



Building for the Future: Easing California's Transportation Crisis with Tolls and Public-Private Partnerships

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California is projected to grow to 50 million people between 2000 and 2030, a net increase of 16 million. In the three largest urban areas, vehicle miles traveled by individuals will increase by 30 to 50 percent, with truck traffic growing even faster, especially in greater Los Angeles. California's urban freeway systems are already nearing capacity, with massive congestion during ever-lengthening peak periods, yet current plans call for only minor increases in capacity.

Since the freeways will continue to carry more than 90 percent of commuters and the vast majority of all freight, it is crucial that California's highway capacity keep pace with growth, so that people and goods can keep moving. But even before the current transportation funding crisis,

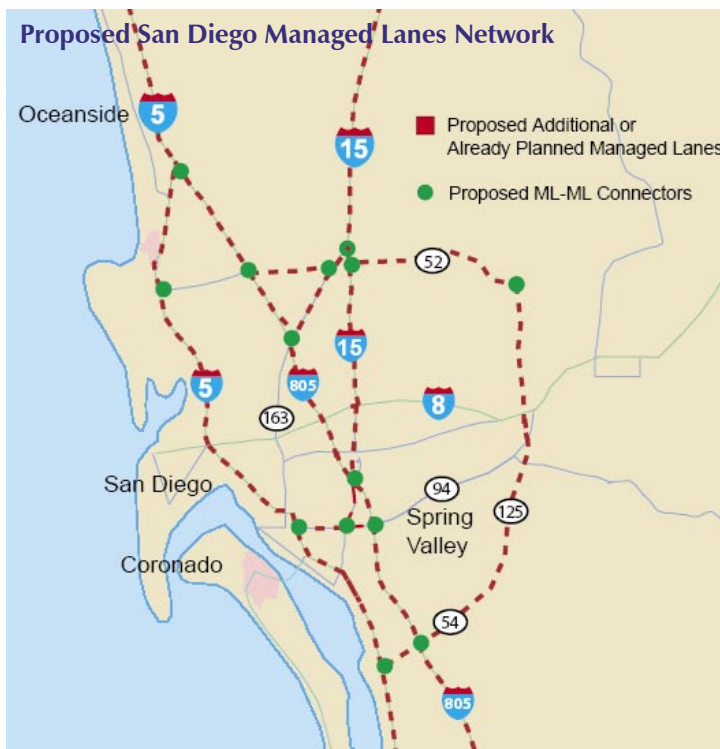
available highway financial resources were hard-pressed even to maintain the existing infrastructure, let alone add to its capacity. Hence, this study proposes the creation of new financing and project-delivery methods for California highways, aimed at providing the resources to make major improvements in this vitally important infrastructure.

WHY BUSINESS AS USUAL WILL NOT SUFFICE

The metropolitan planning organizations (MPOs) in the three largest urban regions – Los Angeles, San Francisco, and San Diego – plan to spend nearly \$400 billion between now and 2030 on transportation, yet most of this money will be used

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to operate, maintain, and rehabilitate the existing freeways and transit systems. Only a small fraction will be spent to expand the capacity of the highway system. Consequently, congestion will still be a major problem in 2030, even if these three long-range plans can be fully implemented.

And this is the best-case projection by the MPOs, assuming that transportation finance in California quickly returns to business-as-usual, from its current dire crisis state. Any number of factors could make the outcome significantly worse. For example, the plans assume voter approval of renewing all existing transportation sales taxes, plus increases in federal and state gasoline taxes. Those assumptions may or may not turn out to be on target. And the state's recent transportation funding crisis, in which nearly \$5 billion has been diverted from transportation funds, means that it will take many years before California returns to even the previous trend-line of highway investment.

This report suggests that business-as-usual is not sufficient, not if California is to compete with fast-growing states such as Colorado, Florida, Texas, Virginia, and others. It suggests that we look at how major cities in Europe and Australia, as well as other states, have coped with the need to fund major highway improvements.

LEARNING FROM ABROAD: LESSONS FROM WORLD-CLASS CITIES

Urban regions in Europe and Australia have coped with similar pressures of growth versus limited public finances. Although investing heavily in mass transit, they have decided that motor vehicles play such a crucial role in both personal and freight transportation that their urban highway systems also warrant major new investments. But because of the huge cost of such projects today, the only way they can afford to build them is to develop them with tolls. It turns out that the global capital markets are willing to invest billions of dollars into highway transportation projects, if those projects are wanted badly enough that people are willing to pay tolls to use them. A steadily growing stream of toll revenues makes it possible to sell billion-dollar bond issues to amass the capital to build such projects.

Examples from the past decade include:

- Toronto's \$2.6 billion Highway 407 Electronic Toll Road, a 67-mile new toll road with 43 interchanges and no toll booths, serving over 300,000 vehicles each weekday;
- Britain's M6Toll, a \$1 billion bypass of the congested M6 motorway through Birmingham;
- Paris's innovative \$2 billion twin toll tunnels, completing the missing link in the A-86 ring road by tunneling deep below, rather than going through, historic Versailles;
- Melbourne, Australia's \$1.5 billion CityLink, connecting three freeways with the central business district largely underground to avoid disruptive land-use impacts; like Toronto's 407ETR, it functions entirely without toll booths;
- Sydney, Australia's growing set of toll roads and toll tunnels, giving this huge metro area a network of tolled routes with many key links underground.

Each of these projects was funded solely from tolls, and each was developed and is operated under long-term public-private partnership agreements, which shift significant risks (e.g., of cost overruns and of insufficient traffic) to the private sector.



EXAMPLES OF LARGE-SCALE URBAN TOLL PROJECTS FOR CALIFORNIA

We illustrate the potential of toll-funded mega-projects to address real transportation needs in urban California by means of four case studies. Each is a large-scale project (well over \$1 billion) that addresses a specific need, and each could be funded largely or entirely by toll revenues.

The first project is a \$2.3 billion tunnel linking Palmdale with Glendale, beneath the Angeles National Forest. With value-priced tolls to keep traffic free-flowing at rush hours, it would cut 45 minutes to an hour off the time between north county and downtown Los Angeles, thereby relieving congestion on SR 14 and I-5. The tunnel would make it far more practical to develop serious airline service at the Palmdale International Airport site, an important regional goal since expansion of LAX and the development of an airport at El Toro in Orange County have both been ruled out. Like the A-86 Paris tunnel, this project would consist of two tunnels, one for (ultimately) six lanes of cars and other light vehicles and the other for two lanes of trucks and other heavy vehicles. The cars-only tunnel would be built first, and after it was producing positive net revenues, the truck tunnel would be added.

The second case study is an alternate approach to San Diego's current plan to add \$2 billion worth of Managed Lanes to several major freeways. Our plan would build a more ambitious \$8 billion, interconnected network of

“managed lanes.” Unlike SANDAG’s current plan, which would use transportation tax monies, two-thirds of the cost of the proposed network would be met via toll revenue bonds. Thus, San Diegans would gain a much larger system of uncongested premium lanes. This would give every commuter a form of “congestion insurance” on most of the freeway system, while providing the equivalent of an exclusive, uncongested busway for express bus service.

The third and fourth case studies are of toll truckway systems for greater Los Angeles and the East Bay region of greater San Francisco, respectively. In both cases, the projects would consist largely of barrier-separated new lanes for trucks only, built above or alongside existing freeway right of way. The truckways would make it worth truckers’ while to pay tolls, because they would improve productivity in two ways: first by offering significant time savings, thereby enabling more paid trips per day, and second by permitting the use of double- and triple-trailer rigs that can deliver 50 to 100 percent more payload. Truckway use would be voluntary for existing big-rigs but mandatory for the larger double and triple-trailer rigs, which could operate only on the barrier-separated truckways.

Our Los Angeles proposal builds on recent analysis by SCAG, but proposes a longer truckway system, extending all the way from the twin ports of Los Angeles and Long Beach through San Bernardino and up I-15 to the California-Nevada line. Our calculations show that this \$10 billion truckway system would be self-supporting from toll revenues. In the Bay Area, our proposed truckway would link both the Port of Oakland and Silicon Valley with I-5, via



I-580. At a cost of \$9 billion, it could also be self-supporting from toll revenues.

For all four studies, we modeled the projects as being funded by 40-year, tax-exempt toll revenue bonds. Rigorous feasibility studies would be needed to confirm our initial feasibility assessments, but as we have seen overseas, the capital markets are willing to finance multi-billion dollar toll projects when the demand for them is clearly there. Given the huge unmet demand for improved highway transportation in urban California, we see such large-scale toll projects as enormous opportunities. But they will not happen unless policy makers create a receptive climate for such investments to take place.

DEALING WITH THE RISKS OF MEGA-PROJECTS

When we advocate multi-billion dollar highway projects such as ambitious tunnels, we anticipate the following objection: “What about the Big Dig syndrome?” The Big Dig was Boston’s infamous project to replace the elevated I-93 through downtown with a tunnel and a new bridge, thereby reclaiming the land for other uses. What began as a \$2.2 billion project ended up, 20 years later, as a \$14.6 billion project. It is vitally important that California not repeat the mistakes made on that project. Such risks should not be placed on hapless taxpayers, and we contend that long-term public-private partnerships are a good way to achieve this goal.

It’s important to realize that transportation mega-projects have a well-documented tendency toward cost over-runs and traffic shortfalls, as documented in the 2003

book, *Megaprojects and Risk*. The authors found this to be a global problem in both highway and rail projects. They concluded that in conventional public sector project delivery, all the incentives of key players favor under-estimating costs and over-estimating projected traffic. Why? Because contractors benefit from decisions to go forward, and can generally get compensated (via numerous change orders during construction) for factors leading to higher costs. And when the project is finished, they can walk away, leaving the government to worry about revenue shortfalls and high maintenance costs.

But the incentives change dramatically when the project is structured as a long-term partnership in which the developer puts its own funds at risk and has a long-term ownership interest in the project. This is typically the case with the kind of long-term concession projects in Australia and Europe that were described previously. This method shifts the risks of construction cost overruns from the taxpayers to the developer/operator; it likewise shifts the risks of inadequate traffic and revenues. Because it takes on these risks, the developer/operator pays far greater attention to controlling costs and to rigorous traffic and revenue studies prior to financing the project. And because the developer/operator will also be operating and maintaining the toll project, it hurts itself if it uses shoddy construction techniques to hold down capital costs, only to end up with a project that is far more expensive to maintain.

BEST PRACTICES FROM ELSEWHERE

If California is to make use of toll financing for large-scale projects, how should such projects be carried out? Although Japan and some other countries use government toll authorities akin to those in the eastern United States, the more recent trend in Europe, Australia, and Latin America is to make use of long-term public-private partnership agreements for large toll projects. Typically, the government goes out to bid for a company or consortium to finance, build, operate, and maintain the tolled project for a long enough period to recover its investment (typically 35 to 50 years). The public sector partner often defines the project and does preliminary design, permitting, environmental clearance, and land acquisition. The private sector partner, selected by a competitive process, then finances the project,

develops it using the design-build method, and operates it during the agreed-upon franchise term (typically called a “concession” overseas).

The rationale for using such partnerships is twofold. First, having the project developed and operated on a commercial basis tends to de-politicize it, safeguarding it from becoming either a source of jobs or contracts for favored parties or from having its toll revenues captured and diverted to other purposes. Second, in exchange for gaining the opportunity to make money from the project, the private partner is generally willing to assume significant risks that would otherwise be borne by the taxpayers (such as the risk of cost overruns and/or of insufficient traffic).

During the past 15 years, nearly two dozen U.S. states have passed enabling legislation for public-private partnerships in transportation infrastructure. Two of the most notable are fast-growing Texas and Virginia. In both states, toll projects may be initiated at both the state and local level. Responsible agencies may initiate projects by issuing requests for proposals (RFPs), but they may also accept unsolicited proposals from the private sector. And both states permit projects to be funded partly via toll revenues and partly via more traditional sources of highway funds. Billions of dollars are being invested in Texas and Virginia highways thanks to these public policies.

POTENTIAL LEGAL AND POLICY CHANGES

California’s one previous attempt to engage the private sector to develop toll roads was flawed. The 1989 AB 680 private toll road law required 100 percent private financing, rather than permitting a mix of public and private support that gives both parties a stake in successful outcomes. It applied only to Caltrans, despite the subsequent devolution of significant transportation authority to regional/local levels of government. And it permitted extremely restrictive non-compete clauses in franchise agreements. Second-generation public-private partnership laws, like those in Texas and Virginia, are far more flexible.

For California today, we recommend that a state-of-the-art tolling and public-private partnership law be enacted. It would authorize both Caltrans and local/regional levels of government (cities, counties, joint powers authorities, etc.) to initiate toll-funded transportation infrastructure projects,



and permit them to partner with the private sector to carry out such projects, using both RFPs and procedures for dealing with unsolicited proposals. This would enable California to enter the global capital markets, as well as tapping world-class expertise for modernizing its vitally important highway system.

Pursuing this course has been recommended in recent reports by USC’s Keston Infrastructure Institute and the governor’s California Performance Review. Possible legislative vehicles include:

- Modernizing the now-repealed AB 680 law, turning it into a second-generation public-private partnership law that applies to both Caltrans and to lower levels of government.
- Amending AB 2660, a 1996 infrastructure public-private partnership law that empowers local but not state governments, and applies to all kinds of infrastructure except highways that are part of the state highway system.
- Permitting the creation of new regional transportation authorities that can initiate tolled projects, either themselves or in partnership with the private sector, as proposed by the Southern California Association of Governments.

Whichever form it takes, California urgently needs state-of-the-art enabling legislation to take advantage of both private sector expertise and the global capital markets, to expand and modernize its vital highway system. The funding and the expertise are out there, and are being used in other countries and other states. The key question is whether California will take advantage of them. ■

ABOUT THE AUTHORS



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Peter Samuel received his B.Comm. (Honors) majoring in economics from the University of Melbourne, Australia, where he also studied city planning. He taught economics at Monash University, then moved into journalism with the *Canberra Times* and later the newsweekly, *The Bulletin*. Based in the United States since 1980, he founded and edited *Toll Roads Newsletter*, now replaced by the comprehensive Web site, www.tollroadsnews.com. He has been a contributing editor to *World Highways* and *Intelligent Transportation Systems International*.

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RELATED STUDIES

Robert W. Poole, Jr., and Peter Samuel, *Corridors for Toll Truckways: Suggested Locations for Pilot Projects*, Policy Study No. 316, February 2004.

Robert W. Poole, Jr. and C. Kenneth Orski, *HOT Networks: A New Plan for Congestion Relief and Better Transit*, Policy Study No. 305, February 2003.

Peter Samuel, Robert W. Poole, Jr., and Jose Holguin-Veras, *Toll Truckways: A New Path Toward Safer and More Efficient Freight Transportation*, Policy Study No. 294, June 2002.

Robert W. Poole, Jr., *Commercializing Highways*, Policy Brief #19, August 2001.

Peter Samuel, *Putting Customers in the Driver's Seat: The Case for Tolls*, Policy Study No. 274, November 2000.

Peter Samuel, *How to "Build Our Way Out of Congestion": Innovative Approaches to Expanding Urban Highway Capacity*, Policy Study No. 250, January 1999.



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