

# **Public-Private Partnerships: Creating Tomorrow's Infrastructure**

How Governments Worldwide Link Partnerships to Future Prosperity, and What California Can Learn

*“Great discoveries and improvements invariably involve the cooperation of many minds.”*

--Alexander Graham Bell

## **EXECUTIVE SUMMARY**

California, with a gross domestic product (GDP) of \$1.7 trillion, is a significant player in today's global economy – and is poised to remain so in the future – unless the state allows its deteriorating infrastructure to limit its opportunities and success. For the state to compete in the 21<sup>st</sup> century, and ensure its residents' safety and enhance their quality of life, significant improvements need to be made as soon as possible not just to California's roads and highways, but to other essential forms of infrastructure, including airports, public transit, railways, ports, levees, water and wastewater facilities, energy and communication.

However, given the cost of California's infrastructure needs – which equates to approximately half of its GDP – it is impossible for the public sector to accomplish alone all that must be done. The private sector can play a key role in helping to revitalize California's infrastructure, and Governor Arnold Schwarzenegger – noting infrastructure success stories worldwide – has been a strong proponent of greater cooperation between the public and private sector and the use of public-private partnerships (PPPs or P3s), also known as “performance-based infrastructure” (PBI). These contractual arrangements are “formed between a public agency and private sector entity [and] allow for greater private sector participation”<sup>1</sup> in the delivery of infrastructure projects.

The P3 approach is just one solution for making vital improvements to California's infrastructure, but recent polls show that many Californians like the idea of P3s. However, there are lawmakers, unions, such as the Professional Engineers in California Government (PECG), and public agencies, including the California Department of Transportation (Caltrans), who still need convincing that the result of these relationships is the quick, efficient and cost-effective delivery of infrastructure projects. There is a misconception that P3s are privatization – the transfer of an existing public service or facility to the private sector. But P3s are simply a way of

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<sup>1</sup> From the U.S. Department of Transportation, Federal Highway Authority website: [www.fhwa.dot.gov/PPP](http://www.fhwa.dot.gov/PPP)

introducing private management into public service to improve the value citizens get from their infrastructure.<sup>2</sup> Some opponents assert that P3s will increase costs for taxpayers, but overlook the fact that leveraging private sector capital can actually save money in the long term by helping to stretch transportation dollars.<sup>3</sup> And there is concern that increased collaboration with the private sector for the delivery of infrastructure projects will somehow undermine the public sector and the contributions of its workforce, particularly its engineers, when there is clearly an opportunity for both sides to take the best knowledge, technology, tools and other resources available to create an infrastructure system for California to be admired.

However, leading countries – including Canada and the United Kingdom – have not been hindered by a philosophical dispute over P3s. They are using the model increasingly to deliver high-quality public infrastructure projects to their citizens. They understand that P3s provide access to private sector capital as well as an ample supply of skilled resources to supplement public sector expertise. P3s also allow the public sector to transfer certain risks associated with the ownership, operation and maintenance of an asset<sup>4</sup> –and private partners are held accountable for their performance. In P3 arrangements around the globe, “government and private entities share responsibility for project or service delivery...the public agency remains actively involved in overseeing a project, and the private entity may be responsible for project design, construction, finance and/or operations of the project.”<sup>5</sup>

This white paper provides an overview of California’s current infrastructure crisis and explores how P3s are embraced by countries with both well-established and emerging economies, as well as other states in this country, as an effective method for renewing, creating or maintaining vital infrastructure. These examples can provide valuable lessons to California as it works to rebuild its ailing infrastructure, and perhaps, help opponents of the P3 model gain a better understanding of how these arrangements can produce positive results that benefit everyone involved – particularly, the citizens of California.

***American Council of Engineering Companies of California  
(ACEC-CA)  
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2 “Gov. Schwarzenegger Announces Plan to Improve Public Infrastructure, Save Taxpayer Dollars,” Office of the Governor, media release, December 26, 2007: <http://gov.ca.gov/index.php?/press-release/8390/>

3 “Public Private Partnerships Could Help Stretch Transportation Dollars,” California Alliance for Jobs, [http://www.rebuildca.org/caj\\_media/CalAI\\_Progress\\_60\[2\].mp3](http://www.rebuildca.org/caj_media/CalAI_Progress_60[2].mp3)

4 *Issue Brief: Privatization vs. Public Private Partnerships: A Comparative Analysis*, California Debt & Advisory Commission, August 2007.

5 *Public-Private Partnerships: A Guide to Selecting a Private Partner*, California Debt & Investment Advisory Commission, March 2008.

## OVERVIEW

### *California's Infrastructure Crisis*

Little more than half a century ago, California boasted infrastructure that was not only considered reliable and effective, but admired around the globe. In the 1950s and 1960s, the state “had one of the world’s most extensive transportation infrastructure programs . . . [which paved] the way for much of the state’s subsequent economic prosperity.”<sup>6</sup> But California’s massive population and economic growth in subsequent decades now stands in the way of the state’s long-term success because of the burden that has been placed on its existing infrastructure. In fact, to meet the needs of its population today and prepare for the demands of its anticipated future growth, California must invest at least \$500 billion in its infrastructure by 2026, according to the state’s Department of Finance.

Consider California’s once-enviable roads and highways, which benefited greatly from the support of President Dwight D. Eisenhower’s Federal-Aid Highway Act of 1956: Decades of hard and relentless use – combined with neglect and a lack of adequate investment since their initial creation – have taken an extreme toll on these vital arteries, which simply cannot support the needs of today’s users. (Annual vehicle miles traveled throughout the state exceeded 329 trillion miles in 2006.<sup>7</sup>) The state’s infrastructure limitations are eroding the quality of life for many Californians, particularly in terms of “lost” time: In a recent national study, Los Angeles ranked first as the city with the slowest commute in the United States; in second place, tied with Washington, D.C., is the San Francisco-Oakland region.<sup>8</sup> By examining the infrastructure status in these two major population areas in California, it is understandable why this is the case.

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6 *Closing America’s Infrastructure Gap: The Role of the Public-Private Partnership*, research study, Deloitte, 2007: [www.deloitte.com/dtt/cda/doc/content/us\\_ps\\_PPPUS\\_final\(1\).pdf](http://www.deloitte.com/dtt/cda/doc/content/us_ps_PPPUS_final(1).pdf)

7 *2006 California Public Road Data*, Highway Performance Monitoring System: <http://www.dot.ca.gov/hq/tsip/hpms/hpmslibrary/hpmspdf/2006PRD.pdf>

8 *The 2007 Urban Mobility Report*, Tim Lomax and David Schrank, Texas Transportation Institute, The Texas A&M University System, September 2007: <http://mobility.tamu.edu>.

The sprawling, densely populated and ever-expanding Los Angeles metropolitan area, for instance, has woeful public transit, which means most residents are literally forced to drive to their destinations, no matter how difficult their commute. Meanwhile, in Northern California, public transit options such as the stalwart Bay Area Rapid Transit (BART), which was introduced in the 1960s, are more abundant, but in many ways, are limited, and nowhere near adequate to meet the needs of the current population, let alone the 8 million residents the Association of Bay Area Governments (ABAG) predicts will call the region home by 2020.

The San Francisco's Bay Area's unique transportation infrastructure "ecosystem" is a complex network of bridges, tunnels, highways, ramps and connectors relentlessly tested by the thousands of vehicles that traverse it every day. If one vital link from that system is offline for any length of time, it creates a domino effect that can disrupt the entire infrastructure ecosystem. The Bay Bridge, for instance, which connects the East Bay to San Francisco, is already doing much more than it was initially designed to do: "Arguably the region's most important transportation link . . . [it was] built in 1936 to serve 3.3 million vehicles a year, but now serves 41 million per year."<sup>9</sup> When incidents occur that significantly impact the "normal" traffic flow on that bridge alone and require a major repair operation – such as the Loma Prieta Earthquake in 1989, during which a 50-foot section of the bridge collapsed, and a tanker truck fire in April 2007 that destroyed part of the "MacArthur Maze" which feeds traffic to the bridge's eastern span – drivers must turn to alternate routes, including roadways in residential areas, thus stretching and stressing the Bay Area's delicate infrastructure web even further.

### ***The fuel factor***

In addition to challenging commutes, skyrocketing fuel prices – and the possibility of "congestion pricing" for use of essential infrastructure in the Bay Area such as the Golden Gate Bridge and even roadways in San Francisco, such as the Embarcadero – are adding new layers of pain to the daily lives of many Californians. Gasoline is up 76-cents-a-gallon since May 2007, according to the American Automobile Association, and is reaching beyond the \$4.00-per-gallon mark in more and more cities nationwide; throughout California, these prices are already a

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<sup>9</sup> "Residents Agree – Public Infrastructure Projects Need Boost from Public-Private Partnerships, Bay Area Council Poll Shows," media release, Bay Area Council ([www.bayareacouncil.org](http://www.bayareacouncil.org)), April 11, 2008.

reality. To top it off, some lawmakers, as well as recent reports from the National Surface Transportation Policy and Revenue Study Commission and the Urban Land Institute (ULI), have suggested hiking up the 18.4-cent federal gas tax – which fuels the federal highway and transit construction trust fund and has not been raised since 1993 – by as much as 40 cents to \$1.00 per gallon as a way to offset a \$3.7 billion shortfall expected for the start of fiscal 2009.<sup>10</sup> It is estimated that the United States needs an additional \$170 billion annually to upgrade its infrastructure; California alone faces a \$16 billion annual shortfall to upgrade its roads.<sup>11</sup>

By adding ballooning gas prices and potential toll and tax increases to the mix, it is even easier to understand why Californians have a growing level of frustration about their state's infrastructure problems. They already must waste hours every week sitting in their vehicles on jam-packed freeways, with idling engines burning through gas that is becoming increasingly difficult for many to afford; now, they face the prospect of paying even more in the future for this “privilege” in the form of congestion tolls and higher taxes. The time- and fuel-wasting of traffic congestion affects California residents financially in other ways, too: The Texas Transportation Institute estimates that the San Francisco Bay Area's traffic woes alone cost each commuter \$1,121 in lost wages and 47 gallons of wasted fuel annually.<sup>12</sup> According to the same study, traffic gridlock nationwide consumes 4.2 billion of valuable labor hours annually, which translates to a \$78 billion loss for the U.S. economy.

### ***Californians eager for Public-Private Partnerships (P3s)***

Significant improvements need to be made as soon as possible not just to California's roads and highways, but to other essential forms of infrastructure, such as airports, public transit, railways, ports, levees, water and wastewater facilities, energy and communication. (A recent ULI study revealed more than 122 high-risk levees in danger of failure in the United States; many are located in California along the Sacramento-San Joaquin River Delta. To understand the potential devastation of levee breaches, look not only to New Orleans in the aftermath of Hurricane

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<sup>10</sup> “Gridlock Alert: 5 Cities with the Worst Traffic,” By Christopher Elliott, The Miami Herald, April 30, 2008,

<sup>11</sup> “Report Calls for National Gas Tax Hike to Fix Ailing Roadways,” By Gary Richards, San Jose Mercury News, April 29, 2008.

<sup>12</sup> *The 2007 Urban Mobility Report*.

Katrina, but to this year's historic flooding throughout the Midwest.) Even schools, recreational facilities and hospitals statewide – which often are forgotten when discussing infrastructure improvements due to the focus on higher-profile projects such as freeways and bridges – need a big lift. In its 2006 Infrastructure Report Card for California<sup>13</sup>, the American Society of Civil Engineers (ASCE) gave the state an overall “infrastructure GPA” of “C-.” Some of the grades contributing to that low GPA: A “D+” for transportation and an “F” for levees.

These poor grades are even more troubling when considering that California is the country's third-largest state and biggest economy. If it was an independent country, California, with a GDP of \$1.7 trillion, would be one of the 10 largest economies in the world, along with Canada and the United Kingdom.<sup>14</sup> Today the state boasts a population of more than 37 million – which continues to grow – and its wealth is derived from output and trade related to industries ranging from agriculture to biotechnology to defense. California plays an important role in today's global economy – and is poised to do so in the future – unless it allows its deteriorating infrastructure to limit its success. However, given the cost of California's infrastructure needs – which equates to approximately half of its GDP – it is impossible for the public sector to accomplish alone all that needs to be done.

The private sector can play an important role in revitalizing California's infrastructure, and Governor Arnold Schwarzenegger – who has taken note of recent infrastructure successes by other countries and is eager for California to adopt best practices and follow their lead – has been encouraging greater cooperation between the public and private sector in the form of public-private partnerships (P3s) or “performance-based infrastructure” (PBI). P3s are contractual arrangements “formed between a public agency and private sector entity that allow for greater private sector participation”<sup>15</sup> in the delivery of infrastructure projects. This approach is just one solution for improving California's infrastructure, of course, but it appears many Californians are

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<sup>13</sup> *ASCE California Infrastructure Report Card 2006*, American Society of Civil Engineers: [www.ascecareportcard.org](http://www.ascecareportcard.org)

<sup>14</sup> “Where Does California Rank – 2006 Update,” Center for Continuing Study of the California Economy, *Numbers in the News*, July 2007.

<sup>15</sup> From the U.S. Department of Transportation, Federal Highway Authority website, [www.fhwa.dot.gov/PPP](http://www.fhwa.dot.gov/PPP)

willing to try it – even if some lawmakers, unions and public agencies still need convincing that P3s can deliver infrastructure projects quickly, efficiently and cost-effectively.

According to a recent poll by the Bay Area Council, 87 percent of residents in the San Francisco Bay Area agree that their region has a serious problem keeping pace with the demands for public infrastructure projects, and those surveyed “overwhelmingly support...establishing public-private partnerships...to construct or rebuild desired infrastructure projects.”<sup>16</sup> Californians also showed their strong support for infrastructure improvement by approving a \$37.3 billion bond package in 2006, which included the \$19.9 million Proposition 1B: Highway Safety, Traffic Reduction, Air Quality, Port Security Bond Act of 2006 (for repairing and expanding highways, bridges and roads, improving and expanding local transit and rail, and strengthening port security; and the \$4.09 billion Proposition 1E: Disaster Preparedness and Flood Protection Act of 2006 (for repair of levees and flood control infrastructure). These funds are being distributed to infrastructure projects throughout California as part of the governor’s Strategic Growth Plan; however, to date, the state government still cannot exercise broad authority to enter P3s.

### ***California’s P3 History***

Even though P3s currently are being met with resistance by some lawmakers and other opponents, it should be noted that these arrangements are not a new idea for building or revitalizing California’s infrastructure. In fact, the Golden Gate Bridge was, essentially, a P3 project, even though “public-private partnership” was not part of infrastructure-related vernacular in the 1930s. Over the years, California has shown leadership in the P3 arena. In 1989, the state passed Assembly Bill 680 which authorized the California Department of Transportation (Caltrans) to enter into agreements with private entities for development, construction and operation of a handful of transportation projects. This led to the construction of SR-91, an east-west toll road in Orange County, and SR-125, a toll road in San Diego County.<sup>17</sup>

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<sup>16</sup> “Residents Agree – Public Infrastructure Projects Need Boost from Public-Private Partnerships, Bay Area Council Poll Shows,” media release, Bay Area Council, April 11, 2008.

<sup>17</sup> *Issue Brief: Privatization vs. Public Private Partnerships: A Comparative Analysis.*

SR-91, which was completed in 1995, was the first privately funded toll road built in the United States since the 1940s, and the first fully automated toll-way in the world. The 10-mile-long SR-125, also known as the South Bay Expressway, is San Diego's first toll road, and was completed in November 2007. The South Bay Expressway – long considered a missing link in San Diego's freeway network – is vital to California's economy because it “provides quick and easy access to and from Mexico....thereby helping to support increased trade resulting from the North American Free Trade Agreement (NAFTA).”<sup>18</sup>

Another P3 success for California in the 21<sup>st</sup> century is the \$2.4 billion Alameda Corridor Project in Southern California. Completed in 2002, it is “hailed by infrastructure industry leaders today as the most successful public infrastructure project unveiled in the last 20 years, and clearly underscores the benefits of [P3s] and their ability to deliver projects faster, better and more cost-effectively than is possible through California's traditional financing and development methods.”<sup>19</sup> The Alameda Corridor Project ([www.acta.org](http://www.acta.org)) is a 20-mile-long freight rail expressway – a series of bridges, overpasses and street improvements separating freight rail and street traffic – extends through eight cities and links the vital ports of Long Beach and Los Angeles with the transcontinental rail network.

P3s, including design-build concepts, were made part of Governor Schwarzenegger's 2007 California Five-Year Infrastructure Plan “as a way to leverage limited public resources to help address the state's growing infrastructure needs.”<sup>20</sup> To develop P3s that suit the state's unique infrastructure needs, California needs only to look to the world for guidance.

## **P3s: AT WORK AROUND THE GLOBE**

*A tool for delivering infrastructure, enhancing prosperity*

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18 *Stepping Up the Game: Revitalizing California's Infrastructure through Public-Private Partnerships (P3s) – Quickly, Efficiently and Cost-Effectively*, Consulting Engineers and Land Surveyors of California (CELSOC), January 2008.

19 “California Dreaming?” by Paul Meyer, executive director, CELSOC, PPP Bulletin, April 2008.

20 *Issue Brief: Privatization vs. Public-Private Partnerships: A Comparative Analysis*, California Debt & Investment Advisory Commission, August 2007.

Throughout many countries – as well as in some parts of the United States – P3s are being used increasingly to deliver high-quality public infrastructure projects. The reasons that any local, state or federal government ultimately decides to engage a private partner in an infrastructure project are varied, but contrary to what might be an obvious conclusion to make, cost is not always the primary driver, even though the private sector obviously represents an important source of capital for these initiatives. P3s, in general, are more about the public sector making sure that every dollar spent on an infrastructure project is spent well. Thus, ensuring timely delivery of an infrastructure project is often a key factor for a public entity enlisting help from the private sector, especially since cost overruns resulting from delays have the potential to derail – or completely shelve – an infrastructure project.

Also, P3s enable the public sector to assemble the right type of expertise and level of manpower for every project, and these relationships provide access to the latest knowledge, technology and tools available in the engineering sector today. P3s can be viewed as a type of “temporary staffing” arrangement which gives the public sector the skilled resources it needs to complete a job well, without it having to conduct any substantial or permanent hiring in-house. That means it also can save on the time and cost related to laying off excess personnel once an infrastructure project is completed.

Perhaps most importantly, P3s allow the public sector to transfer certain risks associated with ownership, operation and maintenance of an asset<sup>21</sup> – and private partners are held accountable for their performance. In a P3 arrangement, “government and private entities share responsibility for project or service delivery...the public agency remains actively involved in overseeing a project, and the private entity may be responsible for project design, construction, finance and/or operations of the project.”<sup>22</sup>

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21 *Issue Brief: Privatization vs. Public Private Partnerships: A Comparative Analysis.*

22 *Public-Private Partnerships: A Guide to Selecting a Private Partner*, California Debt & Investment Advisory Commission, March 2008

Following are just some of the countries that already have embraced the P3 concept or are exploring the role this delivery model can play in the development of their future infrastructure; California has an opportunity to learn from these P3 leaders and emerging market adopters. A commonality to note among some of these examples is that the vision for infrastructure improvement through the deployment of P3s is often planned out or guided by a special-purpose entity or expert organization whose purpose is to help arrange, implement and measure the success of these types of projects. Governor Schwarzenegger has said he wants to take a similar approach by establishing “PBI California,” a state-owned entity that would be a “center for excellence” with a mission to determine which infrastructure projects can benefit from the private sector’s involvement, and will represent California in such negotiations and monitor performance. In addition, to assist with P3 development at the local level, California Assembly Member Anna Caballero has proposed establishment of a “state clearinghouse” to aid local agencies in setting up P3s for local infrastructure funding.<sup>23</sup>

Similar concepts are being proposed by some lawmakers at the federal level, as well. In a recent speech at the American Public Transportation Association (APTA) in San Francisco, California Representative and House Speaker Nancy Pelosi said, “One idea being considered is an infrastructure development bank to promote public and private investment in projects of regional and national significance, including public transportation projects. The bank would be an independent federal entity that would evaluate major infrastructure proposals and finance the best of them using a variety of financial tools.”<sup>24</sup> Pelosi also noted that task of fixing infrastructure in the United States is “so large that it demands the involvement of every level of government and the private sector.”<sup>25</sup>

Some examples of P3 projects from around the world:

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23 “Assembly Member Anna Caballero Calls for Increased Focus on Local Public-Private Partnerships,” media release, Office of Assembly Member Anna Caballero, January 8, 2008.

24 “Pelosi Keynote Address at American Public Transportation Association Rail Conference in SF,” State News Service, June 2, 2008.

25 Ibid.

## Australia

According to a 2004 estimate by the Australian Council for Infrastructure Development, the Australian economy is experiencing more than \$6 billion per year in lost production as a result of a lack of investment in its infrastructure that went on for decades. The country's infrastructure situation is similar to that of the United States: Australia "including its six states, has been resting on laurels of post-World War II infrastructure investment, spending only about \$5.8 billion annually from 1985 to 2005...[and today has] a \$23 billion shortfall" due to underinvestment.<sup>26</sup>

Noting the individual P3 project success stories of Australian states such as Queensland (e.g., the North-South Bypass Tunnel started in 2006 and slated for completion in 2010, [http://www.brisbane.qld.gov.au/BCC:BASE::pc=PC\\_144](http://www.brisbane.qld.gov.au/BCC:BASE::pc=PC_144)), and Victoria (e.g., the \$2.5 billion EastLink motorway, scheduled to open in June 2008 and currently Australia's largest urban road infrastructure development<sup>27</sup>) Australia's federal government has decided to explore the use of performance-based infrastructure projects countrywide. In May 2008, Australia's government – currently led by Prime Minister Kevin Rudd – announced that it had allocated AUS\$20 million in its 2008-2009 budget, to be used over four years by Infrastructure Australia, an independent, 12-member council established in early 2008 with a mission "to bring national leadership and coordination to infrastructure development" to the country "for the first time since Federation."<sup>28</sup>

Infrastructure Australia now is moving forward with a national audit to determine the capacity and condition of nationally significant infrastructure. The findings of the Infrastructure Australia audit will be announced by March 2009, and will include a "Infrastructure Priority List"<sup>29</sup> that will be used to help guide public and private investment in addressing the country's long-term infrastructure needs, including transport, water, energy and communication. Infrastructure

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<sup>26</sup> *Infrastructure 2008: A Competitive Advantage*, a global infrastructure report published by the Urban Land Institute (ULI) ([www.uli.org](http://www.uli.org)) and Ernst & Young (EY) ([www.ey.com](http://www.ey.com)), Spring 2008.

<sup>27</sup> "Countdown to Historic EastLink Infrastructure Opening Begins," media release, Office of the Premier, May 12, 2008.

<sup>28</sup> "Rudd Government to Dramatically Overhaul National Infrastructure Policy," media release, January 21, 2008: [http://www.minister.infrastructure.gov.au/aa/releases/2008/January/AA004\\_2008.htm](http://www.minister.infrastructure.gov.au/aa/releases/2008/January/AA004_2008.htm)

<sup>29</sup> "\$20 million Gets Infrastructure Reform Rolling," media release, May 13, 2008: [http://www.minister.infrastructure.gov.au/aa/releases/2008/May/budget-infra\\_09-2008.htm](http://www.minister.infrastructure.gov.au/aa/releases/2008/May/budget-infra_09-2008.htm)

Australia also is developing “nationally consistent guidelines” for public-private partnerships that will make it easier and less expensive for “local and international financiers to invest in Australian infrastructure.” These guidelines are to be released by October 2008.

## **Canada**

A report released in 2007 by the Federation of Canadian Municipalities (FCM) suggests that nearly 80 percent of Canada’s municipal infrastructure – including wastewater systems and transit – is past its service life and “near collapse.”<sup>30</sup> And like Australia and the United States, Canada is in great need of overhauling many of its road systems and bridges because approximately 60 percent of its transport infrastructure is half a century old.<sup>31</sup> Upgrading the country’s infrastructure, and making sure it can adequately address the country’s future growth, will require billions in investment: “Canada’s public infrastructure gap sits between \$50 billion and \$125 billion,” said Jane Peatch, executive director of the Canadian Council for Public Private Partnerships (CCPPP). “The figure is even more telling because governments have been increasing their infrastructure budgets over the past five years.”<sup>32</sup>

To address its existing infrastructure problems and create a system that can help promote and sustain the country’s future growth, Canada has been turning increasingly to P3s. As of May 2008, Canada had 66 P3 projects planned or underway in British Columbia, Ontario and Quebec – and each of those three provinces have their own government offices created specifically to handle these types of projects. In addition, all of Canada’s other provinces and territories are weighing P3 opportunities. To date, British Columbia has been the most active with P3 projects, which include the high-profile Sea-to-Sky Highway Improvement Project that links communities from West Vancouver and Whistler ([www.seatoskyimprovements.ca](http://www.seatoskyimprovements.ca)) and the Canada Line rapid transit system ([www.canadaline.ca](http://www.canadaline.ca)). Governor Schwarzenegger has pointed to both projects as examples that California should look to when developing its own P3 infrastructure initiatives.

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30 *Danger Ahead: The Coming Collapse of Canada’s Municipal Infrastructure*, by Saeed Mirza, Ph.D., Professor of Civil Engineering and Applied Mechanics, McGill University. Report for the Federation of Canadian Municipalities: <http://www.fpeim.ca/FCM%20Mirza%20Report%20En.pdf>

31 *Infrastructure 2008: A Competitive Advantage*.

32 “Law Firms Ride P3 Boom,” by Julius Melnitzer, Financial Post, May 14, 2008.

For the 60-mile-long, C\$600 million Sea-to-Sky Highway project, to be completed by spring 2009, a partnership was created between the British Columbia Ministry of Transportation and a private partner and was the country's "first major provincial transportation project to be procured as a public-private partnership using a Design Build Finance Operate (DBFO) Model."<sup>33</sup> Performance payments were defined explicitly by the Province up front, and are based upon the highway's availability to users during construction and for 25 years after the project is completed. "There is no toll, the risk of cost overruns is borne entirely by the private partner, and substantial financial penalties will accrue if the schedule is not maintained."<sup>34</sup> The Sea-to-Sky Highway has been designed to meet the area's growth and travel demands until 2020 with additional improvements phased in as required, and the resulting heightened economic activity along the corridor is expected to create 6,000 new jobs for British Columbia.<sup>35</sup>

British Columbia's Canada Line is a C\$2 billion, 19.5-kilometer-long rapid transit rail line connecting downtown Vancouver to Vancouver International Airport, and includes an underground tunnel, an elevated guide-way, a park-and-ride facility and 16 stations.<sup>36</sup> Like the Sea-to-Sky Highway project, Canada Line is being delivered through a DBFO P3, through which private partner InTransitBC is designing, constructing and partially financing the system, and will own the train vehicles, and operate and maintain the Line under an operating license from the Greater Vancouver Transportation Authority through to the end of the 35-year agreement.<sup>37</sup>

Canada also has found success with the P3 model in other infrastructure areas, applying it to projects such as courthouses, schools and hospitals and medical research centers – and is eager to get more P3 projects underway. In early 2008, Canada's federal government established PPP

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33 *Sea-to-Sky Highway Improvement Project*, case study, Partnerships British Columbia:  
[http://www.partnershipsbc.ca/pdf/STS\\_case\\_study\\_vfm\\_chg.pdf](http://www.partnershipsbc.ca/pdf/STS_case_study_vfm_chg.pdf)

34 "Selected Examples of Performance-Based Infrastructure Projects," California's Office of the Governor, 2007

35 Ibid.

36 *Canada Line*, case study, Partnerships British Columbia:  
<http://www.partnershipsbc.ca/pdf/Canada%20Line%20case%20study.pdf>

37 Ibid.

Canada, Inc., a Crown Corporation<sup>38</sup>, to work specifically with the public and private sectors to encourage further development of the country's P3 market. The creation of this entity followed Canada's 2007 commitment to its C\$1.3 billion Public-Private Partnerships Fund (P3 Fund), a flagship program of the country's seven-year "Building Canada" infrastructure initiative, also instituted in 2007, and coordinated by a government organization, Infrastructure Canada.

The Building Canada program encourages "the development and use of P3 best practices by requiring that P3s be given consideration in larger infrastructure projects funded through the Gateways and Border Crossings Fund, a merit-based fund used for enhancing infrastructure at key locations, such as major border crossings between Canada and the United States, and the Building Canada Fund (BCF) infrastructure program, which plans to invest \$33 billion in infrastructure projects. The primary benefits of P3s emphasized by the Building Canada program include: access to private-sector capital and expertise; faster completion of projects; and the transfer of risk to the private sector.

Canada's new P3 Fund is being used specifically "to develop and facilitate opportunities for public-private partnerships to finance and deliver infrastructure projects throughout Canada as an alternative to traditional government infrastructure procurement."<sup>39</sup> The program parameters of the P3 Fund are now established and will be administered by PPP Canada Inc.

## **United Kingdom**

For more than two decades, the United Kingdom's public sector has embraced working with the private sector and the country "offers the most mature model for delivering infrastructure projects through non-traditional methods, namely public-private partnerships."<sup>40</sup> Today, approximately 15 percent of the U.K.'s infrastructure expenditures are P3 projects – which equates to, roughly, more than 700 projects.<sup>41</sup> Like Canada, the U.K. has looked beyond

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38 A state-controlled company or enterprise in Commonwealth realms within the Commonwealth of Nations:  
<http://www.commonwealth-of-nations.org>

39 *Improving California's Infrastructure Services: The California Infrastructure Initiative*, Institute of Urban and Regional Development (IURD), University of California, March 2008.

40 *Ibid.*

41 *Infrastructure 2008: A Competitive Advantage.*

roadway and transit initiatives and has established P3s to deliver a wide array of projects countrywide, including prisons, hospitals, schools, and military barracks. Even the world-famous London Underground Limited (LUL) transit system has been operating as a P3 since 2003, after LUL signed three 30-year contracts with Metronet and Tube Lines.<sup>42</sup>

In the early 1990s, the Private Finance Initiative (PFI) was created in the U.K. to help promote the private sector's involvement in public projects; then, building on that success, in 2000 "the government established Partnerships UK...a public-private partnership incorporated as a private sector company . . . [with] a mission to 'ensure continued access to procurement expertise for the public sector.'"<sup>43</sup> Since Partnerships UK (PUK) was launched, the organization has helped set in motion more than 450 PFI projects – including waste management, IT infrastructure and even street lighting projects – that are worth over £40 billion.

## **India**

India's middle class is growing fast, and the country's recent explosive economic growth can be hindered perhaps only by its overall lack of modern infrastructure. However, on its own, India's government simply cannot address all the infrastructure woes that the second most populous country in the world faces. Even though India is still considered an emerging market for infrastructure investment, many California-based companies already do business with or have offshore operations in India, so what that country is doing to modernize its infrastructure through the use of P3s is very relevant to California and its economy. In addition, a recent study by corporate advisory firm Grant Thornton projects that – if India manages to sustain its current rate of growth – its economy will catch up to the United States by 2050.<sup>44</sup>

According to figures released by India's government, the country needs at least US\$488 billion for investment in various infrastructure sectors during the next five years.<sup>45</sup> It is anticipated that

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<sup>42</sup> *London Underground: Are the Public Private Partnerships Likely to Work Successfully?*, Report by the Comptroller and Audit General, National Audit Office, June 17, 2004.

<sup>43</sup> *Improving California's Infrastructure Services*, The California Infrastructure Initiative.

<sup>44</sup> *International Business Report 2008 – Emerging Global Markets*, Grant Thornton, May 2008.

<sup>45</sup> *Scheme and Guidelines for India Infrastructure Project Development Fund*, Department of Economic Affairs,

“a significant share of this investment is expected from the private sector. [P3s] present the most suitable option of meeting these targets, not only in attracting private capital in creation of infrastructure, but also in enhancing the standards of delivery of services through greater efficiency.” The value of P3s in India had reached 3.5 percent of GDP by year-end 2006.<sup>46</sup>

Today, India is working to make it easier for foreign investors to play a direct role in bringing the country’s infrastructure into the 21<sup>st</sup> century, through both fully private ventures and P3s. The government is hoping for “private sector participation in telecom, roads, ports, civil aviation and airports leading to visible improvements in service quality, time and cost.”<sup>47</sup> Some examples of P3 initiatives currently taking flight in India:

- *Maharashtra*: Located in western India, Maharashtra is the country’s third-largest state, is looking to boost economic growth through P3s: It recently turned to the World Bank’s International Finance Corp. (IFC) for guidance on developing infrastructure projects specifically through P3s. It received a net commitment of US\$1 billion from the World Bank, and the IFC is now assisting the state-run Maharashtra Urban Infrastructure Development Co. (MUIDC) with creating a business and financial plan to meet its infrastructure goals using P3s. According to World Bank group executive director, Dhanendra Kumar: “Infrastructure is a priority in South Asia, where there is a shortage of bankable projects. Successful examples worldwide indicate that [P3s] are useful in opening up markets.”<sup>48</sup>
- *Andhra Pradesh*: The IFC also recently entered into a Memorandum of Understanding (MoU) with Andhra Pradesh – a southern state with longstanding agricultural prowess that also is a leader in hydro-electric generation and an increasingly significant player in India’s information technology (IT) and biotechnology industries – to develop its

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Ministry of Finance, and Government of India: [http://www.pppinindia.com/images/News/PDFs/guideline\\_scheme\\_IIPDF.pdf](http://www.pppinindia.com/images/News/PDFs/guideline_scheme_IIPDF.pdf)

46 *Infrastructure 2008: A Competitive Advantage*.

47 “Scope for Foreign Investment in Infrastructure in India: Officials,” The Press Trust of India, May 15, 2008.

48 “IFC to Advise India’s Maharashtra on Infrastructure Projects,” Asia Pulse newswire, May 14, 2008.

infrastructure projects through the use of P3s.<sup>49</sup> One project in development: The IFC is currently advising the Infrastructure Corporation of Andhra Pradesh (INCAP) on the Vizag-Kakinda coastal roads project that will include new and existing toll roads as well as connecting radial roads. IFC is handling the due diligence review, helping to design the financial model and holding consultations with potential bidders. It also is recommending an approach for private sector involvement, including allocating risks and responsibilities between the public and private sectors.

### **Mexico and Latin America**

Mexico has a longstanding and significant economic relationship with California: In fact, it currently is the state's top trade partner. The country is "California's number one export market, with \$19.6 billion in export trade flowing to Mexico...[and] since 2002, California's agricultural exports to Mexico have nearly doubled in value, making it one of the state's fastest growing export markets."<sup>50</sup> In addition, the country is the United States' second largest trade partner next to Canada; Mexico alone represents an estimated 5 percent of the total U.S. agricultural exports to this market.

Thus, it is only logical for California to have a vested interest in seeing Mexico's infrastructure improved and expanded; likewise, it is important to Mexico that the infrastructure in California – as well as other parts of the United States, such as neighboring Texas – be able to sustain and grow the current level of trade. "Investing in infrastructure on both sides of the border and utilizing public-private partnerships is an investment in the future and will improve goods movement, trade and quality of life in California and Mexico for years to come."<sup>51</sup>

Mexico also was listed as one of the top five countries for investment and development in the newly released Grant Thornton study of emerging markets. "The Mexican economy has had unprecedented stability for the last seven to eight years," said Hector Perez, managing partner of

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49 Ibid.

50 "Governor Meets with Mexico President Felipe Calderon, Builds on Strong Partnership between California and Mexico," U.S. Government News, February 13, 2008.

51 Ibid.

Grant Thornton in Mexico. “Inflation and the peso have been stable. The country has 12 free trade agreements with 43 countries and exports have surged. Mexico also benefits from well-qualified labor, together with powerful manufacturing and assembly industries. Its proximity to the United States, too, is an important feature.”<sup>52</sup>

Governor Schwarzenegger went on a trade trip to Mexico in early 2008 to meet with President Felipe Calderon to discuss, among other things, infrastructure. Mexico recently unveiled its National Infrastructure Plan, which is focused on promoting major investment in the country’s road, rail, air and sea transport infrastructure, as well as telecommunications, water supply systems, dams, electricity and oil installations. The ambitious initiative calls for billions of dollars to be invested in Mexico’s infrastructure over the next five years, and focuses on increased use of P3s to help meet goals. Some of the infrastructure initiatives the Calderon government hopes to achieve in this short time frame: modernizing more than 12,000 miles of highways and rural roads and expanding rails by more than 900 miles throughout the country, and developing suburban rail, particularly around Mexico City.<sup>53</sup>

Meanwhile, experts suggest that the Latin American region, as a whole, also must strive to develop P3s – in addition to investing at least 6 percent to 7 percent of its overall GDP annually – if it wants to bring its infrastructure to a level that matches that of countries such as South Korea during the next 20 years.<sup>54</sup> In April 2008, Enrique Garcia, president of the Andean Development Corporation (CAF)<sup>55</sup>, a multilateral financial institution that supports sustainable development of shareholder countries, including Mexico, Brazil, Chile and Peru, said the public and private sector must work together to create an “integrated infrastructure network” for the region – which includes everything from ports to telecommunication networks to wastewater treatment facilities – because neither side will “be able to do this alone.”<sup>56</sup> Responding to that

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<sup>52</sup> *International Business Report 2008 – Emerging Global Markets*.

<sup>53</sup> *Infrastructure 2008: A Competitive Advantage*.

<sup>54</sup> “PPP Development Essential for Regional Integrated Infrastructure Network,” *Business News Americas*, April 4, 2008.

<sup>55</sup> Andean Development Corporation (CAF) website: [www.caf.com](http://www.caf.com)

<sup>56</sup> *Ibid.*

call to action, perhaps, Peruvian President Alan Garcia signed into law a bill that will promote local and regional public-private partnerships specifically for infrastructure development.<sup>57</sup>

## **P3s IN THE UNITED STATES**

### *A solution for state and local governments*

While other countries are certainly more liberal with their use of P3s, there are some state and local governments in the United States that have recently entered into – or are trying to establish – similar arrangements for their infrastructure projects. In fact, a 2008 study that analyzed the transportation strategies and practices of 10 states – including California – revealed that all states *but* California “make deliberate and significant use of the private sector to assist them in successfully delivering projects to the public.”<sup>58</sup>

Following are just four examples of how the public and private sector are either working together – or planning to do so – on infrastructure initiatives in the United States. (Note: At the time of publication, some of these deals had not yet been finalized.):

- **Chicago** – The Chicago Skyway is a 7.8-mile elevated toll road connecting I-94 (Dan Ryan Expressway) in Chicago to I-90 (Indiana Toll Road – also now a P3) at the Illinois-Indiana state line. The facility includes a 3.5-mile elevated mainline structure crossing the Calumet River. Built in 1958, the Skyway was operated and maintained by the City of Chicago Department of Streets and Sanitation. The facility carried approximately 50,000 vehicles per day in 2005. In March 2004, as a \$250 million dollar road reconstruction project that began in 2001 was nearing an end, the City of Chicago issued a request for qualifications (RFQ) from potential bidders interested in operating the facility on a long-term lease basis. It received 10 responses and in May 2004 invited five groups to prepare proposals. The Skyway Concession Company, LLC (SCC) assumed

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<sup>57</sup> “Garcia Signs Local, Regional PPP Promotion Bill,” Business News Americas, May 20, 2008.

<sup>58</sup> *A National Assessment of Transportation Strategies and Practices: Lessons for California*, prepared by Tom Warne and Associates, LLC, for the California Taxpayers’ Association (Cal-Tax), and the Infrastructure Delivery Council, a CELSOC affiliate, February 12, 2008.

operations on the Skyway on January 26, 2005, and is responsible for all operating and maintenance costs under a 99-year operating lease, and has the right to all toll and concession revenue. The transaction gave the City of Chicago a \$1.83 billion dollar cash infusion, and represented the first long-term lease of an existing toll road in the United States.<sup>59</sup>

- **Miami** – In early 2008, the Florida Department of Transportation announced that a consortium known as Miami Access Tunnel LLC (MAT) had been selected to design, build, finance, operate and maintain the Port of Miami Tunnel – a \$1.2 billion project that has been languishing on the drawing board for 20 years.<sup>60</sup> MAT’s main partners are Babcock & Brown Infrastructure Group US LLC and Bouygues Travaux Publics SA, which has constructed several tunnels, including the French side of the Chunnel beneath the English Channel. The concession contract, if approved, will provide MAT with availability payments for 30 years after the tunnel opens to traffic. Once the deal is sealed, MAT will have 47 months to build the twin, two-lane tubes, which would be “the largest ‘soft-bore’ tunnel in the United States, and the first built under a critical waterway.”<sup>61</sup> To finance and build the tunnel, the private vendors are guaranteeing \$914 million; meanwhile, the state is covering \$457 million for the construction and another \$250 million for operation and maintenance costs for the life of the deal. Currently, more than 26,000 vehicles a day drive into the Port of Miami, including 3,600 heavy trucks and 40 buses.<sup>62</sup> A key goal of the tunnel project: Route heavy truck traffic underground and make downtown Miami more pedestrian- and driver-friendly.
- **Nevada** – Nevada’s Transportation Board, in May 2008, approved a public-private road project in Las Vegas that will improve Interstate-15 capacity through that city through the conversion of high-occupancy vehicle and emergency lanes to managed electronic toll

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59 Source: Chicago Skyway website: [www.chicagoskyway.org](http://www.chicagoskyway.org)

60 “Planned Miami Port Tunnel: Can We Dig It?” The Miami Herald, January 15, 2008.

61 Ibid.

62 Ibid.

lanes with video enforcement. One reason the Nevada Department of Transportation turned to the private sector for this transportation project is “because it currently faces a \$6 billion highway funding shortfall [and] needs an extra \$80 million to continue its roads and highways construction program for fiscal years 2009-10.”<sup>63</sup>

- **Pennsylvania** – In May 2008, a team consisting of Citi Infrastructure Investors, Barcelona-based toll road operating company, Abertis Infraestructuras, and Spanish investment firm, Criteria CaixaCorp, won the bid for a 75-year lease of the historic Pennsylvania Turnpike. The \$12.8 billion deal, if approved by the Pennsylvania General Assembly, would be the largest bid for private operation of a U.S. toll road.<sup>64</sup> The Commonwealth of Pennsylvania will retain ownership of the 570-mile turnpike. Nearly \$4 billion of the lease payment will be used by Governor Edward G. Rendell’s Administration for highway, bridge and transit projects. This will be a critical capital boost for Pennsylvania, where bridge improvement is a top priority. Pennsylvania has “nearly 6,000 structurally deficient bridges, the most of any state in the nation . . . [and] PennDOT estimates the cost of repairing all of the structurally deficient bridges on the state system at approximately \$11 billion.”<sup>65</sup>

## CONCLUSION

Looking to examples of P3 success stories around the world, it is clear that collaboration between the private sector and public sector is yielding impressive results with obvious benefits for the citizens and businesses and economies of these countries. Meanwhile, more state and local governments in the United States are warming up – slowly – to the idea of P3s and are

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63 “Nevada Approves First Public-Private Road Project,” by Tony Illia, *Engineering News Record*, May 19, 2008.

64 “Penn Turnpike Leases for \$12.8B,” by Casey Freeman, *GlobeSt.com*, May 19, 2008.

65 “Pennsylvania Turnpike Lease Would Boost Funding for Roads, Bridges, Transit,” media release, Pennsylvania Office of the Governor, May 19, 2008.

trying to negotiate such arrangements. It should be noted, however, that the concept of public and private sector collaboration on infrastructure projects is not a new solution for this nation:

From America's earliest transportation efforts, PPPs have played a vital role in building America's transportation network, particularly within the context of goods movement. In fact, the development of our nation's transportation infrastructure historically has been a joint venture between the public and private sectors. History has shown trade gateway and corridor infrastructure is well suited to financing through PPPs. In our country's early decades, toll roads dominated land transportation. In the 1800s, private investment and public subsidies built the transcontinental railroads. In the early 1900s, private monies built and operated many ports and port facilities.<sup>66</sup>

Still, despite the history of P3 use in the United States, these arrangements are usually met with resistance today, particularly from the public sector. One hindrance to P3s in most any state is the complicated process of getting things done – the simple bureaucracy that so many public agencies and governments are mired in today. Contributing to the problem also is the federal government's general lack of focus on infrastructure issues, except for in the aftermath of a crisis that results in fatalities, billions of dollars in damage – or both. Two recent examples: The levee failures in New Orleans in 2005 following Hurricane Katrina and the multiple levee breaches that occurred this spring and early summer due to the devastating floods in the Midwest. Other tragic infrastructure incidents in just the past two years: The 2007 collapse of the I-35W Bridge in Minneapolis and the underground steam pipe explosion in Manhattan that same year.

Still, the federal funding necessary to improve or replace deteriorating infrastructure at risk of failure is simply not there. The U.S. government's spending on the nation's infrastructure "has declined from about 3 percent of GDP in 1960 to approximately 2.4 percent today"<sup>67</sup> and during some recent decades, that figure has dipped even lower. Meanwhile, the federal government continues to "dramatically [reduce] its share of spending, pushing more of the burden on cash-strapped states and local governments, and taking less of a role in orienting long-term policy."<sup>68</sup>

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66 "A Role for Public-Private Partnerships," Ray Chambers and Mortimer Downey, The Coalition for American's Gateways and Trade Corridors, Traffic World, November 5, 2007.

67 *Infrastructure 2008: A Competitive Advantage*.

68 *Ibid.*

In short, this means cities and states are left to figure out how to improve infrastructure on their own, which is why more have turned to or are seriously considering use of the P3 model.

In a vast country like the United States, with its myriad infrastructure problems, transportation planners at the federal, state and local levels should have access to the largest possible toolbox of financing mechanisms, strategies and options.<sup>69</sup> P3s are only one option, of course, but one that makes fiscal sense for a state as large as California, which is facing a \$500 billion infrastructure crisis; support from the private sector can certainly help to bridge that significant financial gap. Governor Arnold Schwarzenegger has been working for some time now to make performance-based infrastructure a “key component” of California’s overall economic development strategy, and has been strongly encouraging legislation to expand the types of projects, services and government entities that can enter into PBI arrangements.<sup>70</sup>

However, despite these efforts – and strong support from many citizens and groups, including ACEC California – P3 use for infrastructure projects in California suffered a setback last spring when state lawmakers voted against Governor Arnold Schwarzenegger’s performance-based infrastructure bill, AB 2600. The bill was designed to give the state government “broad authority”<sup>71</sup> to enter into P3 relationships, and would have allowed private partners to assume “responsibility for delivering, improving, operating and maintaining governmental facilities, including but not limited to roads.”<sup>72</sup> Opponents assert, among other things, that P3s will increase costs for taxpayers, yet overlook the fact that leveraging private sector capital can actually save money in the long term by helping to stretch transportation dollars.<sup>73</sup> One of the formal opponents to the bill: the Professional Engineers in California Government (PECG), a union that represents more than 13,000 state employees.

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69 “A Role for Public-Private Partnerships.”

70 *Stepping Up the Game*.

71 “California Legislative Committee Shoots Down P3 Bill Along Party Lines,” By Rich Saskal, The Bond Buyer, May 1, 2008.

72 Ibid.

73 “Public Private Partnerships Could Help Stretch Transportation Dollars,” California Alliance for Jobs, [http://www.rebuildca.org/caj\\_media/CalAI\\_Progress\\_60\[2\].mp3](http://www.rebuildca.org/caj_media/CalAI_Progress_60[2].mp3)

However, it must emphasize that the goal of the P3 model for infrastructure projects is not to undermine or replace the public sector and its employees, or to somehow imply what the private sector can bring to the table – including additional tools, knowledge and manpower – is somehow superior to what the public sector and its engineers can deliver. Instead, P3s are about collaboration, bringing together the best resources and practices available to achieve a common vision. The P3 model is simply a structured way of introducing private management into public service to improve the value citizens get from their infrastructure, and of course, makes both the private and public sector accountable for their performance in delivering those projects.<sup>74</sup> Better infrastructure – delivered quickly, efficiently and cost-effectively – benefits everyone in California, and polls show that many Californians like and support the idea of P3s.

The state's future – its trade relationships and economy, the safety and well-being of its citizens, and its ability to attract and support new investment and business – hinges on making significant improvement as soon as possible to many aspects of its infrastructure. Airports, public transit, railways, ports, levees, water and wastewater facilities, energy and communication, even schools, hospitals and recreational facilities, throughout the state need to be renewed, created or simply, better maintained. The reality is, however, that without at least some involvement and support from the private sector – and cooperation and commitment to P3 project success from the public sector – it is unlikely California will be able to repair or develop much of the vital infrastructure it so desperately needs to remain prosperous and a force not only in the U.S. economy, but in that of the world.

## **About ACEC-CA**

The American Council of Engineering Companies of California (ACEC-CA), formerly known as Consulting Engineers and Land Surveyors of California (CELSOC), is a 50-year-old nonprofit association of private consulting engineering and land surveying firms. Its mission:

“Professional engineers and surveyors dedicated to building a better California.” A statewide organization, Sacramento-based ACEC-CA is dedicated to enhancing the consulting engineering and land surveying professions, protecting the general public and promoting use of the private

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<sup>74</sup> “Gov. Schwarzenegger Announces Plan to Improve Public Infrastructure, Save Taxpayer Dollars,” Office of the Governor, media release, December 26, 2007: <http://gov.ca.gov/index.php?/press-release/8390/>

sector in the growth and development of California. ACEC-CA's more than 1,100 members are involved in all aspects of the design, construction and repair of California's infrastructure facilities.

ACEC-CA members are available to the media for interviews and insights into California's infrastructure challenges. They also can offer firsthand perspective on how private sector capital, knowledge and expertise can enhance the public sector's efforts to meet the challenge of improving California's aging and inadequate infrastructure – from levees and waterways to roads and bridges to schools and healthcare facilities – quickly, efficiently and cost-effectively.

For more information about ACEC-CA, including our California infrastructure tours, please visit our website at [www.acec-ca.org](http://www.acec-ca.org). To contact our members, please call (916) 441-7991.