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SURFACE TRANSPORTATION INNOVATIONS

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PPPs Overcome Mega-project Problems, Australia Study Finds

From the Channel Tunnel to Boston's Big Dig, large cost over-runs and schedule slips have characterized major transportation infrastructure projects (aka mega-projects). The best research on the extent of this problem is still the 2003 book *Megaprojects and Risk*, by Danish researcher Bent Flyvbjerg and colleagues. Using a large international database of 258 projects, they found that 90% suffered cost over-runs. They documented systematic "optimism bias" in the forecasts of costs, traffic, and completion date for most projects. As a remedy, they suggested that far more risk should be allocated to parties that have an incentive to reduce such outcomes, and that decisions to proceed with mega-projects should be based on "the willingness of private financiers to participate in the project without a [government] guarantee."

Flyvbjerg's database did not distinguish between projects developed under long-term concessions and those developed under traditional procurement models. But now an extremely well-done study has addressed that question, using a database of 54 infrastructure projects in Australia, of which 21 were concession-type projects (which the report defined as PPPs) and 33 were Traditional. It was conducted by The Allen Consulting Group and the University of Melbourne for the nonprofit group Infrastructure

Partnerships Australia.

(http://infrastructureaustralia.org/research/pdf/InfrastructurePartnershipsAustralia_PPPReport_Final.pdf)

The findings of “Performance of PPPs and Traditional Procurement in Australia” are dramatic. “Our overall conclusion is that PPPs provide superior performance in both the cost and time dimensions, and that the PPP advantage increases (in absolute terms) with the size and complexity of projects.” More specifically, on \$4.9 billion of PPP projects, the net cost over-run was just \$58 million, which (at 1.2%) is not statistically different from zero. By contrast, on \$4.5 billion of Traditional procurements, the net over-run was a whopping \$673 million (15%). Likewise, regarding on-time completion, PPP projects were on average completed 3.4% ahead of schedule, versus Traditional projects averaging 23.5% late. And while smaller Traditional projects tended to be completed on schedule, on-time performance decreased sharply as project size increased—but size made no difference in the on-time performance of PPP projects.

Two other findings are worthy of note. First, “In contrast to commonly held perceptions about the relative transparency of PPPs, we found that PPP projects were far more transparent than Traditional projects, as measured by the availability of public data.” Which illustrates one of my pet peeves about critiques of tolling and PPPs—Compared to what? Critics often compare these new approaches to some kind of ideal world, instead of the funding mechanisms and institutions that actually exist.

The report also debunks “the myth of government ‘risk-free’ borrowing.” It points out that “taxpayers ultimately and always bear the costs of cost over-runs and other project risks that cannot be assumed away” by the fact that government can borrow at a low interest rate. That is true if the alternative to PPP toll revenue-based financing is government general obligation bonds, as in Australia. In the United States, the alternative for most large highway projects is a government toll agency issuing tax-exempt toll revenue bonds. The interest rate on those bonds does bear a relationship to the project’s or toll agency’s financial soundness. But there is still the question of who ultimately bears the risk of optimism bias. For toll agency projects, that risk-bearer is not the taxpayer but the toll-paying customers. The annual caps on toll rates that are built into long-term concession agreements (protecting their customers) do not apply to roads built by state toll agencies. In fact, their bond covenants nearly always *require* them to increase toll rates as necessary to pay the agreed-upon debt service. So a version of the Australian point about risk transfer applies here, albeit in a different form.

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PIRG on Toll Road PPPs

Last month when the *Atlanta Journal-Constitution* asked me to write an op-ed on the case for using PPPs for new highway capacity, they paired it with an opposing piece by Phineas Baxandall, who was identified as a senior analyst at Georgia Public Interest Research Group. Actually, Baxandall directs tax and budget policy for U.S. PIRG, a federation of left-wing state organizations. During the past year, he’s been on op-ed pages, websites, and blogs opposing “road privatization,” and in January did me the courtesy of sending a copy of his policy report, “Road Privatization: Explaining the Trend, Assessing the Facts, and Protecting the Public.” (www.uspirg.org/issues/transportation/stop-bad-road-privatization)

I’ve read it twice, now, hoping to find something good to say, but there is not much new, or valid, here. Like many PPP critics, Baxandall and PIRG consider the lease of existing toll roads as inherently against the public interest. They argue that doing so “relinquishes important public control” (ignoring the hundreds of pages of enforceable provisions in the long-term concession agreements) and garners

short-term cash without fixing long-term budgetary problems (though I have yet to see such a deal that did not use most of the proceeds for long-term capital transactions, such as paying off debt or funding long-lived infrastructure improvements). They also want to have it both ways, simultaneously arguing (1) that the roads are leased at far less than they are worth, and (2) that allowable toll rates are far too high. But fixing (1) would exacerbate (2), which they don't seem to grasp. And they continue to repeat the mantra that because government can issue bonds at tax-exempt rates, government is always the more-efficient provider of toll roads. This ignores not only the existence of tax-exempt financing for PPPs under the federal Private Activity Bond and TIFIA programs (enacted by Congress on a bipartisan basis) but also the evidence from Australia (see previous story) and the UK about the superior performance of PPP infrastructure.

Baxandall, like other critics, grudgingly acknowledges that given the enormous shortfalls in transportation funding, PPPs may have a role to play in funding needed new capacity. But he goes on to present a set of policy measures that would significantly reduce the viability of such projects. For example, his report arbitrarily asserts that no deal should last longer than 30 years, when larger and higher-risk projects may need 40 or 50 years in order to be financed solely based on toll revenues. Most damaging of all is the proposition that the legislature must approve the terms of a final deal, after the extensive time and cost that went into a competitive selection process. Here's a hint, PIRG: those states whose PPP enabling legislation have included such a provision (California, Florida [since repealed], West Virginia) got absolutely no private sector proposals. The political risk simply too great. What company would invest millions of dollars in conceptual designs, traffic and revenue studies, and competitive bidding if the politicians could simply say, at the very end of the complex negotiations—sorry, we don't like your deal?

In contrast with such non-reality-based perspectives, there is a growing body of sound policy advice on how to decide whether to make use of a PPP process (a value-for-money analysis, now routine in Australia and the UK), how to conduct a fair and transparent competitive process, and what kinds of provisions should be included in a long-term concession agreement to protect the public interest. I've been reporting on these all year, and a good example is in the previous article. I will continue to keep you posted as I find others.

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Smart Growth Won't Cut (Much) Greenhouse Gases

The premise goes something like this. Transportation is a major source of greenhouse gas (GHG) emissions, and personal vehicles are a significant fraction of transportation. The more people drive, the more GHGs their vehicles emit. If their job, school, shopping, etc. are close to where they live, they won't drive as much (since they could walk or use transit). Therefore, government should force all new development to be high-density and transit-friendly, as a powerful tool for GHG reduction.

By the time you get to the end of this "logic" chain, you are actually looking at miniscule reductions in GHGs, as many different analyses have pointed out. First, while transportation represents about 28% of US GHG emissions today (according to the EPA), passenger cars are only 34% of that, or 9.5% of the total. Second, over the next several decades, GHG emissions per mile driven will likely drop significantly, thanks to federal and state (at least in California) measures to require increased fuel economy and encourage alternative propulsion sources (such as plug-in hybrids). Third, densifying development applies almost entirely to new development, leaving the vast majority of the already built environment unchanged. Fourth, just because transit is nearby doesn't mean it takes you where you need to go. Since most commuting is suburb-to-suburb while transit works best on radial routes to a central business district, it's unlikely to capture much additional commute mode share. And since most people

don't want to walk to a corner store and pay sky-high prices, they will still drive their cars to Target or Wal-Mart to load up on good values.

Yet this silly premise is about to be enacted as law in California—and could serve as a model to be taken nationwide in next year's reauthorization of the federal surface transportation program. The background to this is California's Global Warming Solutions Act of 2006, which sets the goal of cutting back GHG emissions to 1990 levels by 2020. While the state's Air Resources Board (ARB) continues work on its Scoping Plan for how to do this (the first draft was unveiled in June), eager-beaver legislators couldn't wait to enact their pet theories, such as the smart growth model outlined above. So both houses have now passed and sent to Gov. Schwarzenegger SB 375, whose aim is to cut GHGs by curbing sprawl.

The bill has gone through many revisions, and is nowhere near as draconian as the original version I wrote about in Issue No. 47 (September 2007). But it would require the long-range transportation plans drawn up by the state's 17 MPOs to set GHG reduction targets, to be met via transit and smart growth land-use planning. While individual cities and counties could still approve low-density developments, those that comply with the smart-growth approach would be first in line for transportation funding.

Interestingly, the ARB considered and *rejected* land-use-based GHG reduction targets, and its Scoping Plan assumes what some environmentalists decry as a "scant 2 million metric tons" of reduced GHG emissions due to land-use decisions. And nowhere in any of the rhetoric in favor of SB 375 is its likely impact on housing prices. By reducing or eliminating the building of new subdivisions where land is relatively cheap, the bill will put further upward pressure on already sky-high housing prices, the least affordable in the nation. That fact alone, plus the measure's very small impact on GHG reduction, would easily justify the bill's termination by the Governor.

For some additional perspective on this issue, my Reason colleague Skaidra Smith-Heisters has a thoughtful commentary at www.reason.org/commentaries_20080812.shtml.

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Bridge Conditions, One Year Later

A year ago this week, I was in Minneapolis addressing a large audience on why our politicized highway funding system short-changes needed preventive maintenance, under-invests in long-lived pavement, and in other ways funds low-priority projects at the expense of high-priority projects. This was a speech invited in the wake of the collapse of the bridge on I-35W in the Twin Cities. Part of what I argued was that simply adding more money (e.g., a proposed emergency 5 cent/gallon state gas tax increase, that was enacted over Gov. Tim Pawlenty's veto) without fixing these institutional problems would lead to poor use of the new money.

In the immediate aftermath of the I-35W collapse, FHWA officials requested emergency inspection of every steel truss bridges nationwide. But according to a report by MSNBC's Bill Dedman (Aug. 1, 2008), no one knew how many there were. The National Bridge Inventory listed 756, but state engineers soon submitted 32 more. But as the inspections proceeded, an amazing 280 of these bridges turned out to not be steel truss designs after all; 13 of them were made of wood, 16 no longer existed, 11 were private bridges not subject to federal inspection, one was a pedestrian bridge, and another had been counted in two states. The final post-inspection count was just 479 steel truss bridges. Of those, it appears that only five of the inspections turned up previously unknown problems.

But the MSNBC investigation, based on a Freedom of Information Act request, is troubling. Dedman

asks the question: "What about any bridges that might have been miscoded in the other direction and were still lurking in the database as another type of bridge?" Those did not get emergency inspections. "The data [are] not as good as we thought," admitted FHWA team leader Thomas D. Everett at a safety briefing in January. Many pieces of information were not being verified for accuracy, but more care will be taken to do that henceforth.

For all the limitations in federal data, the latest FHWA figures (reported in *Engineering News-Record's* July 28 issue) reveal that we still have 72,000 structurally deficient bridges in this country. That's down from nearly 87,000 in 2000, so that is progress, to some extent. There are also still more than 81,000 functionally obsolete bridges. Congress did appropriate an additional \$1 billion for bridge repair, with strings attached to ensure states use it to supplement, not supplant, already planned spending.

There is one additional piece of good news in all of this. The replacement I-35W bridge, being built under a Design-Build contract by Flatiron-Manson, is within 1% of its \$234 million contract price and on target to be open by Christmas.

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Door to Tolling Is Opening in California

Historically, tolling has had tough sledding in the Golden State. The general rule is that tolls shall not be charged on any state highway without the express permission of the legislature. That permission has been granted only in a handful of special cases (two toll projects developed privately under the since-expired AB 680 enacted in 1989, the three public-sector toll roads in Orange County, and the HOT lanes on I-15 in San Diego and under development on I-680 in Silicon Valley). Even changing the toll rates on the state-owned toll bridges in the Bay Area requires legislative action.

But the huge funding shortfall in transportation seems to have led to rethinking on the part of a critical mass of legislators. In August, legislators passed and sent to Gov. Schwarzenegger no less than five bills authorizing increased tolling. Three of these were for specific HOT lanes projects. SB 1422 gives Los Angeles County permission to proceed with the conversion of HOV lanes to HOT lanes on several freeways, as per the terms of a congestion pricing grant award from FHWA. AB 1954 allows Riverside County to add HOT lanes to I-15 and SB 1316 allows that county to add HOT lanes to SR 91, extending the 91 Express Lanes from the Orange/Riverside County line eastward to I-15. And SB 1486 allows the creation of the Otay Mesa East Toll Authority, to finance and build SR 11 and a new port of entry in San Diego County.

This is a cumbersome and somewhat ridiculous way to make transportation policy. So I'm even more encouraged by the revival of AB 3021, which is general enabling legislation for tolling. It would create a California Transportation Financing Authority which would assist transportation agencies in issuing toll revenue bonds to finance toll roads and toll lanes. There would no longer be a need to go to the legislature for permission to do each and every toll project. As I reported last issue, the bill passed the Assembly in July, but then got shot down in the Senate. But Sen. Alan Lowenthal (D, Long Beach) asked for reconsideration, so as to address members' concerns. That led to clarifying amendments to ensure that existing general purpose lanes won't be tolled, but that HOV lanes can be converted to HOT lanes. The Senate passed the amended version and sent it back to the Assembly for concurrence, after which it will join the others on the Governor's desk.

While these measures fall short of the still-needed enabling legislation for PPPs, AB 3021 is a breakthrough that offers real hope for increased transportation investment in a state that's desperately

short of it.

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Tolls Beat Taxes in UCLA/USC Study

By now you've probably seen one or more reports on the important new policy paper by Brian Taylor of UCLA and Lisa Schweitzer of USC titled "Just Pricing: The Distributional Effects of Congestion Pricing and Sales Taxes," in the journal *Transportation*. (www.springerlink.com/content/1168327363227298). It looks at the fairness of HOT lanes to lower-income commuters, and was published just as the Los Angeles area is embarking on its first-ever conversion of HOV lanes to HOT lanes.

Using the existing 91 Express Lanes in Orange County (which were new construction, not conversion of HOV lanes), Taylor and Schweitzer ask the right question about equity: Compared to what? And in this case, the primary "what" is the one-cent transportation sales tax that Orange County, like all other urban counties in California, uses as a principal transportation funding source, making possible many projects beyond the limited sums available from state and federal gas taxes.

Suppose the new lanes on SR 91 had been funded via the transportation sales tax rather than via congestion-priced tolls. Had that method been used, they found, middle and upper-middle-income commuters in the corridor would have paid \$26 million less each year than they paid in tolls, while the poorest commuters would have paid \$3 million more than they actually paid in tolls. Moreover, the toll payments are voluntary, while sales tax payments must be made on every purchase, even by people who don't drive. Not addressed in the study is the additional point that without congestion pricing, the "express lanes" would not be free-flowing during even the worst rush hours, since the sales tax bears even less relationship to driving than the gas tax.

This is an important piece of work. For many years, opponents of tolling and HOT lanes have asserted—without any proof—that implementing these approaches would harm those of lower incomes. Data from actual HOT lanes has demonstrated their appeal and usefulness—for specific time-sensitive trips—to people of all income levels. But this study definitely strengthens the case for HOT lanes and congestion pricing as good policy.

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Upcoming Conferences

Just a reminder that I don't have space to list all possible conferences of interest; those listed here are only ones that I or a Reason colleague will be speaking at. As you can see, it's going to be a busy autumn.

[ARTBA's 20th Annual Public-Private Ventures in Transportation, Washington, DC, Sept. 15-16, 2008, Hilton Washington Hotel. Details at: \[www.artba.org/meetings_events/2008/ppv/index.htm\]\(http://www.artba.org/meetings_events/2008/ppv/index.htm\)](#)

[3rd Annual North American PPP & Infrastructure Finance Conference, Bridgewater, South Seaport, New York. Details at: \[www.euromoneyseminars.com/NAPPP08\]\(http://www.euromoneyseminars.com/NAPPP08\)](#).

[International Bridge, Tunnel & Turnpike Association Annual Meeting, Baltimore, MD, Sept. 20-24,](#)

2008, Marriott Waterfront Hotel. Details at www.ibtta.org/Events/eventdetail.cfm?ItemNumber=2886.

Port & Intermodal Finance & Investment Summit, Houston, TX, Oct. 20-22, 2008, The St. Regis Hotel. Details at www.infocastinc.com/ports08

Partnerships in Transit, National Council for Public-Private Partnerships and Federal Transit Administration, Dallas: Oct. 22-23, 2008, Radisson Hotel Central Dallas. Details available at www.ncppp.org/calendars

Toll Roads South, Orlando, FL, Oct. 27-28, 2008, Crown Plaza Orlando Universal. Details at www.worldrg.com/tollsouth.

IBTTA Transportation Finance Summit, Washington, DC, Dec. 7-9, 2008, Fairmont Hotel. Details at www.ibtta.org/Events/eventdetail.cfm?ItemNumber=2889.

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News Notes

New BRT Study Misses Key Point

“2008 Bus Rapid Transit Vehicle Demand & Systems Analysis” is an otherwise useful report prepared for the Federal Transit Administration by Calstart, Inc., a California nonprofit. Its purpose is to estimate the demand for BRT vehicles over the next decade. In doing so, it divides planned BRT systems into BRT-lite and BRT-heavy, with the former running as express service on arterials and the latter using dedicated rights of way. What’s left out, of course, is the far more cost-effective BRT on priced lanes model, under which the BRT vehicles get a “virtual” exclusive right of way, but without the large capital cost of building it just for bus use. Since a number of large metro areas are planning HOT/BRT networks, FTA and Calstart are still stuck in an outdated paradigm.

New System Traps Particulates from Roadways & Tunnels

The Intertraffic Innovation Award 2008 was given to Dutch entities TU Delft and BAM for their joint development of a new approach to reducing particulates (PM 10) in urban environments, especially roads and tunnels. The patented system uses fine metal threads above a roadway to create an “electrostatic roof” above a road or on a tunnel ceiling, along with grounded screens at the roadside. The system gives the particulates an electric charge, and they are attracted to the screens for subsequent disposal. BAM Infratechniek will market the system. (see www.bam.nl)

Reason’s 22nd Annual Privatization Report Released

Each year Reason Foundation produces a comprehensive overview of (primarily) U.S. developments in privatization and public-private partnerships, and the latest edition was released last month. I authored the rather long section on surface transportation, providing a more in-depth review of the kinds of topics covered in this newsletter (and it’s all new content). You can find that section at www.reason.org/apr2008/surface_transportation.pdf.

Two New Skeptical Rail Transit Pieces

My views on the poor cost-effectiveness of rail transit in most decentralized urban areas are no secret. I’d like to share with you two new, well-done brief assessments by others. One is by my friend Randal O’Toole, “Rails Won’t Save America.” It’s six dense pages taking on what Randal defines as eight transit myths, supported by extensive references. (go to www.americandreamcoalition.org/ADCFS2.pdf). The other is by Silicon Valley blogger Brad

Templeton and is called "Is green US mass transit a big myth?" Templeton until recently believed the conventional wisdom, but then began digging into the facts about energy use for different modes of transportation, and considerably revised his views. Go to: www.templetons.com/brad/transit-myth.html.

China Toll Road Listed on NASDAQ

Tollroadsnews.com reports that China Infrastructure Investment Corp, developer/operator of the 66-mile Pinglin Expressway, has become the first Chinese toll road company to be listed on a U.S. stock exchange. A number of others are listed on the Hong Kong exchange. As reported here and on tollroadsnews.com, both China and India are developing extensive toll road networks by means of long-term toll concessions. (www.tollroadsnews.com/node/3675.)

BRT Practitioner's Guide

Among the latest publications from the Transit Cooperative Research Program of TRB is *Bus Rapid Transit Practitioner's Guide*, a 242-page book published in 2007. It is TCRP Report 90. Details at www.trb.org.

Reason Anniversary Celebration

Reason magazine, the flagship publication of Reason Foundation, celebrates its 40th anniversary this year, with a gala event in Los Angeles, Nov. 14-15. "Reason Goes Hollywood" takes place at the historic and glamorous Hollywood Roosevelt Hotel and includes both a conference and a black tie banquet. Details are at www.reason.org/events. Hope to see you there!

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Quotable Quotes

"The central reality of future metropolitan areas will be the continued expansion of the suburbs – not merely in population but in jobs and other attributes such as retail sales, as well. In metropolitan areas over a million population, where about 54% of the nation's population reside, 92% of the population growth in this decade so far has been suburban. In many areas, the central cities have become 'too important' for jobs and will focus their roles on being centers of culture, recreation, and public functions."

--Alan Pisarski, author of *Commuting in America*, testimony before the Senate Committee on Environment & Public Works, June 25, 2008.

"Asking drivers to pay for road use ignites debates over fairness, but the debate often fails to address the larger question of how funding for transportation projects is actually being distributed throughout the community. Freeways are a premium transport service, and they should be priced accordingly. The study shows that if we are prudent, we can do that while being sensitive to the circumstances of low-income drivers."

--Lisa Schweitzer, USC School of Public Policy, Planning & Development, co-author with Brian Taylor of "Just Pricing" [discussed earlier in this issue].

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