dowall and Robin Ried proposed the California Infrastructure Initiative, urging the state to focus on infrastructure outcomes, such as reduced congestion or the availability of clean drinking water to all Californians, and a customer orientation of high value for taxpayer dollars. The proposal stresses the need for a visioning process to identify overarching sustainable goals and strategies, determine demand and focus investments on desired outcomes. It recognized four activities essential to effective infrastructure policy that should be "coordinated in a flexible and collaborative manner" jointly by the governor and the Legislature:

1. ***Set strategic, programmatic and capital investment priorities:*** Engage in a process to identify overarching sustainable growth and development goals and strategies, determine demand, focus investments on desired outcomes, and improve cross-sector infrastructure investment programming and coordination. This step would use rigorous processes for determining the most effective means for meeting strategic goals, such as deciding whether to expand or improve existing facilities or build new facilities to generate critical services.
2. ***Use VFM [value for money] calculations to select the best delivery method:*** Build a platform to facilitate deciding on the most efficient method for delivery, such as governmental provision, P3, or some alternative institutional arrangement. In all cases, carefully analyze alternatives to make sure society is getting the best possible service at lowest cost for both new and existing investments.
3. ***Create centers of excellence to share knowledge and advise state and local governments:*** Build management capacity by working with state agencies and local governments to provide technical assistance and advice on international best practices. Disseminate best practices, successful experiences, and methods to protect the public interest, and provide model contracts.
4. ***Provide a service bureau to perform P3 procurements on behalf of state and local government agencies:*** Support state agencies and local governments to effectively negotiate complex procurement contracts, and work with state and local governments to bundle small infrastructure projects into multi-client efforts to lower transaction costs and leverage economies of scale.

Source: David Dowall, Robin Ried. Berkeley Institute of Urban and Regional Development. February 26, 2009. "Improving California's Infrastructure Services: The California Infrastructure Initiative." Written testimony to the Little Hoover Commission.

Another way to augment the Legislature's role is to integrate infrastructure planning and decision-making into the budget process. Often, funding is allocated to departments based on the old ways of

Tying Infrastructure Needs to the State Budget

Treasurer Bill Lockyer, in the Office of the Treasurer's annual Debt Affordability Report, urged the governor and the Legislature to establish a Commission on a Master Plan for Infrastructure Financing and Development, modeled on the 1959 Commission on a Master Plan for Higher Education, set up by the Legislature and Governor Edmund G. "Pat" Brown. "The Commission would complete a thorough and public assessment of the state's infrastructure needs, costs and financing alternatives. And it would produce a blueprint and a time table for building a California that is prosperous and a great place to call home." Lockyer urged the Legislature and governor to permanently and systematically incorporate the state's infrastructure needs into the annual budget process.

Source: Bill Lockyer, California State Treasurer. October 2009. "State of California Debt Affordability Report."

providing infrastructure, to maintain the status quo in each program area, rather than to pursue new technology or systems that might achieve more of the state's overall goals. By incorporating infrastructure planning and strategic thinking into the budget process, these broader issues can be woven into the budget fabric, so that when program funding is allocated, the money is aligned with broader policy goals to encourage desired infrastructure outcomes.

Strategic planning for infrastructure requires collaboration on all fronts, from federal to local jurisdictions, across all program areas, bolstered by input from the public, and with the joint leadership of the governor and the Legislature. To facilitate this partnership, the state must put in place important mechanisms that will ensure infrastructure visioning and strategizing will continue into the future.

Recommendation 1: The governor and Legislature should conduct statewide infrastructure strategic planning and needs prioritization that assesses needs across state operations and sets an infrastructure vision for California that gives equal priority to both environmental and economic growth goals.

- ❑ The Legislature should expand the role of the Strategic Growth Council beyond its current coordination of state policies and activities for green house gas reduction and sustainable regional planning to include infrastructure planning that supports both economic growth and the state's environmental goals.
 - ✓ The Strategic Growth Council should synthesize the information received from agencies and departments to create an integrated and overarching infrastructure strategic plan that sets a broad vision for California's future, benchmarks for implementation and measureable goals toward progress. This plan should replace the current five-year infrastructure plan.
 - ✓ Building on the state's current five-year infrastructure planning process, the infrastructure strategic plan must

integrate and prioritize projects by how they can support economic growth and meet state goals for reducing greenhouse gas emissions and urban sprawl. There must be a rational and transparent process for identifying and prioritizing the most urgent needs. Resource limitations mean that choices must be made among competing goals. The Strategic Growth Council must recognize that such choices must be made, with emphasis on long-term goals, return on the investment of limited dollars, as well as other fiscal constraints. The plan should include recommendations for financing as well as alternative strategies that can achieve the same goals, such as demand management.

- ✓ The council's charge should be made explicit in recognizing that the state cannot meet its ambitious environmental goals without the support of a vibrant economy that can generate the wealth needed to fund such a transformation.
- ✓ The governor should require state agencies and departments to report to the Strategic Growth Council with their assessments of infrastructure needs and developing trends; infrastructure priorities; ways the department is or could be maximizing existing resources; and suggestions for policy, financing, and technological changes that could help deliver the projects more efficiently.
- ✓ The infrastructure strategic plan should include recommendations for legislation, state agency actions and budget changes needed to implement the chosen priorities and should be submitted to the Legislature biennially in January, at the beginning of each two-year legislative session.
- ✓ The Strategic Growth Council should be expanded beyond its current membership to include other state agency leaders with significant involvement in infrastructure development. Currently, the council includes the following members:
 - Director of the Office of Planning and Research, Chair.
 - Secretary of the Business, Transportation and Housing Agency.
 - Secretary of the Environmental Protection Agency.
 - Secretary of the Health and Human Services Agency.

- Secretary of the Resources Agency.
- One public member appointed by the governor.

The following members should be added to the council:

- Director of the Department of Finance.
 - Secretary of the State and Consumer Services Agency (which houses the Department of General Services).
 - Secretary of the Labor and Workforce Development Agency.
- ❑ State agencies should consult local and regional entities in their respective areas to assess local needs and priorities, and catalog these needs so that they can be prioritized by the governor, the Strategic Growth Council and the Legislature.
 - ❑ Each house of the Legislature should establish an infrastructure planning committee to review the Strategic Growth Council's infrastructure strategic plan and provide a forum for dialogue with state and local infrastructure partners through legislative hearings. The Legislature should respond to the strategic plan through its legislative and budget processes. The governor and Legislature should align program funding to incentivize state goals set in the infrastructure strategic plan.
 - ❑ The Legislature and relevant state agencies should work to streamline funding for local infrastructure development, whether from state or federal sources, in order to eliminate duplication, facilitate project delivery and ensure that money can be used for project costs rather than compliance costs.

Infrastructure Financing and Delivery

To deliver on its obligation to provide reliable water and roads, public safety and public education to its people, California has opportunities to improve the way the state pays for and delivers infrastructure. In the previous chapter, the Commission recommends an overarching state strategy for infrastructure development to establish its goals and determine what mix of infrastructure – whether transportation projects, school construction or water project improvements – the state needs to meet its goals. Embedded in that strategy must be a process to determine how the infrastructure will look, how the state should deliver it and how the state – and its people – will pay for it.

The sharp drop in General Fund revenues as a result of the recession has started a conversation about how the state pays for projects and how the state decides what it can afford, a conversation that has been in part detoured by the influx of billions of dollars in federal stimulus money and the need to spend it quickly. In some cases, the federal money has been used strategically, in part because of federal requirements to do so, as was the case with federal money directed into badly needed state health information technology. Though the federal government may infuse additional stimulus funds to buoy struggling states, California should not calculate such infusions into its long-term infrastructure financing strategy.

California’s budget crisis clarified two realities that will be important for state decision makers to recognize as they adjust the state’s goals for infrastructure investment to its reduced spending ability:

- **Financing a project and paying for it are separate activities.** Over the past decade, the state has relied increasingly on general obligation bonds to finance investment in infrastructure, which must be repaid from the General Fund at a rate of roughly \$2 for every dollar borrowed. The Legislature has been reluctant to explore alternative funding sources, such as user fees or targeted special taxes, in part because it has enjoyed the benefits of rising General Fund revenues that could be used to cover rising debt service costs of general obligation bonds. But with the Department of Finance projecting General Fund operating deficits

“We don’t have enough money. We can come up with the best plans in the world, and unless we as a state come up with a mechanism to achieve those, then we are just going to have a great plan on a shelf .”

Senator Bob Huff

through the 2012-13 fiscal year, California no longer has that luxury.⁷² By law, debt payments take priority over almost all other spending. Finding sources other than the General Fund to pay for projects will reduce the need for financing costs to cut into spending for other important state programs.

- ***The state cannot afford to build all of the infrastructure needed to meet predicted demand.*** And it probably does not have to. A build-only strategy ignores the potential opportunities of using existing infrastructure more intensely, such as using educational facilities year-round, or more strategically, such as increasing tolls during rush hours to reduce traffic congestion by reducing demand. Moreover, the state has never been the only supplier of infrastructure.

“California does not generate enough money to pay for infrastructure... Bonds are not revenue, but debt.”

Richard Little

The state no longer can rely on general obligation bonds to fund state infrastructure projects to the extent that it has over the last few decades, though general obligation bonds have and should continue to have a place in the range of options open to policy-makers. General obligation bonds are best suited for projects in which the public benefits by extending access to the public goods regardless of a user’s income, such as educational facilities or hospitals.

Given the limits on state General Fund revenues and the magnitude of the state’s infrastructure needs, the state should seek other methods to finance projects, including, where there is a demonstrable public benefit, the use of financing from the private sector. The state should explore raising revenue to pay for projects from sources that are more closely tied to use of the project, both to pay financing and construction costs, as well as maintenance and operating costs.

California has not widely employed new techniques and technology used elsewhere to maximize the value of existing and new infrastructure. Linking user fees more closely to actual use not only could generate revenue for specific purposes, but also can help the state manage demand, maximize new and existing resources, and monitor the use of a resource, which could provide information that could help the state prioritize and allocate future infrastructure spending. New technology, such as transponders to track vehicle-miles-traveled and congestion management technology can help the state move in this direction.

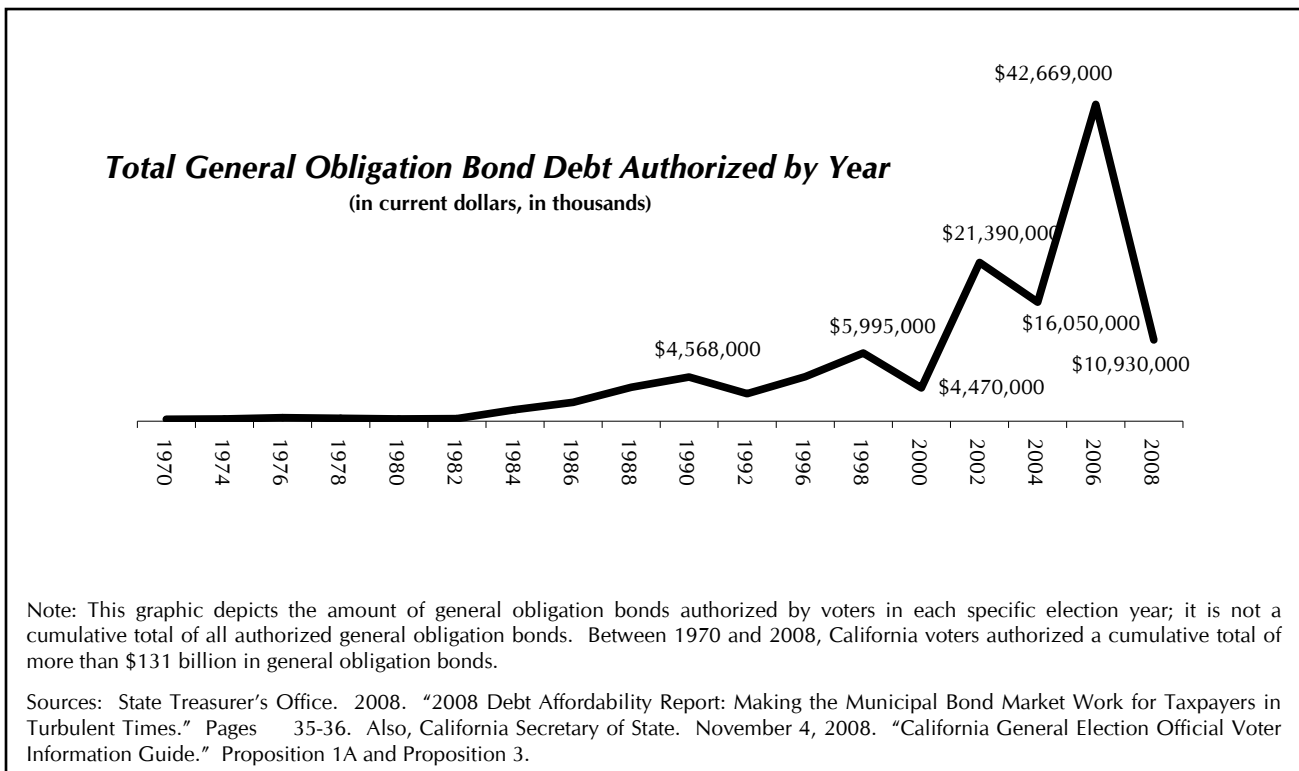
Better assessment of infrastructure use and emerging trends, along with more strategic planning that incorporates multi-use concepts, can help ensure the state is using its current infrastructure – and planning to use its newly built infrastructure – to its maximum value. More sophisticated models for estimating demand can help the state meet

multiple goals, such as improved mobility *and* better air quality, or less crowded university campuses *and* more college graduates.

While much of the current political attention is centered on budgeting and program cuts to deal with the ongoing fiscal crisis, the governor and Legislature must also find ways to make the infrastructure investments that can be the foundation for renewed economic growth.

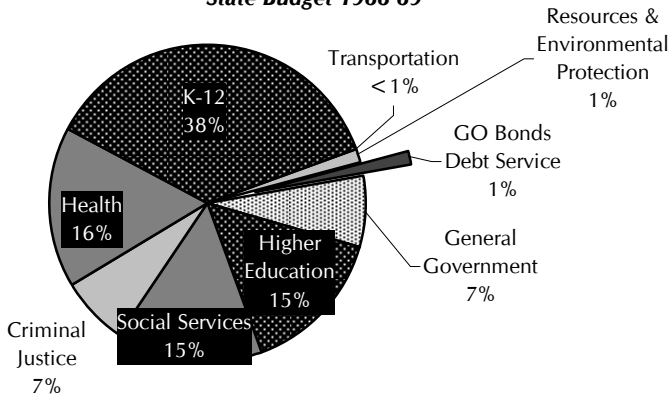
General Obligation Bonds: Overused Workhorse

General obligation bonds have enjoyed popularity in California because they are relatively easy to pass, requiring only a majority vote, and they appropriately apportion the cost of an infrastructure project over the several generations that will benefit from its existence.

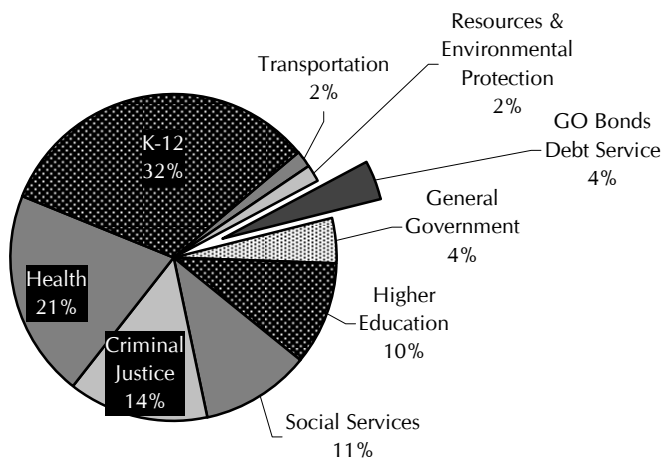


Since the mid-1990s, general obligation bonds have been used to finance more than half of the state’s infrastructure spending. Since 2006, voters have given the state authority to borrow more than \$54 billion, increasing by 70 percent the state’s overall general obligation borrowing authority to \$131 billion. The governor’s strategic growth plan calls for further general obligation borrowing of \$48 billion through 2016.⁷³ In the 2009 Debt Affordability Report, the State Treasurer’s Office estimates that the state will issue a total of \$225.98 billion in general obligation bonds from now through 2028, an amount that anticipates the

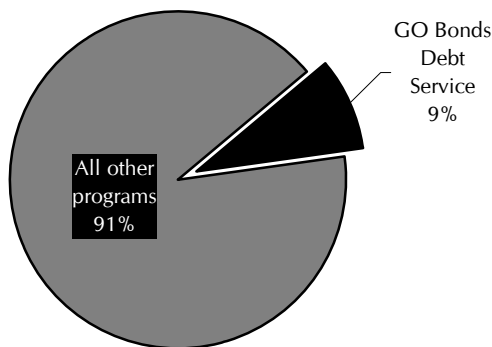
State Budget 1988-89



State Budget 2008-09



Projected GO Bond Debt Service 2014-15



Source: Legislative Analyst’s Office. Historical Data. State of California Expenditures, 1984-85 to 2009-10. Also, Legislative Analyst’s Office. The 2010-11 Budget: California’s Fiscal Outlook. November 2009.

borrowing in the governor’s plan.⁷⁴ In November 2009, the Legislature approved a general obligation bond package for water projects totaling \$11.14 billion, which will be put before voters in November 2010.

Current debt service on outstanding general obligation bond borrowing is \$6.01 billion, or 6.7 percent of the projected 2009-10 General Fund revenues of \$89.54 billion. If the state borrows using general obligation bonds at the rate anticipated by the State Treasurer’s Office, debt service as a percentage of General Fund revenues will climb above 10 percent by 2014-15. Both the rise in general obligation bond financing as well as the reduction in state revenues can cause the debt service ratio to increase. The state has experienced both in recent years, and with operating deficits projected for the next three years, increasing the share of the budget allocated to debt payments will mean further cuts in spending on state services, a painful process lawmakers experienced repeatedly in 2009. As a Treasurer’s Office official put it: “It’s a zero-sum game. Every additional dollar you spend on debt service is a dollar you cannot spend to educate your kids, provide health care, protect the environment or fight fires.”⁷⁵

One of the drawbacks of relying on bonds is that in general they are tied to building specific projects, such as roads or hospitals or levees. Most do not authorize spending for operating or maintaining a project once it is built. But every project financed by general obligation bonds introduces not only financing costs, but maintenance and operating costs as well, costs that typically are not fully recognized in budgets after a project is built. California drivers can see the result: Roughly 27 percent of the state’s roads are in distressed condition, Caltrans director Will Kempton told the Commission, as evidenced by cracked or fraying pavements and growing potholes. Budgeting for the cost

of owning and operating a state asset over its lifespan is not only responsible governance, but it saves money: A dollar spent on maintenance avoids \$6 in repairs and ultimately \$20 in reconstruction, Mr. Kempton testified.

Given their increasing share of financing for infrastructure projects, Ellen Hanak, research director of the Public Policy Institute of California, has described general obligation bonds as an “overloaded workhorse.”⁷⁶ In tight budget times, added use of general obligation bonds places an increased burden on the General Fund, suggesting that this option is reaching its maximum load, Ms. Hanak told Commissioners.⁷⁷

Ms. Hanak’s comments are echoed by other public finance experts, who emphasize that without major spending cuts or tax increases, the practice of relying on general obligation bonds to fund infrastructure over the long term is unsustainable.

In the transportation arena, the need to find alternatives is fast approaching. Most of the \$19.9 billion in borrowing voters approved through Proposition 1B for highway improvements and other transportation projects has been allocated.

“In two years, that money will be out the door,” Mr. Kempton told Commissioners. “After that, then what? The longer term picture is very bleak.” Even the recent legislation authorizing public-private partnerships is not enough; without a revenue stream, the Department of Transportation cannot move forward on needed projects, Mr. Kempton said, adding, “we need to make some changes in how we raise money.”⁷⁸

Finding Other Ways to Meet Infrastructure Needs

Economists and public finance experts emphasize that the ability to borrow money for a project is a separate issue from the ability to pay for a project. If the state does not want to devote a larger share of the General Fund to debt service, it will have to find other sources of money to pay for new and existing projects. At the same time, it can expand efforts to manage existing infrastructure assets more intensely to avoid the need to add capacity, such as more classroom space or an additional lane on a crowded freeway.

In general, the state has four main ways to generate more revenue:

- Alter the tax structure.
- Impose user fees.
- Seek federal money.

- Sell state assets.

There is sufficient opposition to new taxes in the Legislature to conclude that a general tax increase is unlikely. Seeking federal money has been a popular alternative, but funds from Washington, D.C. typically come with strings attached, often require matching funds and, given the outlays already made through the American Recovery and Reinvestment Act stimulus program, are not likely to be available in the amounts needed to sustain California's long-term needs. Selling state assets is a limited option the state already is exploring, but its greatest drawback is scale; the state could not sell enough assets to cover the hundreds of billions of dollars of investment required over the next decades for infrastructure. Selling assets to raise money and seeking grants from the federal government simply do not represent a reliable or large enough funding source to support an infrastructure finance strategy.

Senate Transportation Chairman Alan Lowenthal told the Commission that further investigation of a fuel tax and "vehicle-miles traveled" tax is warranted, though he expressed little confidence that the Legislature would adopt such measures to address current needs. If the state cannot provide sufficient funding for transportation, Senator Lowenthal said, it should empower local jurisdictions to raise more revenue themselves. Local jurisdictions currently are limited in how they can raise money by a two-thirds requirement for bond measures other than for education, and by restrictions on imposing tolls or user fees on any state-supported road or bridge.

At the state level, it is difficult to envision where money for further infrastructure investment will come from, given the trade-offs involved in additional borrowing, opposition to a general tax increase and the low likelihood for an unexpected sustained surge in revenues. In this context, state policy-makers have to reconsider user fees in one form or another if California is to build a foundation for economic health.

Challenges Facing Local Infrastructure Development

California relies more heavily than most states on local and regional agencies to build and manage infrastructure, yet it has some of the strictest rules in the nation for raising local revenues. Proposition 13 in 1978 limited property assessments and mandated supermajority (two-thirds) voter approval for the passage of special taxes. California also is one of only a handful of states that require a supermajority voter approval to pass a local general obligation bond. The addition of Proposition 218 in 1996 reduced the authority of locally-elected governing boards to raise revenue, requiring a majority vote for general taxes, assessments and property-related fees. These restrictions put added pressure on the use of state general obligation bonds as they are much easier to pass than local bonds, and they also have led to a rise in the creation of special districts that have the ability to collect fees for specific services upon a two-thirds vote of only those living in the district. Some argue that the latter process has taken on a role traditionally occupied by local city councils, and results in a less democratic process that often is exempt from government transparency laws.

Proposition 39, enacted by voters in 2000, reduced the two-thirds voter requirement to a 55 percent threshold for local general obligation bonds to pay for K-12 and community college school facility construction. The result has been a significant increase in local investment in long overdue school modernization and construction.

Local transit agencies increasingly have been taking on a greater responsibility for planning and funding infrastructure projects with locally raised revenues through local sales tax increases. User fees are less of an option for local jurisdictions, largely because user fees cannot be applied to roads that have received state funding without Legislative approval. RAND Corporation's Martin Wachs told the Commission that sales taxes can be powerful generators of revenues, but compared to user fees, they allow frequent users of transportation to pay less than those who drive less often. Benefits of local sales tax increases include direct local voter approval; a built-in expiration; specific lists of projects to be financed by the taxes and local control over the revenues. But they also fundamentally change the way transportation is planned and financed, Wachs said. Shifting to a local general tax base from a user fee eliminates the opportunity to encourage more efficient use of the system. Sales taxes also can undermine the planning ability and authority of regional transportation organizations by focusing resources on counties or smaller units of governments. By strictly limiting the projects funded by the taxes, often for long periods of time, local officials lose the flexibility to meet changing needs. Moreover, the campaign process for a successful ballot proposal can shortchange cost-benefit analysis and other analytical processes, preempting the use of technical expertise that can create long-term value.

There may be limited room for further local sales tax increases, especially after the state, to help bridge its revenue gap in 2009, added 1 percentage point to the existing rate through June 30, 2011. The minimum sales tax statewide now is 8.25 percent, but the addition of local sales taxes has pushed rates in some of the most populous areas of the state even higher. In Los Angeles County, the sales tax rate is 9.75 percent, except in Avalon and Inglewood, where it is 10.25 percent, and in Pico Rivera and South Gate, where it is 10.75 percent. San Mateo, Contra Costa, Santa Clara, San Francisco and Marin counties all have sales taxes of 9 percent or higher.

Aside from funds received through taxes or borrowing, revenue from state and federal funding streams to pay for infrastructure is complex and piecemeal. No project has only one source of funding, with most projects receiving money from dozens of different streams with a variety of strings attached. In some cases, this web of funding sources serves as a barrier to getting a project started, approved or completed, as it imposes complex requirements on local jurisdictions in exchange for the funds provided. In addition, local leaders argue that the state's system of infrastructure funding fails to incorporate incentives to encourage desired behavior by users, particularly in transportation.

Lastly, the devolution of decision-making away from the state to the local level also creates incentives to support projects that produce local benefits at the expense of building support for projects that benefit long-distance travelers, or the state as a whole.

Sources: Ellen Hanak and Davin Reed. Public Policy Institute of California. January 2009. "Paying for Infrastructure: California's Choices." Page 6. Also, Vladimir Kogan and Mathew McCubbins. University of California, San Diego. For the University of Southern California Keston Institute for Public Finance and Infrastructure Policy. May 21, 2008. "The Problem of Being Special: Special Assessment Districts and the Financing of Infrastructure in California." Also, Martin Wachs, Director of Transportation, Space and Technology Program, Rand Corporation. March 26, 2009. Testimony to the Little Hoover Commission. Also, California Board of Equalization. "California City & County Sales and Use Tax Rates." 2009. Also, Little Hoover Commission Advisory Committee Meeting on Local Transportation Infrastructure. May 5, 2009.

User Fees: Paying for Benefits Received

For many services, fees can provide an opportunity for the user to see the real costs of a service by paying for it directly, rather than by way of a general tax that goes to a fund that is virtually intangible to the taxpayer. User fees make economic sense in that when users pay for something directly, they have a financial incentive to use it efficiently, whether it is a road, water or electricity. More efficient use of a public good extends its life, and charging a fee linked to its use generates a revenue stream that can be used for maintenance and repair, or for other desired public goods. Linking the benefits of using a public good to the cost of providing it discourages waste. General taxes provide no such incentive.

Vehicle Miles Traveled

One way to generate revenue through user fees is by charging drivers for the number of vehicle miles they travel. The state of Oregon has pioneered this system in the U.S., running a one-year pilot program that ended in 2007 that used global positioning systems to track each participating vehicle's mileage and charge each driver based on his or her travels, rather than charging the traditional gasoline tax. The GPS transponders communicated with receivers at gas stations included in the study and relayed the number of miles each vehicle had traveled since its last fueling stop. The gas pumps then charged those drivers a mileage-based tax in lieu of the gas tax.

The pilot program involved 280 volunteers in the Portland area and ran from April 2006 to March 2007. The program grew out of findings of a Road User Fee Task Force that the Legislature established in 2001 to research revenue collection options. The task force considered 28 funding options and ultimately recommended that the Oregon Department of Transportation initiate a pilot program to test the feasibility of replacing the gas tax with a mileage-based fee. At the end of the pilot program, findings showed that the concept is viable, it would allow congestion and other pricing options that can vary in different zones, privacy from government intrusion on one's whereabouts can be protected, and implementation and administrative costs would be low. Oregon Governor Ted Kulongoski announced in December 2008 that he plans to move forward with implementing a vehicle miles traveled payment system in the coming years.

Sources: Denver Business Journal. "State may tax vehicle miles." <http://denver.bizjournals.com/denver/stories/2009/01/26/story6.html>. Also, Oregon Department of Transportation. 2007. "Road user fee pilot shows 'per mile' fee viable." <http://www.oregon.gov/ODOT/COMM/nr07112001.shtml>.

Ms. Hanak, PPIC research director, told the Commission that user fees on roads, gasoline and water also can help the state meet its greenhouse gas emission goals, by reducing vehicle miles travelled and the energy needed to move water around the state.

Both sales taxes and user fees are income regressive, as they take proportionately more from low-income people than from higher income people, but user fees directly benefit the people who pay them, while general taxes burden both users as well as those who do not use the public goods created by their tax contributions.⁷⁹

User fees change the discussion about borrowing by establishing an identifiable repayment stream to lenders, allowing governments to issue revenue bonds rather than general obligation bonds to finance the construction of new infrastructure. Fees also can be employed to repay a private entity in a public-private partnership where private money is put up to fund a project, and the private entity collects on the debt by charging users. Direct fees also offer the

opportunity to avoid construction costs of new infrastructure when employed to send pricing signals that reflect the relative demand for a public good or service at different times, as one component of a demand management strategy.

The Legislature has been reluctant to embrace the idea of user fees. Some lawmakers oppose raising taxes of any kind; other lawmakers have specific reservations about user fees, arguing that public goods should be supported by the General Fund and that user fees raise inherent equity issues.

These legitimate concerns must be weighed in the context of the need to provide for the economic health of all Californians, the need to encourage Californians to use public goods more efficiently, and the costs currently being borne by Californians, rich and poor, from the lack of adequate investment in infrastructure. The Los Angeles-Long Beach-Santa Ana region, for example, has the most congested roadways in the nation. Area drivers wasted an average of 53 gallons of fuel and lost an average of 70 hours a year because of traffic delay, up from 44 hours of delay in 1982.⁸⁰ Such delays add significantly to air pollution; a study by the California Air Resources Board estimates that a car that takes 30 minutes to travel a distance of 10 miles will emit 2.5 times the exhaust emissions as the same car covering the same distance in just 11 minutes.⁸¹ California currently boasts six of the nation's top 25 most congested metropolitan regions. Californians already are paying for the state's infrastructure choices through lost productivity, health problems associated with poor air quality and increased wear on their vehicles.

Policy-makers also should consider the relative costs imposed on infrastructure by different users, such as large cargo trucks, where one type of user might cause more damage or require added construction or maintenance costs than another user.

An honest discussion that compares these costs to new or increased user fees might reveal that Californians may not be opposed to such fees, especially if they were dedicated to achieving specific outcomes, such as increased mobility and greater freeway safety.

California An Early Adopter of User Fees

Overreliance on bond financing for road infrastructure in the 1920s prompted California to experiment with user fees, then a radical idea. At the time, the state was experiencing a surge in auto ownership, which clogged the underdeveloped roads that farmers used to get produce to market. The state had taken on responsibility for building major routes

to carry long-distance traffic, augmenting local road systems, and by the early 1920s, the costs of maintaining roads and paying the interest on the bonds issued to build them accounted for 40 percent of state revenues.⁸²

Those who used the roads were the principal beneficiaries, and as the need for and costs of construction was roughly proportional to the traffic on the road, user fees were seen as a fair way to raise money to cover construction and maintenance costs. Tolls were considered the most equitable way to connect use to benefit, but the costs of building a closed toll road system connecting the state's far-flung cities was seen as unworkable. States turned instead to taxes on fuel, which cost less to collect and administer. Most states used gasoline taxes for transportation purposes, which the federal government made a requirement in the 1930s. The federal government applied the user fee approach to the federal interstate system in 1956, increasing federal fuel taxes and creating the Federal Highway Trust Fund.

In California today, gasoline taxes no longer come close to paying for the costs of building and maintaining the state's highways, roads and bridges, and recent attempts to raise the tax have been defeated. In its 2009 ten-year plan, Caltrans estimates the annual cost of maintaining and repairing the existing freeway system at \$6.2 billion. The fuel tax generates less than half of that amount, roughly \$3 billion a year, and of that, 65 percent is directed to the State Highway Fund.⁸³ Current state funding provides only about \$1.5 billion a year for maintenance and repair, though federal stimulus money has been used to offset the perennial shortfall, which is a welcome, if short-term, injection. The state's current 18 cents a gallon tax has not increased since 1994. Between 1994 and 2005-06, travel on state highways increased 27 percent as measured by vehicle miles, while gas tax revenues climbed 21 percent and the California Highway Construction Cost Index showed construction costs increasing by 200 percent.⁸⁴ A separate sales tax on fuel has been designated by Proposition 42 for highway system expansion, local projects and transit. In recent years, fuel sales tax revenues have been borrowed to shore up the General Fund, applied to transportation bond debt service.

Martin Wachs, Director of RAND Corporation's Transportation, Space and Technology Program, testified that the effectiveness of the gas tax and sales tax on fuel has been further eroded by the increasing number of fuel-efficient cars on California's roads. These vehicles inflict the same wear and contribute to congestion, but pay proportionately less in user fees as they require less fuel. At the same time, the transportation system built in the 1960s and 1970s is wearing out, requiring an increasing share of resources for operations, maintenance and

modernization. The same can be said for the state's levees, for water project pumping stations, for public universities and other California infrastructure projects launched decades ago.

The failure of gasoline taxes and gasoline sales taxes to keep up with the costs of maintaining and expanding the state's freeways has shifted more of the burden for paying for such costs back to general obligation bonds.

Techniques to Manage Demand for Infrastructure

In some cases, obstacles to creating greater supply of something can be more than simply a lack of money. A lack of physical space in Los Angeles, for example, is a primary impediment to adding more road capacity in the most congested areas in a region that boasts the nation's most extensive road network.⁸⁵ Instead, state and local regions can incorporate tactics to manage the demand of an asset. Demand management involves operating infrastructure assets differently, matching demand to supply through the use of standards, regulation and new technology as well as fees that encourage conservation and discourage inefficient resource use, rather than simply building more infrastructure.

In some cases, managing the infrastructure differently is simply a matter of reconfiguring traffic lanes, as is done during rush hours on the Golden Gate Bridge. In other instances, demand management strategies have involved building new capacity, but recognized that new freeway lanes alone could not keep up with the influx of additional traffic resulting from population growth.

Environmental opposition and the construction risk involved in building new electric generating plants in California prompted a change in focus to managing demand for electricity and conservation. As a result, California has been able to keep per capita electricity consumption flat at 7,000 kilowatts/hour for the past 30 years while average consumption for the nation as a whole increased by more than 40 percent during the same period.⁸⁶

After losing a major source of water as a result of the Mono Lake legal case,⁸⁷ the Metropolitan Water District of Southern California (MWD) and its member districts were able to hold water consumption steady despite adding nearly 4 million people to its population between 1990 and 2008. MWD used a combination of price increases and new technology such as meters and low-flow toilets, rebates for removing lawns, and water reuse.

In San Diego County, Interstate 15 has reversible lanes to accommodate rush-hour flows as well as smart technology that allow single passenger

cars to use the High Occupancy Vehicle express lanes for a fee charged through the vehicle's FasTrak transponder. The fee for using the lane varies depending on the time of day, from 50 cents to \$4, though the fee can go as high as \$8 depending on the distance traveled and the severity of traffic congestion. Weekends are free. Revenues from the fees are used for area transit improvement, such as the Inland Breeze Bus Service. Prices, posted on electronic displays, can be changed every two minutes according to traffic conditions.

The use of this variable pricing, called "dynamic pricing," on I-15 marked an early introduction of dynamic pricing to California's transportation system. Despite its acceptance in San Diego County, and the availability of the technology that supports it, dynamic pricing has not yet been widely adopted in California. A slightly different version is used for express lanes on State Route 91 in Orange County, with pre-set fixed tolls depending on the hour of day and day of week, with the highest being \$9.90 for Thursdays from 4 p.m. to 5 p.m.

Both are forms of congestion pricing, a strategy used in cities outside of the U.S. to reduce traffic volumes and improve air quality. Both examples use data generated by drivers' FasTrak transponders to learn more about driver behavior, such as the influence and timing of toll changes on congestion. On I-15, for example, Caltrans has learned that its express lane for high occupancy vehicles and toll-paying single passenger vehicles is bogging down, at times moving more slowly than adjacent unrestricted lanes. That is prompting discussion within the department about the possible need for raising the number of passengers in cars that use the express lane for free.⁸⁸

***"The use of pricing is
the most effective
tool to change
congestion."***

Daniel Sperling

Many utility customers are familiar with the concept through "peak-load pricing." In such programs, electric utilities offer customers more attractive electric rates during periods of the day when demand is low, then charge considerably more for electricity when demand rapidly increases to peak load, for instance, during late summer afternoons, when people return home from work and turn up their air conditioners. For utilities, it helps avoid the need to add new generating capacity.

Power and water utilities also manage demand through "block pricing," or "tiered pricing," where usage under a certain amount is priced at one level; higher consumption is priced at progressively steeper rates.

The approach is being applied by states to manage demand for expensive-to-expand assets, such as universities. North Carolina, for example, since 1994 has had a tiered-pricing policy to encourage students to earn baccalaureates within four years to make room for incoming students at the University of North Carolina's 13 campuses. As

an incentive for students to finish within four years, and to make room for incoming students, the state charges a 25 percent surcharge on credits above 140 units for an undergraduate degree. During the 2007-08 fiscal year, the surcharge generated revenues of \$1.51 million.⁸⁹

The University of California has, among other resource-saving initiatives, encouraged students to take advantage of summer sessions in order to finish on time and ensure maximization of campus infrastructure. The U.C. Berkeley campus in 2000 offered seniors a \$500 rebate for finishing their degrees by the end of the summer of their fourth year, rather than sign up for another fall term. U.C. Davis in 2006 offered students a \$300 discount for taking both summer sessions as a way to keep them on track to finish on time. On the graduate school level, the U.C. has established “normative times” for completing a doctorate degree, and introduced fee incentives to encourage progress toward finishing within that period.

Congestion Pricing: Technology Helps Drive Multiple Goals

In the transportation arena, peak-load pricing is called congestion pricing. Following the lead of Singapore, cities around the world have adopted congestion pricing to reduce the amount of traffic in their central cities, improve mobility and to improve air quality. In some cities, such as Stockholm, Sweden, revenues from congestion pricing systems are recycled into transportation projects, including ring roads, as well as increased public transit.⁹⁰

The U.S. Transportation Department’s Urban Partnerships program since 2007 has been working with five cities – New York, San Francisco, Seattle, Minneapolis-St. Paul and Miami – providing grants for cities that used one or more of four strategies (transit, telecommuting, tolls and technology) to reduce urban congestion.

New York City Mayor Michael Bloomberg proposed congestion pricing for Manhattan as part of the city’s PlaNYC 2030 project, but the idea was rejected by the state’s General Assembly leaders in 2008 before it could be put to a vote. Had it been implemented, New York City’s plan would have been the first of its kind in the United States.

San Francisco also tried to implement a congestion pricing program for the Doyle Drive approach to the Golden Gate Bridge, but was forced to withdraw the plan in the face of political opposition, in part because the approach is considered part of the bridge, which already is tolled. The city now is opting for rehabilitation of the route through the federal grant

Congestion Pricing: Cities Reduce Traffic, Consumers Adjust

The city-state of **Singapore** was the first to introduce congestion pricing in 1975 and has divided up charging zones into several central districts and expressways. It initially charged a flat fee, but in 1998 pioneered a dynamic electronic pricing system in which price fluctuates according to demand. Cars equipped with prepaid cash cards transmit short wave radio signals when they enter the charging district. Different types of vehicles pay different rates. According to Singapore's Land Transport Authority, the system has reduced the number of solo drivers and shifted trips to non-peak periods. During the charging period, traffic has been reduced 13 percent and traffic speed has increased 22 percent.

Traffic congestion in **London** in 2000 was so bad that drivers in the central part of the city spent 50 percent of their time at a standstill, contributing to an estimated \$3 million to \$6 million in lost productivity each week. The city's transport agency introduced a congestion pricing program in 2003, and extended it to the west of the city center in 2007. The city charged a flat rate for entering the restricted district during weekdays during business hours, initially \$8, now \$13. Drivers have several payment options, including through text message and via the Internet. Residents receive a 90 percent discount. Despite a 21 percent decrease in traffic, congestion since has risen to pre-charge levels, due to a reduction of road space as the city embarked on a water and gas main replacement program and devoted more roadway to pedestrians and bike traffic. The program has increased bike traffic and bus use and in 2007-08, generated roughly \$200 million in revenues that were invested back into transit improvements.

Stockholm introduced its congestion pricing pilot program in 2005 by increasing public transport in the central city, implementing a congestion tax five months later. The goals were to increase accessibility and reduce emissions and congestion. Taxes are assessed by an automatic license plate recognition system; payment is through direct billing or automatic account debit. The amount is based on the time of day, with the highest amounts for rush-hour periods. Evenings, weekends, holidays and the month of July are free. The Swedish parliament made the program permanent in 2007 after a national referendum in which Stockholm voters approved it and 14 other municipalities rejected it.

The system used in **Milan** is slightly different, aimed primarily at air pollution and charges vehicles different rates – from €2 to €10 according to their European Union emissions rating. Some older models of cars and motor scooters that pre-date the EU rating system were not allowed to purchase passes for several months after the program started. The Ecopass system allows electric cars and hybrids to enter the congestion zone for free. Revenues from the taxes will be used for public transit, bike paths and low-emission vehicles.

Sources: <http://www.onemotoring.com.sg/publish/onemotoring/en.html>. Mayor of London. Transport for London. July 2008. "Central London Congestion Charging; Impacts Monitoring." Sixth Annual Report. Also, Stockhomsforsoket; www.onemotoring.com.sg/. Also, BBC World News, January 2, 2008.

program. Also as part of the Urban Partnerships program, San Francisco during the summer of 2009 started a two-year pilot program testing variable rates for parking that ultimately will include a quarter of its metered street parking and include real-time pricing information posted on electronic street signs and on the Internet.

Such systems easily could take advantage of the FasTrak electronic payment system used for bridge tolls in the San Francisco Bay Area and the State Route 125 South Bay Expressway and Interstate 15 express lanes in San Diego and elsewhere.

Political opposition to congestion pricing is easy to understand; politicians see drivers as voters and drivers do not want to pay for something for which they feel they already have paid, regardless of the economic view that mobility has a value that can be priced. Urban planners at the University of California, Los Angeles suggest that one way to get around the political reluctance to antagonize driver/voters is to distribute toll revenues to the cities with tolled freeways or congestion pricing districts, which may encourage local officials to support the idea and make the case for benefits of using the revenues for other transportation improvements.⁹¹

California Needs Fresh Thinking

California must step forward in its thinking and approach to paying for and delivering infrastructure. Part of the equation is creating a broad infrastructure vision to guide decision-makers in planning and selecting projects, as the previous chapter illustrated. But a broad infrastructure vision is meaningless if the state fails to expand its available tools, such as user fees and demand management practices, to make projects happen.

User fees offer policy-makers a way to develop revenues to pay for some of the infrastructure that is needed now and in the future, and does so in a way that provides incentives for efficient use of California's public resources. Such fees can be set to provide for adequate maintenance and repair, extending the life of public resources.

User fees also can be employed to reduce demand, offering an alternative to creating additional supply to mitigate congestion and air pollutions. Demand management approaches such as congestion pricing, peak load pricing and block pricing, which have shown success in motivating changes in behavior that produce desired outcomes, can generate revenues that can be used to pay for other components of a plan.

Once the state determines that it will implement a user fee, it must then decide the appropriate amount of the fee. Because user fees are imposed not just to generate revenue but also to manage demand for an asset, a fee can and should be imposed even if it fails to cover the entire cost of an asset.⁹²

Determining the real cost of an asset requires taking a longer view of the state's responsibility for that asset. Witnesses note that policy-makers focus too heavily on initial costs of infrastructure and should instead consider the cost of an asset over the course of its lifetime. "Life-cycle costing" takes into account all of the costs associated with an asset – from building, operating, and maintaining – for as long as the asset exists under state ownership. Without this assessment of the true costs of infrastructure, the state cannot make informed decisions about which projects get the most for the money and how much to allocate for a project, much less how much to charge consumers. Department of Finance staff said that departments are starting to look at life-cycle costs of brick-and-mortar projects.⁹³ Life-cycle costing should be done on a regular basis across state agencies and departments, not just to help with pricing an asset, but for developing a statewide plan and strategy to determine priorities and alternative ways to deliver projects.

Because general obligation bonds no longer suffice as a major source of capital for infrastructure projects, California must find new ways to pay for and deliver projects. User fees and demand management are tools the state can implement, and it must also develop the ability to determine the true cost of assets in order to make educated decisions about how to finance and manage them. A snapshot of the real cost of infrastructure also will help the state pursue alternative methods of delivering infrastructure, especially with the help of private partners.

Recommendation 2: The governor and Legislature should restructure the processes for planning for and meeting the state's infrastructure needs to reflect the true costs of infrastructure projects and the need to explore alternatives to General Fund revenues to repay money borrowed to finance projects.

- ❑ The state should expand its options to generate revenues to repay project financing costs, such as user fees or special taxes, and ensure such revenues are dedicated to the purpose defined in the infrastructure strategic plan and not redirected to other parts of the budget.
 - ✓ In planning for new infrastructure projects, the state should adopt a life-cycle cost approach to provide a more complete estimate of a project's total cost, taking into account all costs of building, maintaining, operating and owning the infrastructure over the projected life of the asset.
- ❑ The governor and Legislature should incorporate demand management strategies and approaches such as joint-use arrangements to make better use of existing infrastructure assets and reduce the need to build new infrastructure.

Expanding the State's Capacity to Partner

The existing framework for paying for and delivering infrastructure is inadequate to meet the state's infrastructure needs. The state cannot borrow its way out of its infrastructure hole given the level of infusion required and the pressure such borrowing places on the General Fund. In some cases, even if a revenue source is provided, the state's workforce may not have the capacity or expertise to deliver the best product in a timely way. At the same time, private sector entities stand ready with capital, manpower and expertise to fill California's needs if the state determines that it can use these resources to its advantage.

Changes in society and technology are creating expectations for higher levels of responsiveness and efficiency in government, which requires California to be more innovative in how it provides government services, including the delivery of infrastructure. Government must continue to provide leadership and a public policy framework for infrastructure development, but the roles of government and the private sector in the implementation of infrastructure plans have evolved considerably over time and now often overlap.⁹⁴ While this can present challenges, it also provides the state with opportunities that previously were not available.

Public-private partnerships are an outgrowth of this shifting paradigm, as they are contractual arrangements between a government agency and a private sector entity to provide some portion of public infrastructure and related services. California has used public-private partnerships for years in their most basic form of contracting out for services, and it pioneered the use of the more innovative partnerships in 1989. But after an early pilot program that produced two projects, the State Route 125 toll road and State Route 91 Express Lanes, the state has not expanded the use of such partnerships as a regular part of its tool kit for delivering infrastructure projects.

California historically has partnered with the private sector to varying degrees; other states and countries have ventured into this area much more extensively, using innovative public-private partnerships to build projects that in some instances would not otherwise have been built. There is a role for such arrangements alongside the state's traditional delivery methods. Given the vast demand the state faces for new and

renovated roads, bridges and freeways, the state could generate enormous interest from private companies looking to invest or build in California through public-private partnerships.

Such arrangements have generated controversy in California, amid fear that the state's taxpayers would be taken advantage of or that partnerships would lead to widespread privatization of public assets. But even advocates of public-private partnerships say such arrangements are not likely to account for more than 15 percent of the state's infrastructure project mix. Just their existence as an option, however, can have broader benefits simply by changing the way the state looks at projects and makes infrastructure decisions. Such partnerships

Categories of Public-Private Partnerships

To build new infrastructure, the following general categories of public-private partnerships are available:

1. ***Design-Build*** – The government establishes the project requirements and contracts with a private partner to design and build a facility according to the project requirements; upon completion, the government assumes responsibility for operating and maintaining the facility.
2. ***Design-Build-Maintain*** – Similar to design-build, but the private sector also maintains the facility while the government retains operational responsibility.
3. ***Design-Build-Operate*** – The private sector designs and builds the facility; upon completion, title to the new facility is transferred to the public sector while the private sector operates it for a specified period.
4. ***Design-Build-Operate-Maintain*** – Similar to design-build-operate, but the private sector also maintains the facility during the specified period; at the end of that period, operation of the facility is transferred back to the public sector.
5. ***Build-Own-Operate-Transfer*** – The government grants a franchise to a private partner to finance, design, build and operate a facility for a specified period of time, after which ownership of the facility is transferred back to the public sector.
6. ***Build-Own-Operate*** – The government grants the right to finance, design, build, operate and maintain a project to a private entity, which retains ownership of the project indefinitely.
7. ***Design-Build-Finance-Operate/Maintain*** – The private sector designs, builds, finances, operates and/or maintains a new facility under a long-term lease; at the end of the lease, the facility is transferred to the public sector.

For existing services or facilities, public-private partnerships can be used in the following ways:

1. ***Service Contract*** – The government contracts with a private entity to provide services that the government previously performed.
2. ***Management Contract*** – The government contracts with a private entity to manage all aspects of operations and maintenance of a facility.
3. ***Lease*** – The government grants a private entity a leasehold interest in an asset. The private partner operates and maintains the asset according to the terms in the lease.
4. ***Concession*** – The government grants a private entity the exclusive right to provide, operate and maintain an asset over a long period of time according to performance requirements in the contract. The public sector retains ownership of the original asset while the private operator retains ownership over any improvements made during the concession period.
5. ***Divestiture*** – The government transfers an asset, either in part or in full, to the private sector, with certain conditions attached to protect the level of service to the public.

Source: A Deloitte Research Study. 2006. "Closing the Infrastructure Gap: The Role of Public-Private Partnerships."

do not represent free money; most rely on user fees or tolls, though in some cases government enjoys revenues or other forms of payment through leasing an asset to a private sector partner. In other versions, the state pays the contractor for making the infrastructure available.

With the passage of new legislation in February 2009 authorizing public-private partnerships,⁹⁵ California has the opportunity to revisit and expand on this alternative. In the process, it can take advantage of lessons learned from its own experience as well as from examples of how governments in other parts of the world have employed public-private partnerships.

The legislation, SB 4 X2, also created a Public Infrastructure Advisory Council to make recommendations on what already-proposed projects would be suitable candidates for such partnerships as the state tries to move quickly to maximize the use of its already authorized bond money and federal economic stimulus funds. Governor Schwarzenegger has long encouraged the state to explore using these partnerships, and his administration's desire to move quickly is understandable considering California's high unemployment rate and the need to encourage economic activity, though it will be equally important that any public-private partnership program be done right to ensure this approach can be legitimately assessed on its merits.

California Led with Public-Private Partnerships, but Other States Leapfrogged

The state has had two high profile public-private partnerships that grew out of the 1989 AB 680 pilot project.

State Route 91 Express Lanes, opened in 1995, is considered a major success by the transportation industry and drivers, adding 40 new lane miles to a heavily congested Orange County freeway, though the project often is described as a political failure. The project involved building new tolled express lanes in the median of the existing freeway, creating the world's first toll road with no toll booths, collecting tolls entirely through the FasTrak electronic transponder system. It uses a variable pricing system to manage congestion, resulting in 50 percent more traffic flow during rush hours than the highway's regular lanes.

For its first four years, it was well-received by the public and by drivers.⁹⁶ But as workers in Orange County became priced out of the local housing market, they bought homes in Riverside County, creating more congestion in the free lanes. When the state tried to add lanes, operators of the Express Lanes cried foul, citing the contract's non-compete clause.

Caltrans conceded, sparking a political outcry, ultimately leading to legislation that allowed the purchase of the contract by the Orange County Transportation Authority. In addition to the non-compete clause, critics focused on the math, pointing to the difference between the 1995 construction cost of \$135 million and the 2002 purchase price of \$207.5 million, though backers contended the purchase price was a deal, after accounting for subsequent inflation in building costs and the value delivered to drivers over the Express Lanes' first seven years.

San Diego County's SB 125 South Bay Expressway took more than a decade to start construction after concession agreements were signed, delayed by environmental studies and litigation. The concession owner, Macquarie Infrastructure Group, funded construction of the project and is the concession operator under the terms of the 35-year lease. It opened to traffic in November of 2007, just after the region's economy was softening after years of torrid growth. As a result, traffic levels have been lower than expected.⁹⁷ The 10-mile Expressway connects the county's inland communities from Spring Valley at SR 54, south to Otay Mesa at SR 905 near the border crossing with Mexico.

Robert Poole, Director of Transportation Studies for the Reason Foundation, has followed the two California projects closely, as well as the experiences of other toll roads and public-private partnerships. Poole said that despite the controversy, the two projects are successful examples of the design-build approach. They drew on private capital, allowing them to be constructed far earlier than would have been possible using gas tax funding. They are providing mobility along heavily used traffic corridors, and they are well-maintained.

Cities and states also are using public-private partnerships as a way to raise money from existing infrastructure, through long-term leases. Two often-cited examples are the Chicago Skyway and the Indiana Toll Road.

Chicago Skyway. The City of Chicago in 2005 leased the Chicago Skyway for 99 years for \$1.83 billion in a deal that represents the first long-term lease of an existing public toll road in the United States. The 7.8-mile toll road, which connects Interstate 94 in Chicago to Interstate 90, the Indiana Toll Road, had been operated and maintained by the city of Chicago and its Department of Streets and Sanitation.⁹⁸ Tolls had not been raised for some time and no longer covered the costs of maintenance and operation. A team led by Spain's Cintra Concesiones de Infraestructuras de Transporte SA and Australia's Macquarie Infrastructure Group won the competitive bid process with a proposal that included Cintra/Macquarie equity and bank loans. The lease has a provision for potential congestion pricing, as well as a provision that allows the doubling of tolls per car between 2008 and 2017.⁹⁹ Making

the deal less politically difficult: Chicago enjoys the benefit of the revenues while the costs are largely borne by commuters from northeast Indiana. Chicago used \$465 million of the proceeds to pay down outstanding Skyway debt.

Indiana Toll Road. Soon after the Chicago Skyway lease was signed, Indiana sought proposals for the 157-mile Indiana Toll Road, which connects the Chicago Skyway to the Ohio Toll Road. A company formed by Cintra and Macquarie, ITR Concession Company LLC, assumed responsibility in June 2006 to operate the toll road through a 75-year lease.¹⁰⁰ As part of the arrangement, ITR made an upfront payment of \$3.85 billion to Indiana, which the state used to close a \$1.8 billion gap in its transportation budget as well as to fund a 10-year improvement plan. Previously, the then-30-year-old road had been operated by the Indiana Department of Transportation. ITR now is responsible for construction, maintenance, repair and operation of the road's projects within Indiana and of formulating, developing and recommending a long-range toll road plan and short-term improvement programs.¹⁰¹

The combined \$5.65 billion raised for the deals gives some indication of the amount of capital available for such projects, provided that they have an identified repayment stream and contract conditions amenable to both parties.

Lower Than Expected Revenues Prompt Change in Partners

Two other existing public toll roads have been leased to public-private partnerships, the Pocahontas Parkway near Richmond, Virginia, and the Northwest Parkway outside of Denver, Colorado. They differ from the Chicago and Indiana examples in that they both also were built by public-private partnerships.

The Pocahontas Parkway was designed and built for the Commonwealth of Virginia by a partnership of Fluor Daniel/Morrison Knudsen and opened in 2002, allowing the state to provide the parkway at a time when state finances would not have allowed it to build the project on its own. Lower than estimated toll revenues threatened to force the parkway partnership to default on debt, prompting an Australian company, Transurban LLC to make an unsolicited bid to manage the contract. The Virginia Department of Transportation ended its contract with Fluor Daniel/Morrison Knudson and began negotiations with Transurban. In 2006, the state signed a 99-year lease for the parkway for \$611 million in 2006 that gives Transurban the right to raise tolls, but also requires it to pay off the parkway's debt, upgrade electronic tolling systems, be responsible for maintenance and repair and build a connection to Richmond International Airport.

Colorado's Northwest Parkway opened in 2003, a project sponsored by three local governments organized as the Northwest Parkway Public Highway Authority. The 83-mile parkway forms a partial beltway around the Denver-Aurora metropolitan area and was funded by revenue bonds backed by expected toll revenues. Despite rapid growth in the Denver region, the parkway generated only half the revenues the authority had estimated. In 2007, the authority agreed to lease the parkway to an operating consortium formed by Portugal's Brisa Auto-Estradas and Brazil's Companhia de Cecessoes Rodoviaras. The authority is using some of the \$603 million proceeds of the 99-year lease to repay bond debt.

Sources: National Council of Public-Private Partnerships, Case Study, Pocahontas Parkway. <http://www.ncppp.org/cases/pocahontas.shtml>. Accessed November 3, 2009. Also, Peter Bacque. Richmond Times-Dispatch. May 3, 2006. "Australian firm to run Pocahontas Parkway-A \$522 million deal means that tolls will remain for 99 years." Also, Tollroads News. August 30, 2007. <http://www.tollroadsnews.com/node/3110>. Accessed November 3, 2009. Also, Jeffrey Leib. The Denver Post. November 20, 2007. "Lease signed for NW Parkway."

Role of Public-Private Partnerships in Infrastructure Development

The examples represent only a few of the forms public-private partnerships can take along a spectrum of private sector involvement, from planning, designing, financing, building, operating, leasing or ongoing maintenance of infrastructure. Such partnerships have shown success around the world in major public infrastructure sectors such as transportation, water, waste, hospitals, schools, public housing, prisons and defense. Experts told the Commission that no one partnership form

fits all situations. Which type is appropriate, if at all, depends on the specific details of the project and should be carefully crafted to order. In many cases, such a partnership may not be the best choice of delivery. The process of weighing alternatives, however, is enhanced by having the tool of public-private partnerships in the mix, as it generates new ideas from a wider pool of potential partners and promotes evaluation of all the variables involved, such as life-cycle costing, demand management, and the availability of new technology and new management models.¹⁰²

As the previous examples demonstrate, such partnerships have risks, though very rarely for taxpayers or infrastructure users. One of the lessons of the public-private partnership experience is that many of these risks existed all along. Only now, however, are the risks being more adequately identified and priced in a way that they can be managed, and risks may be more wisely allocated to the party most able to bear the risk.

Public-private partnerships also can bring enormous benefit, such as the potential for increased competition,

Benefits of Public-Private Partnerships

Economists and advocates generally point out six benefits of public-private partnerships:

1. They allow the entry of alternative sources of capital as well as different kinds of financial structures, allowing projects that could not be built by the public sector alone when budgets are constrained.
2. They introduce competition, which can raise performance for the public sector as well, benefitting all users. When the Canadian government opened up competition for rail service to the private Canadian Pacific Railroad, the Canadian National Railroad responded by improving quality and on-time performance.
3. They introduce innovation, such as the use of electronic tolling, which can lower cost and speed service, and with this technology, such strategies as dynamic pricing, which can directly address policy goals, such as increased mobility, reduced air pollution and creating space for other forms of transit.
4. If deal terms provide adequate revenue and performance standards are built into the contract, they can generate higher quality service, such as speedy break-down service for motorists.
5. Contractors have an incentive to operate at the lowest life-cycle cost to maximize returns, creating a motivation for maintaining the leased asset to avoid major repair and rebuilding later, which costs more and can introduce revenue-damping delay. Maintenance standards can be built into the contract.
6. They can assign risk for different parts of the project to the party best able to manage it.

Source: Little Hoover Commission Public Hearing. March 26, 2009.

innovation and quality of service, as well as alternative sources of money for capital and maintenance costs.

Public-private partnerships are not endorsed by everyone. Some, but not all, unions oppose them, both for job security reasons and the belief that if a private party makes a profit, it necessarily comes at the public's expense. Other unions, whose members do much of the construction work under the existing model, favor the model if it can create new jobs that otherwise would not exist. Some in the municipal bond industry see the expansion of alternative financial structures that use more private equity and private debt as potentially reducing the amount of municipal debt they can underwrite. Still others, aware of the complexity of the contracts and the vast number of variables they contain, worry that the state lacks the capacity to protect the public's interest at the negotiating table.

Tools Necessary for Successful Partnerships

For the state to gain the full benefit of competing with the private sector, state government will have to retool state managers to focus on outcomes and find more ways to incorporate new technologies already in use elsewhere in the world, Ryan Orr, executive director of Stanford University's Collaboratory for Research on Global Projects, told the Commission. The current process is reinforced by the way the state plans, approves and budgets for infrastructure. In small but critical ways, however, the transition already has started, as seen in the new technologies that Caltrans is introducing and in the testing and the department's Office of Innovative Finance. In order to achieve the

Protecting the Public Interest

An important question in the decision to pursue a project as a public-private partnership is whether the partnership is in the public's interest. Victoria, Australia, applies an eight-step public interest test that must be conducted in the development of the business case in the state's procurement process for delivering a project via P3. The results must be included in the agency's submission for project approval so that the government can consider the public interest question upon making a decision about project funding.

Victoria's eight-step public interest test includes an analysis of the project in each of the following areas:

1. **Effectiveness** – Is the project effective in meeting government objectives?
2. **Accountability and Transparency** – Do the partnership arrangements ensure that the community can be well informed about the obligations of government and the private sector partner, and that these can be overseen by the Auditor-General?
3. **Affected Individuals and Communities** – Have those affected been able to contribute effectively at the planning stages, and are their rights protected through fair appeals processes and other conflict resolution mechanisms?
4. **Equity** – Are there adequate arrangements to ensure that disadvantaged groups can effectively use the infrastructure or access the related service?
5. **Consumer Rights** – Does the project provide sufficient safeguards for consumers, particularly those for whom government has a high level of duty of care, and/or those who are most vulnerable?
6. **Public Access** – Are there sufficient safeguards that ensure ongoing public access to essential infrastructure?
7. **Security** – Does the project provide assurance that community health and safety will be secured?
8. **Privacy** – Does the project provide adequate protection of users' rights to privacy?

Sources: U.S. PIRG Education Fund. Spring 2009. "Private Roads, Public Costs. The Facts about Toll Road Privatization and How to Protect the Public." Also, Victoria Department of Treasury and Finance. February 2009. "National PPP Guidelines. Partnerships Victoria Requirements. Annexure 7, Public Interest."

benefits that public-private partnerships have to offer, the state must have in place a number of mechanisms, including a system for valuing current costs of infrastructure through traditional means, a sound understanding of risk-transfer, a group of experienced experts who know how to negotiate and write the partnership contracts, and performance measurements and accounting to evaluate the results.

Life-Cycle Costing Needed

In assessing how a public-private partnership approach compares to the traditional design-bid-build model, the state has to ensure that it includes the life-cycle costs of a project under each scenario to determine which model delivers the greatest value for the price. Otherwise, the comparison is misleading as the traditional approach often does not take into account all of the costs that will be borne by the state over the life of the asset. “Design, build, finance, maintain, operate – you have to look at the five steps of the process,” Mr. Orr testified to the Commission. “It’s a package deal, like buying a car.”

For example, public financing, through general obligation bonds or revenue bonds, as a rule offers the lowest cost of borrowing. But financing is only one part of a project’s cost, and other components of a deal package, such as time and money saved by combining the design and build phase, may outweigh savings gained through public financing. In other cases, total borrowing costs may be reduced if the private partner contributes equity as part of the financial package. Private parties also have the ability to depreciate assets over time and to count interest costs as deductible business expenses. Finally, access to public credit markets cannot always be assured, as last year’s credit crisis made clear.¹⁰³

Assigning Risk: It’s in the Contract

Once the value-for-price analysis has been completed and the decision reached to enter into a public-private partnership, the question of whether all its benefits can be achieved depends to an important degree on the contract the state develops with its private partner. A major determinant is how well the contract identifies, prices and assigns risk. Generally, governments are best able to manage the risk of an extended environmental review process or acquire land, where private firms have more maneuverability to manage construction timetables and to use hedging strategies to protect against sharp cost increases for materials such as steel and concrete, over the length of the project. The challenge for the state is to be knowledgeable enough about a project to be able to

identify and assess such risks, thus the contract itself is a source of risk that must be managed.

David Crane, Governor Schwarzenegger's special advisor for jobs and economic growth, had a previous career in finance developing public-private partnerships. Mr. Crane for several years has advocated the adoption of such partnerships at the same time emphasizing that essential to their success is having experienced professionals to negotiate the contract on behalf of the government. California already has a ready bench of talent in the Department of Finance and Treasurer's office to assess and choose the right options. To avoid the errors made in the early years of such partnerships in the United Kingdom, California has to be able to go "toe-to-toe" in contract talks with experienced private investors who have done such deals all over the world, Mr. Crane said. He recommends that California create a "center of excellence" made up of such contract experts who could negotiate on behalf of all state departments in public-private partnership deals.

This is an area in which mistakes can be costly, both economically and politically. As California explores this new approach, it should honestly appraise how much it needs to learn to successfully execute and manage these partnerships. An investment in expertise through the contracting of proven professionals who have negotiated such deals can complement the state's teams of finance and planning experts, and may well prove inexpensive over the long term both in knowledge gained and mistakes avoided as California develops this critical capacity.

New York State Works to Maximize Assets

New York State faced a record budget deficit in 2008, due in part to the collapse of the financial industry and to a "long-term practice of allowing spending to outpace revenues." In response, Governor David Paterson in October 2008 established the New York State Commission on State Asset Maximization to assess whether asset maximization could benefit the state and whether any state assets are suitable for public-private partnerships.

New York's goal in asset maximization was to achieve efficient allocation of opportunity and risk between the public and private sectors in order to increase the public value of state assets. This could take the form of a public-private partnership, public-public partnership, or other innovative methods to unlock value from undervalued or underutilized assets. The governor tasked the commission to identify ways the state could efficiently leverage its resources, spur job creation, maintain and enhance infrastructure and encourage economic growth.

In its December 2008 preliminary report, the commission identified guiding principles for evaluating the benefits of asset maximization: 1) spending need/cost savings, 2) private sector ability to partner, and 3) regulatory and political feasibility. The commission applied these guiding principles in its final report in June 2009 to identify and recommend pilot projects in each of the six asset classes of transportation, social infrastructure, higher education, energy, information technology and surplus property. It also recommended one major umbrella action, to establish a State Asset Maximization Board to assess the merits of proposed public-private partnership projects and provide a sustainable oversight process for asset maximization initiatives. In total, the commission offered 27 recommendations to maximize the state's assets, create jobs and generate economic development in the state.

Sources: New York State Commission on State Asset Maximization. December 15, 2008. "Preliminary Report." Also, New York State Commission on State Asset Maximization. June 1, 2009. "Final

The Public Infrastructure Advisory Commission

Some of these issues are being explored by the Public Infrastructure Advisory Commission (PIAC). Chaired by Dale Bonner, Secretary of the Business Transportation and Housing Agency, the commission met as a group four times during 2009 to develop recommendations that it can forward to the California Transportation Commission on which transportation projects currently in Caltrans pipeline might be appropriate for public-private partnerships. In working through a list culled to 10 potential projects, the council also is establishing the criteria for how such projects should be assessed, a process that already is influencing the way Caltrans analyzes costs and risks.

Role of the Public Infrastructure Advisory Commission

The Public Infrastructure Advisory Commission (PIAC) was created under SB 4 X2 in 2009 to be housed within the Business, Transportation and Housing Agency. PIAC is designed to advise the Department of Transportation (Caltrans) and regional transportation agencies in developing transportation projects through public-private partnerships (also called performance-based infrastructure partnerships). Specifically, PIAC is required to do the following:

- Identify transportation project opportunities throughout the state that may be considered for public-private partnerships.
- Research and document similar transportation projects throughout the state, nationally and internationally, and further identify and evaluate lessons learned from these projects.
- Assemble and make available to Caltrans or regional transportation agencies a library of information, precedents, research, and analysis concerning infrastructure partnerships and related types of public-private transactions for public infrastructure.
- Advise Caltrans and regional transportation agencies, upon request, regarding infrastructure partnership suitability and best practices.
- Provide, upon request, procurement-related services to Caltrans and regional transportation agencies for infrastructure partnership.

Sources: California Business, Transportation and Housing Agency. Fall 2009. "Public Infrastructure Advisory Commission Work Plan." Also, SB 4 X2 (Cogdill), Chapter 2, Statutes of 2009.

Discussion among commission members points to a central tension between the desire to get projects underway quickly to create construction jobs and provide infrastructure that delivers long-lasting economic benefits and, on the other side, the desire to create a credible process for evaluating projects as possible candidates for public-private partnerships. The process has revealed potential obstacles, such as procurement rules that may discourage financial firms from bidding on contracts to advise the state on the process if it prevents them from participating in other parts of a project later on.

"Everybody is watching, including people who are very opposed to P3s, and if we go too fast and slip up and pick the wrong project or do the right project in the wrong way, that will be the end of P3s in California and possibly several other states for a long time," Ray Levitt, a Stanford University professor of civil and environmental engineering, told fellow PIAC members at the group's October 27, 2009 meeting.

Caltrans has been evaluating the reconstruction of the Doyle Drive approach to the Golden Gate Bridge in light of its potential for a public-private partnership, working with the San Francisco Transportation Authority, which is engaging financial experts for the study process. Design

work on some of the project is complete, but the project is divided up into different contracts, some of which could be separately bundled and recommended for the public-private partnership approach.

The Commission commends the governor and Legislature for passing the legislation to initiate some public-private partnerships in select sectors and for acknowledging the need for a group that can provide expertise to public sector agencies entering these transactions. This is an important step in moving forward to ensure that public dollars are spent in the most strategic and effective manner. The Business, Transportation and Housing Agency and Caltrans also should be recognized for their initiative in implementing the legislation and creating a process for moving public-private partnership projects forward. This is an enormous task, especially given established department processes for planning and delivering projects – from funding to contract specification to bidding to ongoing maintenance and operation – and the department has embraced its role and responded quickly to the Legislature's directive.

The Commission has concerns, however, about the state's current approach to public-private partnerships:

- The five year time span is too short, considering that it can take five to ten years to get a major toll road from feasibility study to completion. There may not be adequate time for an honest assessment.
- The list of existing projects under consideration by PIAC represents projects that were developed through the old process, are far along in the planning and might not be the most suitable for public private partnerships. Consequently, these projects may not provide a telling test of the concept, as they embody old thinking and leave little room for bidders to introduce new approaches. The Gerald Desmond Bridge in Long Beach connecting the port to 710, for example, has been listed, despite the existence of two nearby bridges that neighbors point out would be immediately overwhelmed by toll-avoiding truck drivers. An alternative might be to have one operator manage all three bridges, and use revenues to rehabilitate bridges one at a time, as well as support mitigation efforts.
- The wording of the law on toll rates could be interpreted as limiting the amount and how often an operator could raise tolls. This might be workable in cases where the state is transferring operation of an existing toll road that connects cities, but it eliminates the opportunity to establish dynamic pricing for purposes of reducing congestion and air pollution in highly crowded traffic corridors.

- The provisions for making contractors whole in the event the state adds competitive lanes are written to take into account only the contractor's debt service costs, which leaves no money left for operating or maintenance costs or return to investors. This may discourage investors from submitting proposals.

The Commission believes that public-private partnerships are an essential ingredient in the state's menu of options for developing infrastructure, and it supports expanding the state's ability and use of them, but it is concerned that this initial implementation may be hampered by these weaknesses that are inherent in the design of the legislation.

Potential P3 Speed-bumps

Based on its experience of the consulting business for public sector clients, Deloitte Research has identified common mistakes governments make in pursuing a public-private partnership strategy:

- ***Poor setup.*** The success or failure of public-private partnerships often can be traced back to the initial design of partnership policies, legislation and guidance. One mistake is placing too many restrictions and expectations of risk transfer on the private sector partner, that it becomes impossible to structure a financially feasible deal. Another is having unrealistic expectations of public-private partnerships — thinking that they provide “free money” or that they are the solution to all problems.
- ***Lack of clarity about project objectives.*** Sponsors of project sometimes lack consensus about the purpose of and expected outcomes for the project. Government officials then often try to compensate for this failure by over-specifying inputs.
- ***Too much focus on the transaction.*** The government may view public-private partnerships merely as financing instruments when in fact they represent a very different way of working. This leads to poor operational focus.
- ***Inappropriate risk model applied to project.*** Much of what differentiates the various partnership models is the level and nature of risk shifted to the private sector. A common mistake is transferring demand risk, the amount of use a project will receive, to the private sector even though the private contractor has no control over demand factors.
- ***Lack of internal capacity.*** Even when the government is supported by external advisers, many tasks cannot be outsourced, and often the agency lacks the skill sets internally to manage complex public-private partnerships or the dedicated team required to address the time-intensive upfront structuring needs.
- ***Failure to realize value for money.*** This failure occurs when the borrowing and tendering costs associated with public-private partnerships are not sufficiently offset by efficiency gains or when government officials do not have a real understanding of how to test value for money.
- ***Inadequate planning.*** Without taking proper account of the market in the planning phase, governments may come out with more projects than bidders which creates a noncompetitive environment. Too few projects, however, may result in industry moving on to a more active jurisdiction.

Source: Irene Walsh, Managing Director of Infrastructure & Project Finance Advisory, Deloitte Corporate Finance LLC. March 26, 2009. Oral testimony to the Little Hoover Commission.

Organized Expertise to Implement Partnerships

Other countries such as Britain, Canada and Australia have realized the need for expertise in implementing public-private partnerships and have responded by creating organizations devoted to helping the government with these complex transactions. These countries have incorporated far more extensive use of public-private partnerships than the United States and California, though some finance experts attribute this to the fact that the United States is the only country in the world that offers tax-free status on the interest paid on public bonds.

Leaders of public-private partnership organizations in other countries told the Commission that elements such as time, innovation, increased performance, lower ongoing maintenance costs and getting an otherwise impossible project completed are all factors to be considered in a project decision.¹⁰⁴ Experts say that a partnership is not always the best method to deliver a project and that, even at their most prolific, public-private partnerships comprise no more than 15 percent of a country's overall infrastructure spending. The public sector may be best-suited to deliver the product, and in some cases, the public sector has improved its performance in order to compete with the private sector on government projects – a direct result of including public-private partnerships among the available options in the government's tool kit.¹⁰⁵

Acknowledging the multiple benefits that can be achieved from incorporating public-private partnerships, other countries have established panels of experts to help the government negotiate and manage the contracts that govern the deals.

British Columbia in 2002 formed Partnerships British Columbia Inc., a center of excellence devoted to innovating procurement of performance-based infrastructure in the province. Its chief executive officer, Larry Blain, told the Commission that Partnerships BC essentially serves as a facilitator for project delivery, whether via public-private partnership or through the traditional public-sector route. The agency is assigned a project by the government and then determines the best method to deliver it. For all projects exceeding \$50 million, Partnerships BC is required to develop a

Partnerships British Columbia

Partnerships BC, formed in 2002, is a company owned entirely by the province of British Columbia, governed by a board of directors reporting to its sole shareholder: the Minister of Finance. It is incorporated under the British Columbia Business Corporations Act. The agency provides expertise for the province in evaluating, structuring and implementing public private partnerships to serve the public interest. It provides a full spectrum of services ranging from business planning and procurement process advice to comprehensive project and contract management, and its clients include a range of public sector agencies – ministries, Crown corporations, health authorities, advanced education institutions, boards of education and local governments. The agency is staffed with 42 full-time equivalent positions. Staff and board members have a mix of skills and experience in the public and private sectors.

Source: Partnerships British Columbia 2007-08 Annual Report.

business plan that reviews, among other things, the public-private partnership model as an option.

Ontario followed suit by forming Infrastructure Ontario, a private company, in 2005. President and Chief Executive Officer David Livingston told the Commission that in Ontario, the Energy and Infrastructure Ministry produces an annual capital plan, which includes

Infrastructure Ontario

Infrastructure Ontario was formed in 2005 as a Crown corporation to manage the province's larger and more complex infrastructure renewal projects as well as support infrastructure investment across the broader public sector. Members of the board of directors, the chair, and the chief executive officer are appointed by Ontario's Lieutenant Governor. The organization is guided by principles that seek to ensure public ownership of core assets such as hospitals, schools and water and wastewater treatment facilities. It uses an alternative financing and procurement model to leverage private financing and expertise to strategically rebuild and maintain vital infrastructure on time and on budget. Infrastructure Ontario also provides Ontario municipalities, universities and other public sector bodies with access to affordable loans to build and renew local public infrastructure. The organization has approximately 200 staff, about 90 percent of whom have private sector experience.

Source: Infrastructure Ontario. 2007-08. "Making Projects Happen." Infrastructure Ontario 2007-08 Annual Report.

deciding which programs receive money for projects. Of those, the Ministry selects which projects should be assigned to Infrastructure Ontario which then goes out to procure the project. Infrastructure Ontario continues its involvement in the project from initial procurement through construction completion. It has little freedom to go beyond the scope or budget allocated for the project, Mr. Livingston said, though it enjoys significant economies of scale – as well as additional benefits from building long-term relationships with private companies – by serving as the hub for multiple large projects. As a private company doing public service work, Infrastructure Ontario enjoys the ability to hire – and pay – top-notch staff to go “toe-to-toe” with private companies on the other side of the project contract, which Mr. Livingston notes is a key ingredient to ensure a successful P3 deal.

Also key to the process, said Mr. Livingston, is the appropriate transfer of risk and determining value-for-money, an analysis that figures in the costs and benefits, including the value of transferred risk.

Mr. Livingston said the feedback he has received from the Ontario government about the use of public-private partnerships has been positive. He added that the government would like to engage Infrastructure Ontario to manage more government projects, but the group has resisted, in that its expertise is in innovative project procurement, not project management.

These other countries have seen both the benefits and pitfalls of implementing public-private partnerships in their regions. This mix of benefits and challenges shows that entering the public-private partnership arena must be done carefully and deliberately to avoid deals that could put the state at a severe disadvantage.

California Needs to Build Partnership Capacity

In order to achieve the benefits that public-private partnerships can offer, the state must be properly equipped. Successful public-private partnerships require such detailed and complex negotiations that the state must have experienced staff to help determine whether a partnership is the best approach, and if so, to implement these deals for any agency or department.

Governor Schwarzenegger's suggested entity, Performance Based Infrastructure, was such an organization, but it failed to garner enough support from the Legislature. The Legislature, however, was willing to form the Public Infrastructure Advisory Commission as part of the 2009 legislation authorizing public-private partnerships. While a good start, the Commission, as it stands, is not equipped to provide the state with what it needs to engage in public-private partnerships.

California should create a fully-equipped center of excellence if it is to reap the full potential to be gained from public-private partnerships. The center of excellence should be staffed by experts sufficient to be able to do all the things required for a successful partnership, including an assessment of the life-cycle cost of an asset, a value-for-money analysis comparing traditional project delivery against construction via public-private partnership, assistance with effective performance measures, and expert negotiation and management of the P3 contract. Most importantly, the center needs adequate funding to operate, an investment that will save money in the long run.

To further enhance its value, the center of excellence should work closely with a strengthened Strategic Growth Council to share knowledge about innovative ways infrastructure can be provided. The center of excellence also should offer suggestions for which types of projects could serve as wise investments that may cost little but reap significant returns, and which therefore should be moved to the top of the list of state priorities.

Given the length of the list of infrastructure needs and the inability of the state's current system to deliver on those needs, California must innovate, from formulating its strategy to implementing individual projects. A public-private partnership center of excellence, as part of a larger state infrastructure strategy that incorporates cross-sector collaboration, innovation, and adequate sources of funding, will help in this process.

Recommendation 3: The state should increase its capacity for creating public-private partnerships at the state and local levels to increase efficiency, reduce costs and speed delivery of projects where such an approach is appropriate. Such partnerships may include the use of private financing in cases where it can reduce a project's overall cost or reduce risk to the state.

- ❑ The state should partner with private entities where doing so would benefit the state through reduced costs and delivery time and improved project quality and performance; the governor and Legislature should set broad goals for such partnerships, then provide the authority for state and local agencies to enter into partnerships.
- ❑ In implementing SB 4 X2 and creating the Public Infrastructure Advisory Commission, the state should do the following to maximize the likelihood that its initial public-private partnership results are successful:
 - ✓ Retain experienced professionals to represent the state on any public-private partnership deal in order to fairly negotiate vis-à-vis the private sector.
 - ✓ Conduct a value-for-money analysis of each project in order to determine whether the project should be done as a public-private partnership.
 - ✓ Delineate the risks borne by each partner and how the state has shifted risk to its private sector partner where appropriate.
 - ✓ Utilize performance measurements that will allow evaluation of the results of each project.
 - ✓ Calculate infrastructure costs for all projects, whether by public-private partnership or otherwise, over the life-cycle of the asset, taking into account all costs of building, maintaining, operating and owning the infrastructure over the projected life of the asset.
- ❑ Ultimately, the governor and Legislature should create a statewide center of excellence to both advise and represent state and local agencies that seek to enter into public-private partnerships.
 - ✓ The center should be able to provide all public-private partnership expertise – from assistance with deciding whether a public-private partnership is appropriate to implementing and managing the public-private partnership agreement – for a state or local government entity and should be able to charge the entity a reasonable fee for its service.

- ✓ The center should have the ability and resources to compete with the private sector for experts to represent the state in its transactions with the private sector, and it should follow all of the above recommendations regarding public-private partnership projects.

Conclusion

California's infrastructure, and its process for delivering it, needs an overhaul.

Under the state's existing system, California cannot afford to pay for all of the \$500 billion in estimated infrastructure needs over the next two decades. The state has relied heavily on general obligation bonds to fund the bulk of its major projects, but the pattern of borrowing money and paying it back from the General Fund is unsustainable given the scale of replacement and new infrastructure needed. During times of shrinking revenues, growing general obligation debt service pressures other state programs and services. Using general obligation debt also builds bad habits in budgeting, putting the emphasis on the construction phase and not accounting for the true costs of maintaining and operating an asset once it is built. The state must find new ways to pay for and provide infrastructure to support its growing population and economy. California's economic wounds will eventually heal, but the extent to which it recovers and thrives depends on the decisions and plans that state leaders make today.

Given new expectations and advances in how government provides infrastructure and related services, California policy-makers must rethink the state's process for infrastructure planning and delivery. The state needs to set a vision for California – a vision of what it wants to achieve and what infrastructure is needed to move the state toward its goals. California Legislators, the governor, and state agency and department heads must work together, facilitated by the Strategic Growth Council, to identify and prioritize needs to establish a state infrastructure strategic plan. The plan should weave together important state goals, such as reduced traffic congestion, reduced greenhouse gas emissions, environmental sustainability and a thriving economy.

A state plan must recognize and incorporate innovative methods to pay for and manage infrastructure assets. Smarter management of existing state resources through implementing user fees in a way that shifts behavior toward desired outcomes can help the state meet its environmental goals at the same time generating revenue for maintenance or related projects. This type of demand management has been incorporated successfully in other countries and, with technological

advances such as toll collection transponders, for example, these practices can be integrated easily here. One critique of the state's estimates for the cost of needed infrastructure is that it assumes meeting future needs in the same way it has in the past, and basing projected infrastructure needs on an extrapolation of current and past per capita infrastructure spending. Such a strategy puts too much emphasis on increasing the supply of infrastructure, rather than reducing demand. In managing existing assets in new ways, the state can reduce the need to build additional infrastructure.

The state also should take advantage of innovations in the role of the private sector in building projects or providing infrastructure services. Public-private partnerships have been embraced in other states and countries to build new assets or revamp or manage existing resources more efficiently, and in some cases, private sector capital or labor helped the government complete a project that otherwise would not have moved forward. Public-private partnerships have enormous potential benefit, but they also come with added risks that must be understood and appropriately managed. The state's creation of the Public Infrastructure Advisory Commission brings some expertise to the table to help sort through potential issues with partnerships, but it is not enough. The state needs an organization of full-time experts to represent the state on these complex contract negotiations in order to reap the real benefits that can be gained by partnering with the private sector.

The current recession will eventually come to an end, and when it does, the state's position in the world economy, and its leadership in creating a more sustainable environment, will depend on how well it has pursued its many goals. Comprehensive infrastructure strategic planning and delivery can serve as a vehicle for California's recovery, paving the way with broad planning and smart investment and asset management choices that will ensure economic vitality, environmental sustainability, and high quality of life in California for generations to come.

Appendices & Notes

- ✓ *Public Hearing Witnesses*
- ✓ *Public Meeting Witnesses*
- ✓ *Environmental Goals and Policy Report*
- ✓ *Notes*

Appendix A

Public Hearing Witnesses

Public Hearing on Infrastructure Policy and Finance February 26, 2009

Cynthia Bryant, Director, Governor's Office of Planning and Research

Ellen Hanak, Director of Research and Senior Fellow, Public Policy Institute of California

David Crane, Special Advisor on Jobs and Economic Growth, Office of the Governor

Bill Hauck, President and Chief Executive, California Business Roundtable

Daniel Curtin, Director, California Conference of Carpenters

Ryan Orr, Executive Director, Collaboratory for Research on Global Projects, Stanford University

David Dowall, Professor, Institute of Urban and Regional Development, University of California, Berkeley

Ted Toppin, Consultant, Professional Engineers of California Government

Karen Finn, Program Budget Manager, California Department of Finance

Public Hearing on Infrastructure Policy and Finance March 26, 2009

Nick Hann, Senior Managing Director, Macquarie Holdings (USA) Inc.

Martin Wachs, Director, Transportation, Space and Technology, RAND Corporation

Richard Little, Director, Keston Institute for Public Finance and Infrastructure Policy

Irene Walsh, Managing Director, Infrastructure & Project Finance Advisory, Deloitte Corporate Finance LLC

Bob Poole, Director of Transportation Studies, Reason Foundation

***Public Hearing on Infrastructure Policy and Finance
May 28, 2009***

Bob Huff, California State Senator and
Vice Chair of the Senate Transportation
and Housing Committee

Alan Lowenthal, California State Senator and
Chair of the Senate Transportation and
Housing Committee

Will Kempton, Director, California Department
of Transportation

Daniel Sperling, Professor of Civil Engineering
and Environmental Science and Policy and
Director of the Institute of Transportation
Studies, University of California, Davis

Appendix B

Public Meeting Witnesses

*Subcommittee Meeting on Infrastructure Policy and Finance
January 22, 2009*

Tracy Arnold, Director for Jobs and Economic Growth, California Governor's Office

Richard Little, Director, Keston Institute for Public Finance and Infrastructure Policy, USC

Allan Emkin, Consultant, CalPERS Infrastructure Program

Farouki Majeed, Senior Investment Officer, CalPERS Infrastructure Program

Tim Gage, Consultant, Blue Sky Consulting

Jim Moose, Attorney (CEQA), Remy, Thomas, Moose and Manley LLP

Ellen Hanak, Senior Fellow and Director of Research, Public Policy Institute of California

Mark Paul, Senior Scholar and Deputy Director, New America Foundation California Program

Michael Keston, Board Chairman, Keston Institute for Public Finance and Infrastructure Policy, USC

Paul Rosenstiel, Deputy Treasurer, California State Treasurer's Office, Public Finance Division

***Subcommittee Meeting on Infrastructure Policy and Finance
May 5, 2009***

Wally Baker, Chairman, Green Tech Foundation

Wally Knox, Deputy Executive Director, External Relations, Port of Los Angeles

Mike Christensen, Deputy Executive Director of Development, Port of Los Angeles

Isaac Kos-Read, Director of Government Affairs, Port of Los Angeles

Louise Dyble, Associate Director for Research, Keston Institute for Public Finance and Infrastructure Policy

Arthur Leahy, Chief Executive Officer, Los Angeles County Metropolitan Transportation Authority

Norm Emerson, Emerson & Associates

Rich Macias, Director of Regional and Comprehensive Planning, Southern California Association of Governments

Deirdre Flanagan, Keston Institute for Public Finance and Infrastructure Policy

Marnie O'Brien Primmer, Executive Director, Mobility 21, The Southern California Transportation Coalition

Lee Harrington, Executive Director, Southern California Leadership Council, L.A. County Economic Development Corp.

Martin Wachs, Director of Transportation, Space and Technology, RAND Corporation

Kim Kawada, Policy and Legislative Affairs Program Manager, San Diego Association of Governments

***Subcommittee Meeting on Infrastructure Policy and Finance
June 30, 2009***

Tracy Arnold, Director for Jobs and Economic Growth, Office of the Governor

Andre Boutros, Deputy Director, California Transportation Commission

Larry Blain, Chief Executive Officer, Partnerships British Columbia

Will Kempton, Director, California Department of Transportation

Dale Bonner, Secretary, Business, Transportation and Housing Agency

David Livingston, President and Chief Executive Officer, Infrastructure Ontario

Jim Bourgart, Deputy Secretary for Transportation and Infrastructure, Business, Transportation and Housing Agency

Bimla Rhinehart, Director, California Transportation Commission

Appendix C

Environmental Goals and Policy Report

By statute, the Environmental Goals and Policy Report is required to be maintained, reviewed, revised and submitted to the governor and Legislature every four years. Before approval of the report, the governor must seek input from the Legislature, which can review the report by assigning it to a committee and holding hearings or taking other appropriate action. The Legislature may then act by resolution to approve the goals as an indication of legislative intent, or it may make state findings and conclusions and offer changes to the goals and policies of the report. The governor must consider the advice of the Legislature, and upon the governor's approval of the report, must submit the final report to the Legislature, state agencies, departments and boards, federal agencies and to the chief executive officers of every city and county in the state.

Once approved, the Environmental Goals and Policy Report is intended to do the following:

1. Record approved goals, policies and decisions of state government related to statewide growth and development and the preservation of environmental quality.
2. Advise the Legislature of statutory action required to implement state environmental goals and objectives.
3. Inform other levels of government and the public at large of approved state environmental goals and objectives and the proposed direction of state programs and actions in achieving them.
4. Provide a clear framework of goals and objectives as a guide to the preparation and evaluation of state functional plans.
5. Serve as a basis for judgments about the design, location and priority of major public programs, *capital projects and other actions*, including the allocation of state resources for environmental purposes through the budget and appropriation process.

The report is to serve as a guide for state expenditures, and the Office of Planning and Research must report to the governor and Legislature annually regarding implementation of the report's provisions.

Effective 2004, the statute was amended to require the Environmental Goals and Policy Report to be consistent with specific state planning priorities that are intended to promote equity, strengthen the economy, protect the environment, and promote public health and safety in the state, including in urban, suburban and rural communities. The state planning priorities include the following:

1. Promote infill development and equity by rehabilitating, maintaining and improving existing infrastructure that supports infill development and appropriate reuse and redevelopment of previously developed, underutilized land that is presently served by transit, streets, water, sewer and other essential services, particularly in underserved areas, and to preserving cultural and historic resources.
2. Protect environmental and agricultural resources by protecting, preserving and enhancing the state's most valuable natural resources, including working landscapes such as farm, range and forest lands, natural lands such as wetlands, watersheds, wildlife habitats and other wildlands, recreation lands such as parks, trails, greenbelts and other open space, and landscapes with locally unique features and areas identified by the state as deserving special protection.
3. Encourage efficient development patterns by ensuring that any infrastructure associated with development, other than infill development, supports new development that does all of the following:
 - a. Uses land efficiently.
 - b. Is built adjacent to existing developed areas to the extent consistent with specified priorities.
 - c. Is located in an area appropriately planned for growth.
 - d. Is served by adequate transportation and other essential utilities and services.
 - e. Minimizes ongoing costs to taxpayers.

Source: California Government Code, Sections 65041 – 65049.

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