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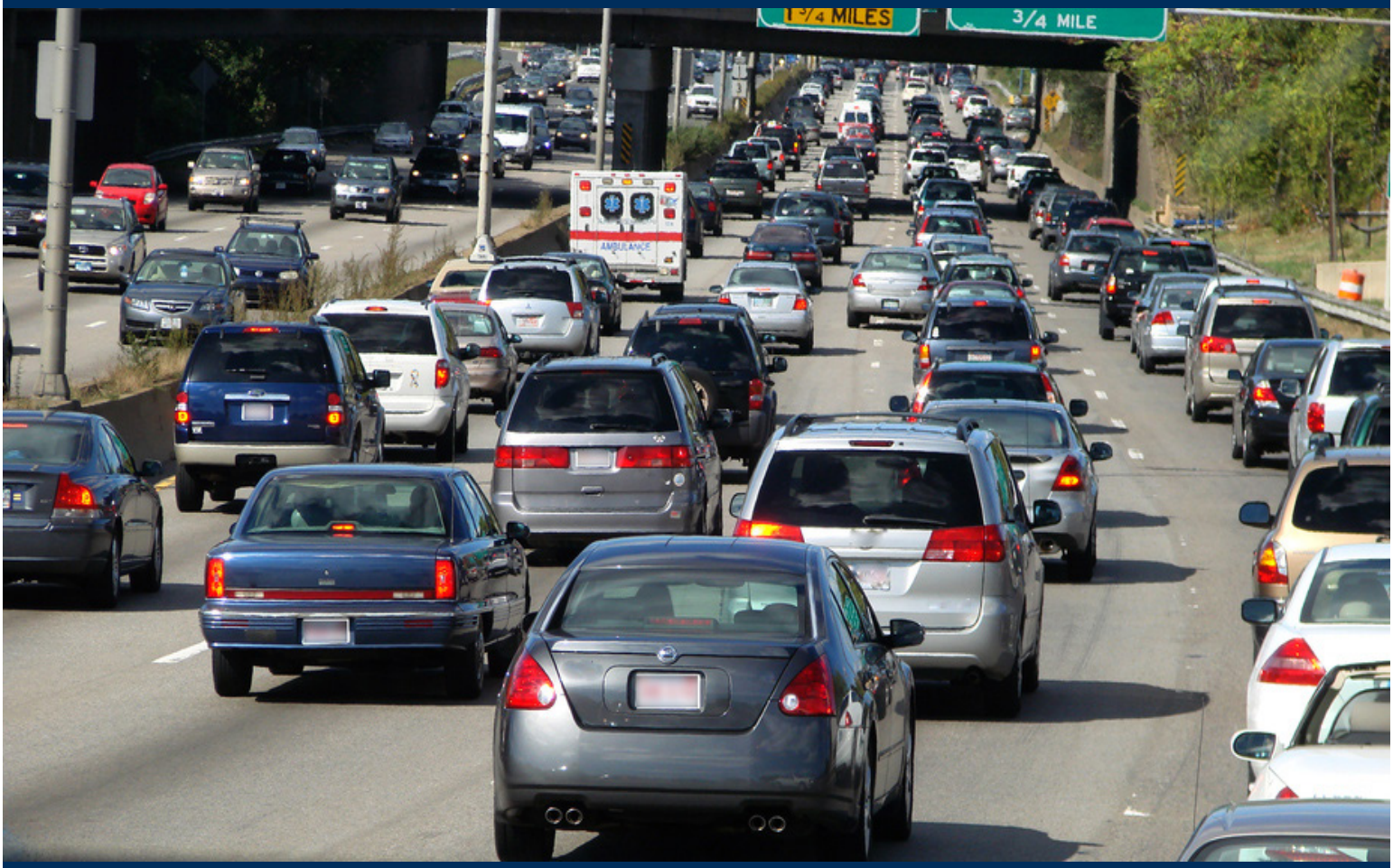


**The Honorable Chuck DeVore**
**Vice President of Policy**
March 2015

# The Road Forward:

*Improving Efficiency in Texas Transportation Spending*

Texas Public Policy Foundation

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# The Road Forward:

## *Improving Efficiency in Texas Transportation Spending*

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### Executive Summary

The passage of Proposition 1 in 2014 should provide at least $1.5 billion annually, more than enough to fill the cash flow shortfall left by the expiration of two transportation bonds and resultant debt service. Proposition 1, ending diversions, and reforming contracting and design processes, provides more than adequate funding for transportation through 2017—even after adjusting for construction inflation since 2006.

If this biennium's higher transportation spending, combined with procurement reform and a full accounting of up to $1.8 billion in reduced yearly capital requirements due to lower traffic growth estimates prove inadequate to meet Texas transportation needs, then additional funding could be appropriated. In examining how best to provide transportation dollars, the Legislature should consider the tradeoff between dedicating funds vs. prioritizing transportation funding biennially within a budget process that reviews all state spending as well as tax cuts.

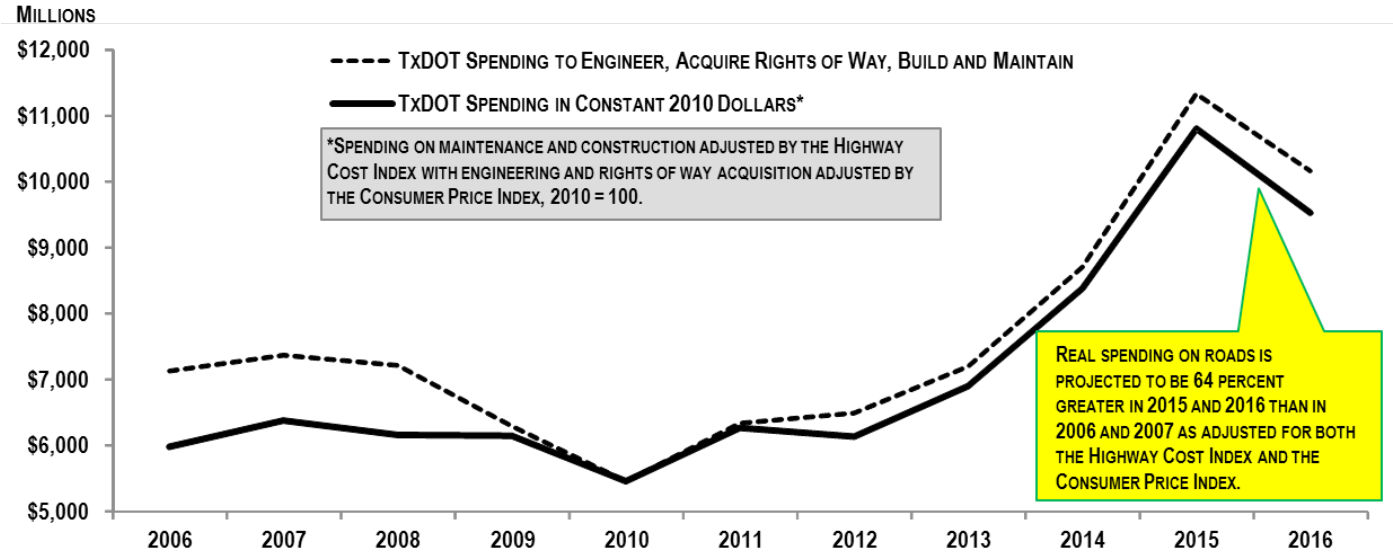
*Figure 1* (next page) depicts spending on designing, acquiring rights of way, building and maintaining roads and bridges from 2006 to projected 2016 spending showing that spending today is about 64 percent higher than it was a decade ago[1]—a time when few were raising the alarm about a shortfall in transportation spending.

Of the most populous 12 states, only Pennsylvania spent more per capita on transportation than did Texas in 2011-12.[2] Similarly, among the 12 largest states, only Pennsylvania, Illinois, and Ohio saw less weighted average daily traffic per lane mile on principal arterials in 2011 than did Texas.[3] With projected appropriations increases for transportation in 2015,

### Reforming transportation while setting appropriate funding levels are key Legislative challenges

- Proposition 1's passage in 2014 provides at least $1.5 billion annually, more than enough to fill the cash flow shortfall left by the expiration of two transportation bonds and resultant debt service
- Ending diversions and reforming transportation procurement, even after adjusting for construction inflation since 2006, provides more than adequate funding for transportation for the next two years
- If, after enacting transportation procurement reforms, the Legislature determines more money is needed for transportation, it should consider the tradeoff between dedicating funds vs. prioritizing the budget biennially
- The Transportation Code places too many restrictions on innovative, money-saving contracting processes and needs to be overhauled to save $1 billion or more per year
- New 2040 traffic projections show 28 percent less growth than predicted seven years ago, but TxDOT only dropped long-term additional construction needs by nine percent suggesting congestion needs might be overestimated by as much as $1.8 billion per year
- The Federal Transit Administration incentivizes the creation of inefficient urban rail transit projects through matching funds that Texas would be wise to forego

***Figure 1—Inflation-adjusted spending on new roads and maintenance is 64 percent higher in 2015 and 2016 than in 2006 and 2007, before the recession.***




Texas will likely spend more per capita on capital and maintenance for roads and bridges than any other large state.

Yet, the TxDOT's updated 2040 traffic projections show 28 percent less traffic growth than predicted seven years ago, but additional construction needs were only dropped 9 percent suggesting capital needs to address congestion might be overestimated by as much as $1.8 billion per year.

Lastly, the Transportation Code places too many restrictions on innovative, money-saving contracting processes and needs to be overhauled. For instance, a law limiting TxDOT to no more than three design-build procurements per year expires in 2015—allowing it to expire could save up to 29 percent on additional projects if a parallel restriction requiring Texas Department of Transportation to provide schematic designs at 30 percent completion or greater for design-build projects is also lifted.

## Reforming Texas Transportation

According to Texas' Legislative Budget Board (LBB), TxDOT estimates that $3.5 billion of additional annual funding is needed to build and maintain roads at 2010 congestion and quality levels.[4] This estimate includes revenue from Proposition 1, the voter-approved November 2014 ballot initiative that diverts funds from the Economic Stabilization Fund (ESF).[5] The ESF is the state's savings account that is filled with a portion of revenue from oil and gas severance taxes.

This paper will examine two aspects of this $3.5 billion figure in the context of Texas' overall expenditures on road design, right-of-way acquisition, construction, and maintenance: comparing Texas to other states and to historic transportation funding levels at a macro level; and then reviewing where the appropriate financial resources might be found as well as suggesting reforms that could improve Texas' transportation system efficiency.

## Current Transportation Environment

Transportation spending in Texas has always been supported by more than the motor fuel tax. In the 1990s, a portion of non-dedicated fund revenue was used for transportation. In the 2000s, Texas shifted from tax revenue to borrowing—using bond proceeds—to augment transportation spending.

Since 1991, Texas has levied a per gallon tax of $0.20 on gasoline and diesel. Of that, 25 percent is dedicated to education through the Permanent School Fund. In 2013, Texas collected $3.2 billion in motor fuels taxes.[6]

With vehicles becoming more fuel efficient, the small, but growing number of alternative fuel vehicles, and the fact that Americans are generally driving less than they

did in the past, the motor fuel tax has seen its purchasing power relative to the cost of construction diminish.

After the motor fuel tax was increased in 1991, the tax brought in just under $2 billion, equivalent to about $3.4 billion in 2013 dollars. The State Highway Fund received $2.4 billion from the motor fuel tax in 2013. But, most of the cost of building and maintaining roads isn't tied to the Consumer Price Index, but rather the Highway Cost Index, which increased 150 percent from 1991 to 2014.[7] Were motor fuel taxes intended to fully fund transportation needs and were those needs tied directly to fuel consumption—they aren't in either case—fuel tax revenue in 2013 would have to equal $5.8 billion to fund the same amount of construction as was funded by the fuel tax in 1991.[8]

Texas' population in 1991 was 17.4 million compared to 26.45 million in 2013, a 52 percent increase. On a per capita basis, the fuel tax brought in $114.94 per person in 1991 compared to $120.98 per person in 2013. Adjusting for inflation, the tax produced $196.55 per capita in 1991 using 2013 dollars, about 62 percent more on a real per capita basis in 1991 than in 2013.

Motor vehicle registration fees generated $1.3 billion for the State Highway Fund in 2013. But registration fees are not indexed towards inflation nor are a percentage of the value of the vehicle; rather, they are simply a flat fee of $50.75 for cars and light pickups, $54 for vehicles weighing 6,001 to 10,000 pounds, and $30 for motorcycles and mopeds. According to TxDOT's June 2014 testimony before the Texas Senate, had the fees been index for inflation, they would have generated $2.3 billion and had they been indexed for highway construction costs they would have raised $3.3 billion from the taxpayers.[9]

In the last decade general revenue support for transportation was essentially replaced by borrowing through Proposition 12 and Proposition 14 bonds. In FY 2016, the last of Prop. 12's borrowing authority will be used with a projected sale of $1.4 billion in debt. Prop. 14's last major sale of debt is expected in FY 2015 and will total about $700 million.[10] A third source of borrowing, from Texas Mobility Fund bonds, was authorized by voters in 2001. Unlike the first two bonds, these bonds are akin to a revolving account, with debt secured by ongoing State Highway Fund revenue. The Texas Mobility Fund is not only used to meet cash flow requirements for major projects, it is also used to reliably secure federal matching funds. As such, the ongoing availability of the fund serves to accelerate projects that would otherwise languish while awaiting the commitment of money.[11]

*Figure 2* shows Texas Department of Transportation spending on design, rights of way acquisition, construction and maintenance in millions of dollars from 2006 through forecast spending in 2016.[12] It includes a calculation of the appropriations' value in real dollars, with construction and maintenance adjusted by the Highway Cost Index and design and right of way acquisition adjusted by the Consumer Price Index with 2010 being the base year—though this calculation may understate the costs of acquiring land since real estate costs are

***Figure 2—The cost of constructing highways was 27 percent higher in 2006 than in 2010 due to a worldwide boom in the use of concrete and steel before the onset of the recession in 2008.***

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Engineering (millions) | $719 | $766 | $663 | $531 | $538 | $505 | $536 | $617 | $613 | $694 | $845 |
| Right of Way (millions) | $542 | $591 | $539 | $476 | $327 | $402 | $505 | $668 | $626 | $785 | $275 |
| Build (millions) | $4,158 | $2,963 | $3,304 | $2,761 | $1,471 | $2,558 | $2,394 | $2,630 | $3,691 | $3,513 | $2,956 |
| Maintain (millions) | $1,724 | $3,059 | $2,722 | $2,538 | $3,133 | $2,887 | $3,068 | $3,295 | $3,782 | $4,604 | $4,787 |
| **Total* (millions)** | **$ 7,142** | **$ 7,378** | **$ 7,228** | **$ 6,306** | **$ 5,469** | **$ 6,352** | **$ 6,503** | **$ 7,210** | **$ 8,712** | **$ 9,596** | **$ 8,863** |
| **With Proposition 1 proceeds (millions)** | | | | | | | | | | **$11,336** | **$10,171** |
| Highway Cost index | 1.27 | 1.21 | 1.22 | 1.03 | 1.00 | 1.01 | 1.06 | 1.04 | 1.03 | 1.04 | 1.06 |
| Consumer Price Index | 0.92 | 0.95 | 0.98 | 0.98 | 1.00 | 1.02 | 1.04 | 1.07 | 1.09 | 1.11 | 1.13 |
| Spending (millions) in Constant 2010 $ | **$5,993** | **$6,391** | **$6,170** | **$6,158** | **$5,469** | **$6,276** | **$6,143** | **$6,910** | **$8,388** | **$10,805** | **$9,533** |
| Per capita spending** | $257 | $268 | $254 | $248 | $217 | $245 | $236 | $261 | $312 | $393 | $342 |
| Spending per vehicle mile** | $0.025 | $0.026 | $0.026 | $0.027 | $0.023 | $0.026 | $0.026 | $0.029 | $0.035 | $0.044 | $0.038 |
| Texas population in millions | 23.4 | 23.8 | 24.3 | 24.8 | 25.2 | 25.6 | 26.1 | 26.5 | 26.8 | 27.2 | 27.7 |
| Vehicle miles in billions | 238.3 | 243.4 | 235.4 | 230.0 | 234.0 | 237.4 | 237.8 | 240.4 | 242.9 | 245.3 | 247.7 |

**Total excludes debt services; Comptroller summaries that account for spending in multiple years used for 2006-08, TxDOT actual spending used for 2009-13. TxDOT estimated spending for 2014-16. **In constant 2010 dollars.*

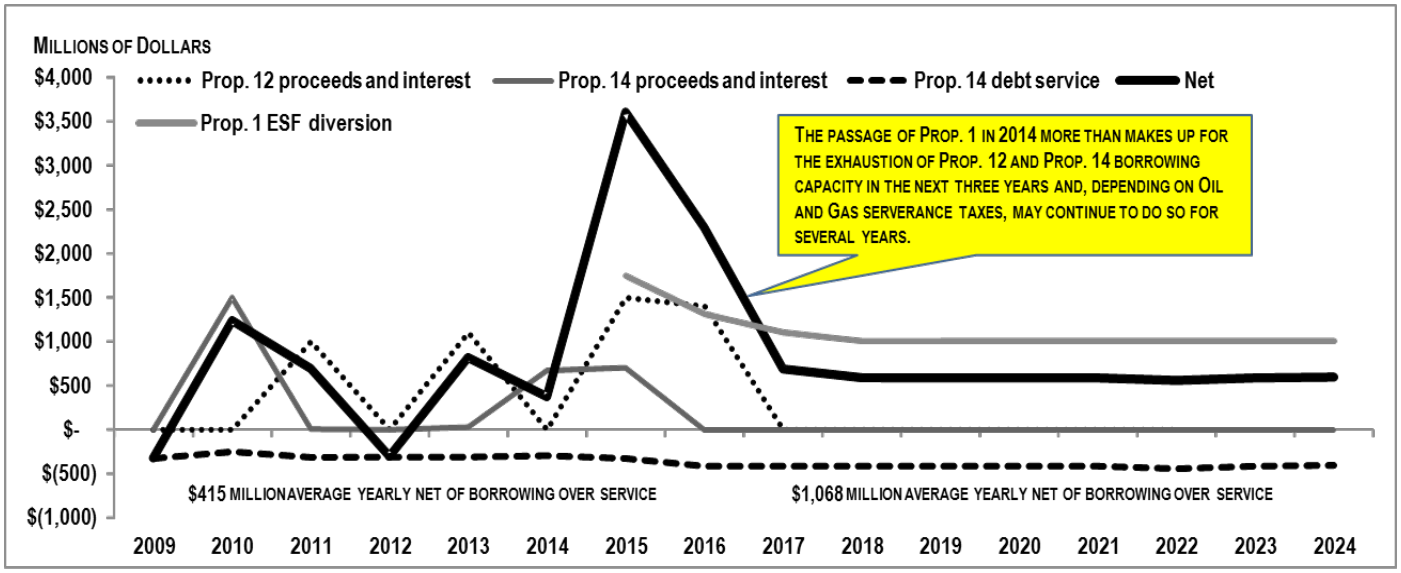
more volatile than the Consumer Price Index. The totals for the upcoming biennium include additional spending made possible from the passage of Proposition 1: $1.74 billion in 2015 and $1.31 billion in 2016.[13] *Figure 2* also displays the per capita amount of spending on roads as adjusted for inflation as well as the spending per vehicle road mile. Growth rates for 2014 through 2016 were assumed to be 1.5 percent per year for population and 1.1 percent per year for vehicle road miles—the latter being the rate of growth from 2012 to 2013.

*Figure 3* illustrates the cash flow resulting from the sale and debt service of Propositions 12 and 14, and newly passed Proposition 1. Proposition 14 was approved by voters in 2003, authorizing the sale of $6 billion in bonds to be paid back from the State Highway Fund. Proposition 12 was approved by voters in November 2007 and authorized the sale of $5 billion in bonds to be repaid from the general fund. In the six-year period ending in fiscal year 2014, the average yearly net proceeds from the sale of debt minus the service of that debt from the State Highway Fund was $415 million. But, while the borrowing capacity runs out in 2016, the passage of Proposition 1 more than makes up for the loss of borrowing and the debt service costs to the State Highway Fund, with an average yearly net for the ten-year period through 2024 of $1,068 million. Thus, the passage of Proposition 1 and resultant diversions from the Economic Stabilization Fund make up for the exhaustion of borrowing authority with, depending on estimates, up to $600 million in additional average yearly funding. Spending on toll roads is not included in *Figure 3*. There is about $3.7 billion in outstanding debt service spread amongst nine tolling entities.[14]

In 2014, before passage of Proposition 1, state transportation officials and advocates for highway construction interests claimed that an additional $5 billion per year was needed for Texas roads: $3 billion for construction, $1 billion in upgrades of rural roads to handle oil and gas production equipment traffic and $1 billion for maintenance.[15] By comparison, *Figure 2* showed that inflation-adjusted spending on design, rights of way acquisition, construction and maintenance is $4.7 billion greater in 2015 than it was in 2006 in 2010 dollars.

In addition to the ongoing ESF diversion approved by voters, some members of the Texas Legislature are calling for an end to budgetary diversions from Texas' transportation account, Fund 6, which may amount to as much as $650 million per year.[16] This would leave a shortfall, according to TxDOT, of $2.85 billion per year, assuming no reforms at TxDOT and no changes to road management. A later section of this paper will explore whether this claimed road funding shortfall might be ameliorated through means other than additional tax money.

***Figure 3—The exhaustion of Proposition 12 & 14 borrowing in 2016 would have left transportation spending $1.1 billion annually less than in recent years, but Prop. 1's diversion of Economic Stabilization Fund monies more than restores the spending levels previously funded with debt.***



> **“Road use is not locked in a linear relationship with employment; neither is it completely dependent on population or the economy.”**

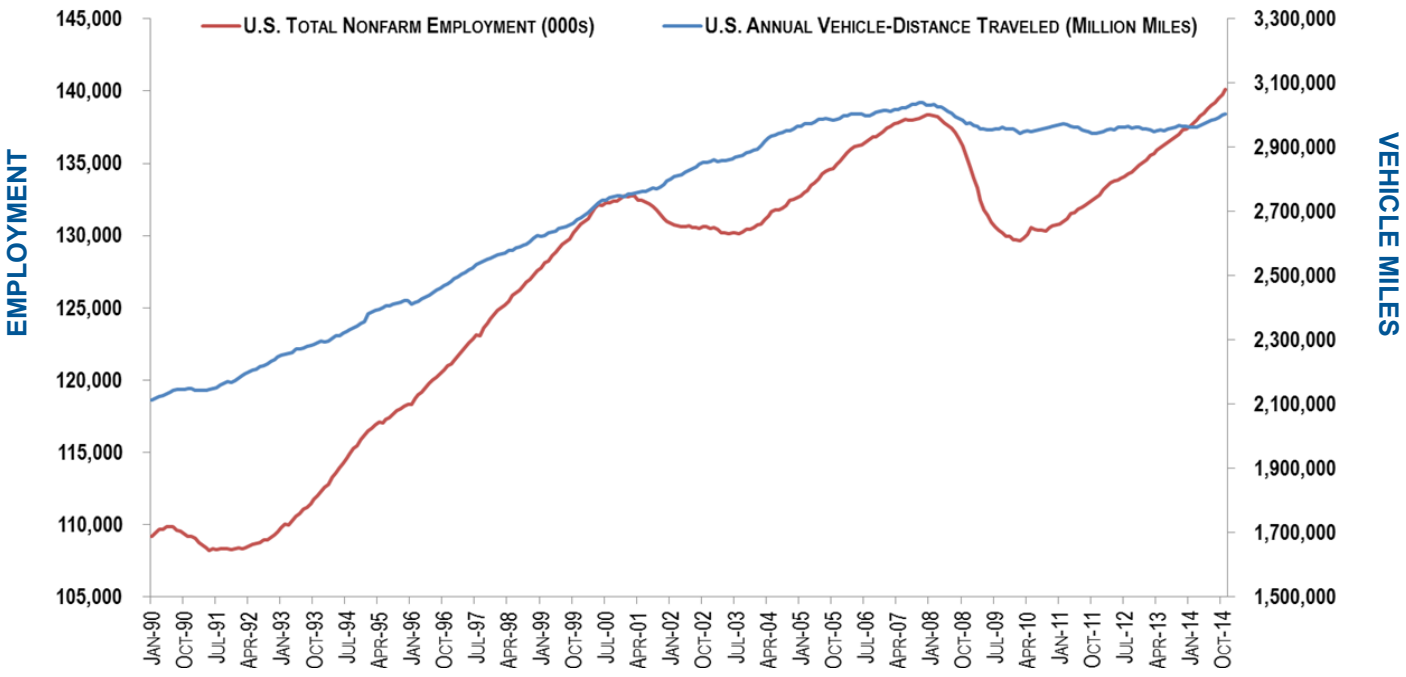
## Current Forecasting Overstates Transportation Funding Needs

In 2005, Texans drove a cumulative 235 million vehicle miles averaging 10,314 miles per Texan per year, just above the national average of 10,109 miles. In 2010, even though Texas' population had grown by 2.5 million, or almost 11 percent, the total number of vehicle miles driven on Texas' roads declined by 1.2 million miles to a per capita annual mileage of 9,267, just under the national average of 9,590 miles.[17] That Texans drove less than the average American in 2010 is all the more remarkable when considering that Texas had the strongest economy of any large state that year, indicating that Texas' decline in driving miles relative to the rest of the nation has less of a connection with the economy than with other factors, such as increased urbanization.

The Texas A&M Transportation Institute points out that Texas' road capacity has grown 19 percent in 40 years while the population more than doubled and the number of registered vehicles has increased 172 percent.[18] Data such as this is often cited by advocates for significantly boosting Texas transportation spending within the current framework of largely free roads supported by toll roads in the high growth areas.

But, as shown in *Figure 4*, road use is not locked in a linear relationship with employment; neither is it completely dependent on population or the economy. An example from Maryland's Department of Transportation illustrates the danger of making linear assumptions about vehicle miles traveled.[19] *Figure 5* shows how, after miles declined in the state in 2007 at the start of the recession, Maryland's traffic planners assumed a robust rebound in traffic in 2009. However, other factors

***Figure 4—After a decades of increase after WWII, with short interruptions during the oil shocks of the 1970s or during recessions, vehicle miles have remained flat, likely due to underlying changes such as the rise of the Internet.***



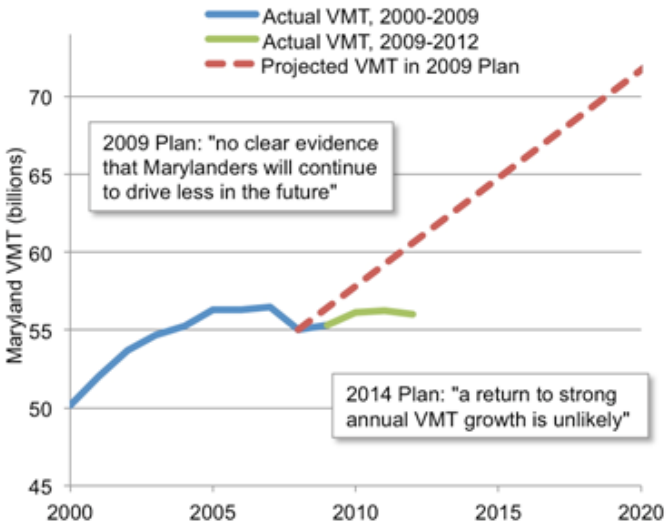
came into play: gas prices, Internet use, telecommuting, land-use patterns, delayed driving ages, the population-to-employment ratio acting together led the Maryland Department of Transportation to issue a significant downward revision of its vehicle miles traveled projections in 2014.*

As with Maryland, might similar factors come into play in Texas? And, what might happen to roadway use in the future with the introduction of autonomous cars, increased school choice, and vastly faster Internet speeds?

*Figure 6* displays four key Texas data sets in terms of percent growth using 2008 as the base year: vehicle miles traveled (VMT),[20] seasonally adjusted nonfarm employment,[21] population, and TxDOT's Texas Statewide Long-Range Transportation Plan Total Daily Statewide 2035 Forecast Vehicle Miles Traveled.[22] In its 2035 plan, TxDOT wrote, "VMT is currently outpacing population growth in Texas. This trend is predicted to continue at an accelerated pace. From the measured 2008 levels, VMT is predicted to increase 72 percent, while population will grow by 43 percent by 2035."[23] Importantly *Figure 6* shows that, by 2014, TxDOT's foundational 2008 traffic forecast for 2014 was significantly higher than actual traffic loads that year and was running well below population growth. This forecast is one of the basic building blocks of TxDOT's Unified Transportation Program which features hundreds of pages of detailed proposed project data. But, if the underlying forecast is off, it calls into question the scope of needed projects across the state, especially in the out years.

*Figure 7* builds on *Figure 6*, extending TxDOT's 2035 traffic forecast with its 2.028 percent annual compound growth rate out to 2040, five years beyond the last officially published Statewide Long-Range Transportation Plan's end date.[24] It also shows actual miles driven in millions of miles per day from 2007 to 2014 (December 2014 traffic was estimated by the author at the time of

***Figure 5—Forecasting future traffic trends is fraught with danger as models can't adequately account for all major inputs to traffic volume.***




this paper). In addition, *Figure 7* incorporates the latest TxDOT VMT forecast from the draft Texas Transportation Plan 2040 (the final was to have been released in December 2014[25]). This updated—but still in draft—TxDOT VMT forecast results in 2040 traffic projections that are about 12 percent lower overall than what was forecast using the 2035 plan's compound growth rate with 28 percent less net growth. *Figure 7* then presents two ranges of alternative vehicle miles driven estimates, the high range is based on the average actual growth in Texas traffic in the past four years, from 2011 to 2014, at the height of the recovery from the late recession. The low range traffic growth estimate is based on recent population growth and its relationship to miles traveled tapered to a lower population growth rate more in line with, but still higher than, the Texas demographer's official 2010 forecast.[26]

* Todd G. Buchholz and Victoria Buchholz in a New York Times op-ed entitled "The Go-Nowhere Generation," on March 10, 2012 note how young adults have increasingly delayed the age at which they start driving due to Internet use:

> *In the most startling behavioral change among young people…, an increasing number of teenagers are not even bothering to get their driver's licenses. Back in the early 1980s, 80 percent of 18-year-olds proudly strutted out of the D.M.V. with newly minted licenses, according to a study by researchers at the University of Michigan's Transportation Research Institute. By 2008—even before the Great Recession—that number had dropped to 65 percent. Though it's easy to blame the high cost of cars or gasoline… it takes fewer weeks of work income to buy a car today than in the early 1980s, and inflation-adjusted gasoline prices didn't get out of line until a few years ago.*

Perhaps young people are too happy at home checking Facebook. (In) a study of 15 countries… found that when young people spent more time on the Internet, they delayed getting their driver's licenses.

*Figure 6—By 2014, the actual miles Texans were driving was significantly below TxDOT's 2008 forecast document.*

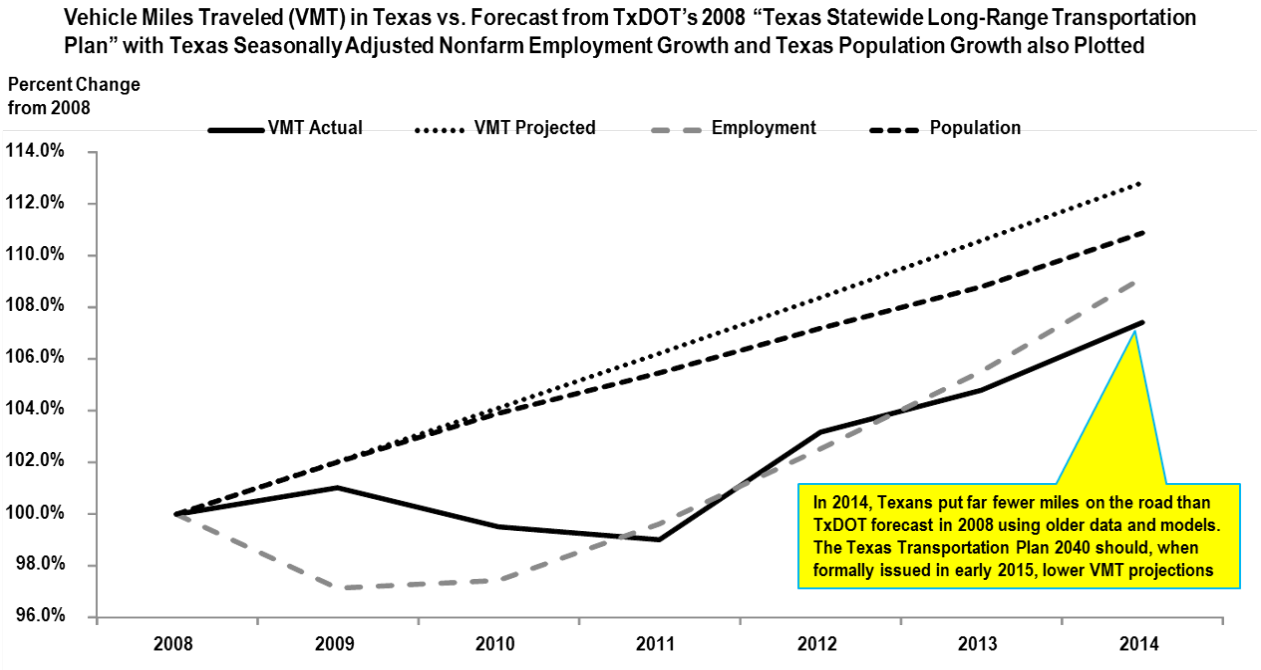
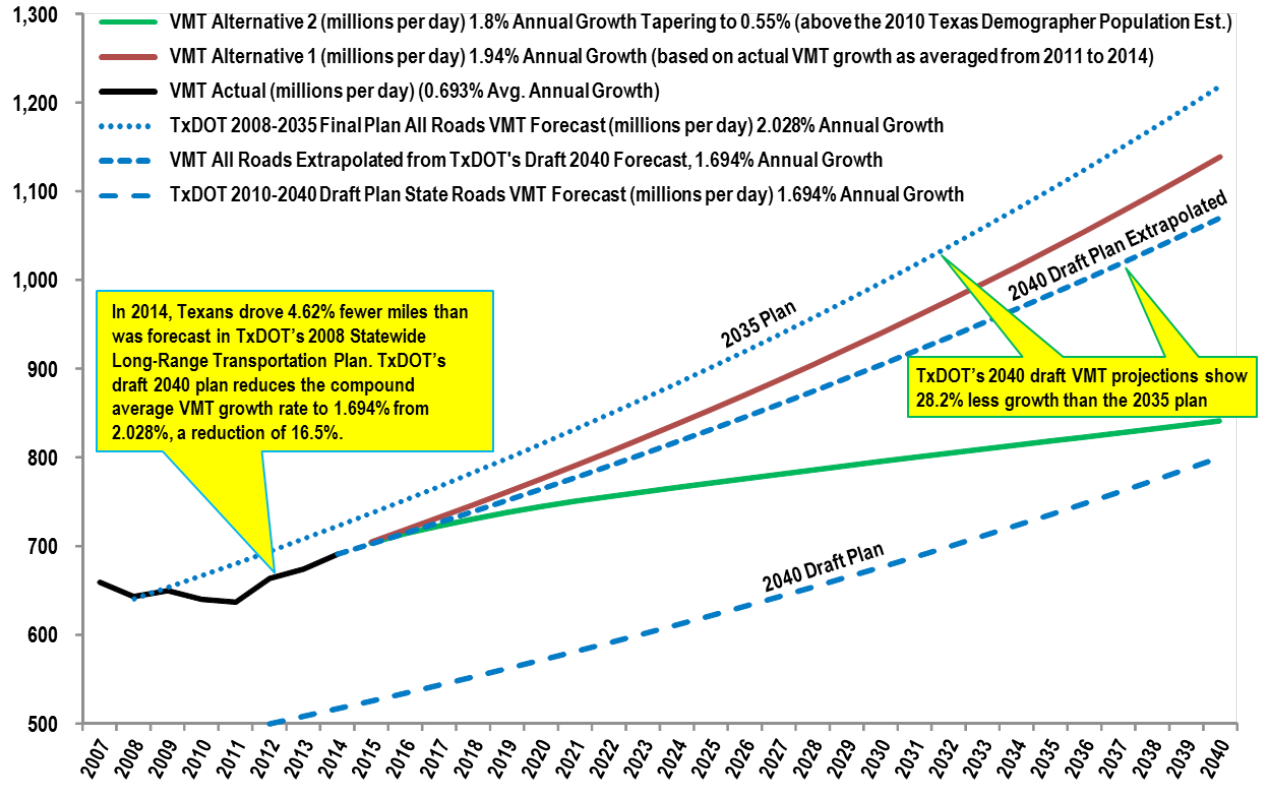



*Figure 7—Vehicle Miles Traveled forecasts are the foundation for future TxDOT needs forecasts—the draft 2040 VMT estimate shows 28.2 percent less traffic growth by 2040 than the rate imputed by the 2035 plan.*



TxDOT's new draft 2040 plan foresees a need for $547 billion in transportation investment in Texas. *Figure 8* displays this estimate.[27]

The first two rows of *Figure 8*, "Highways–Pavement" and "Highways–Bridge/Culvert" refer to estimated costs to maintain roads and bridges operated by TxDOT. The "Highways–Expansion" line refers to the estimated additional lane miles needed to maintain mobility at 2010 levels.[28]

*Figure 9* shows the yearly outlay requirements for the first three rows in *Figure 8* as shown in TxDOT's draft 2040 plan.[29] The plan projects yearly needs of $9.2 billion for relieving congestion, $4 billion for pavement maintenance and repair and $1.5 billion for bridge maintenance and repair.

***Figure 8—Under existing funding assumptions—that government would fund transportation needs and take the lead in their development—it would be extremely difficult to reduce congestion without fundamental reform in the delivery and operation of transportation services.***

| Mode | Unconstrained Needs (2014 Dollars in Billions) |
|---|---|
| Highways - Pavement | $103.7 |
| Highways - Bridge/Culvert | $40 |
| Highways - Expansion | $239.2 |
| Transit (excluding Passenger Rail) | $101.2 |
| Passenger Rail | $21 |
| Bicycle & Pedestrian | $2.19 |
| Aviation | $20.4 |
| ITS | $13 |
| Non-Highway Freight | $5.7 (total)<br>- $3.9 (freight rail)<br>- $0.8 (port/waterway)<br>- $1.0 (air cargo) |
| **TOTAL** | $547 ($21/year) |

TxDOT's 2035 plan also made projections for the needs shown in *Figures 8 and 9,* though presented in a different format. *Figure 10* compares the transportation investment requirements forecast for the 25-year period 2010 to 2035 made in the last official forecast with the 26-year period 2014 to 2040 made in the 2040 draft estimate. The 2010 numbers are adjusted by National Highway Construction Cost Index for the first two quarters of 2010 to arrive at 2014 dollars.

*Figure 10* shows a number of interesting items. First, the highway construction cost adjusted yearly expenditure rate needed for expansion is 9 percent lower in the 2040 plan as compared to the 2035 plan. This reduction should be placed in the context of *Figure 7* which showed a 28.2 percent reduction in expansion requirements due to a reduced estimate for vehicle miles traveled in Texas. It's possible that the need was reduced by 9 percent vs. the full 28.2 percent due to increased highway construction cost inflation. But, the assumptions stated that the costs were in 2014 dollars, so, it may be that the forecast need for expansion was not reduced by as much as the underlying VMT estimate. Further, the amount forecast for highway and bridge maintenance is only 7 and 16 percent more per year, respectively, than in the 2035 forecast, suggesting that construction cost inflation was not a factor.

Second, TxDOT's 2040 plan shows a doubling of spending on mass transit, with passenger rail spending up 153 percent. By comparison, spending on water-borne freight, air freight, and rail freight is projected to be down by 75 percent. This may be due to a change in definition of who is responsible for the costs, since, the 2035 study, said that,
"Estimated annual freight rail needs are $637 million from 2005 to 2030…"[30]

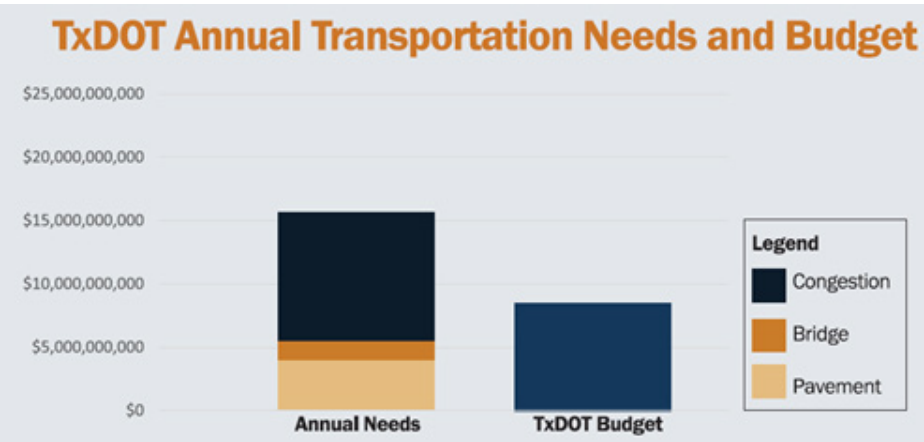



***Figure 9—TxDOT projects the yearly outlays needed to address congestion at $9.2 billion.***

***Figure 10—The draft 2040 plan only sees a reduction of 9 percent in yearly outlay requirements for expansion over the 2035 plan even though additional future vehicle miles traveled are forecast to be 28.2 percent lower, meanwhile, TxDOT forecasts a more than doubling of mass transit and passenger rail outlays.***

| | 2035 Plan ($ Billions, 2010) | 2035 Plan ($ Billions, 2014) | Yearly Outlay for 2035 Plan ($ Billions, 2014) | Total Spent in 2010-2013 ($ Billions) | 2040 Plan ($ Billions, 2014) | Yearly Outlay for 2040 Plan ($ Billions, 2014) | 2040 v. 2035 Yearly Spending Ratio (2014 $) |
|---|---|---|---|---|---|---|---|
| **Maintain Highways** | $ 90.8 | $ 93.3 | $ 3.7 | $ 12.4 | $ 103.7 | $ 4.0 | *1.07* |
| **Maintain Bridges** | $ 32.1 | $ 33.0 | $ 1.3 | Inc. above | $ 40.0 | $ 1.5 | *1.16* |
| **Expansion** | $ 246.6 | $ 253.6 | $ 10.1 | $ 13.2 | $ 239.2 | $ 9.2 | *0.91* |
| **Transit** | $ 43.3 | $ 44.6 | $ 1.8 | | $ 101.2 | $ 3.9 | *2.18* |
| **Passenger Rail** | $ 7.8 | $ 8.0 | $ 0.3 | | $ 21.0 | $ 0.8 | *2.53* |
| **Bicycle** | | | | | $ 2.2 | $ 0.1 | *N/A* |
| **Aviation** | $ 16.1 | $ 16.6 | $ 0.7 | | $ 20.4 | $ 0.8 | *1.18* |
| **ITS** | | | | | $ 13.0 | $ 0.5 | *N/A* |
| **Non-Highway Freight** | $ 21.7 | $ 22.3 | $ 0.9 | | $ 5.7 | $ 0.2 | *0.25* |
| | **$ 458.5** | **$ 471.3** | **$ 18.9** | **$ 25.5** | **$ 546.4** | **$ 21.0** | ***1.11*** |

To meet all the added needs forecast by TxDOT, provides a menu of ways to generate additional revenue.[31] Among the eight suggestions are three tax increases:

- **Motor Vehicle Sales Tax.** Some legislative leaders have suggested using a portion of vehicle sales tax revenue for transportation. Such revenue is projected to reach $3.8 billion in 2014 and 2015 for the General Revenue Fund.
- **Public-Private Partnerships.** Partnering with the private sector brings in additional money. It allows projects to be built sooner rather than waiting until traditional funding becomes available.
- **Texas Mobility Fund.** New revenue sources for the Texas Mobility Fund could help retire debt or expand the fund's capacity to accelerate new projects.
- **Transportation Reinvestment Zones (TRZ).** TRZs provide another local funding option for entities that choose to participate. Increased property values generate revenue within the improved zone to finance transportation projects.
- **Vehicle Miles Traveled (VMT) tax.** Replacing the current per gallon fuel tax with a VMT system would accurately reflect road usage and could compensate for increasing fuel efficiency.
- **Index or increase the motor fuel tax.** A one cent increase in the tax would generate about $110 million a year in revenue for the SHF. Any additional gains, however, will eventually be tempered by higher fuel efficiency and inflation.
- **Increase vehicle registration fees.** Each $10 increase in motor vehicle registration fees should yield almost $210 million annually statewide in additional revenues.
- **Tolling.** Toll roads play a significant role in providing transportation solutions. While toll roads cannot be the state's only approach to providing new roadways, they offer drivers alternative routes and more time-saving choices.

## Highway Spending in Context

In the 2014-15 biennium, $22.9 billion in estimated funding will be available to TxDOT, including the new infusion of $1.74 billion from Proposition 1. According to the Comptroller's office, 43 percent of this funding derives from dedicated state funding and the State Highway Fund, 37 percent is from federal funding, 15 percent from bond proceeds, 3 percent from the Texas

Mobility Fund, and less than 2 percent from general revenue.[32] How does Texas' transportation spending compare with other states and what does it buy?

*Figure 11* shows how Texas' capital outlays per person in 2011 and 2012 stacked up against the other states in order of the amount spent.[33] Texas spent $614 per capita over the two-year period on road construction vs. the U.S. average of $476, some 29 percent more. But, Texas has been experiencing higher population growth than the rest of the nation.

Small states dominate the top of the list, likely due to a lack of economies of scale and, in the case of Alaska, high construction costs due to terrain and remoteness.

Of the most populous 12 states, only Pennsylvania and New Jersey spent more per capita than did Texas over the two-year period. New Jersey has a larger percentage of urbanization than does Texas, 94.7 percent to 84.7 percent, which contributes to higher construction costs.

A 2002 lane-mile cost study of 25 states showed a wide variation in costs, with lane-mile costs hitting $8,461,000 in New York, $5,942,000 in Hawaii, and $4,787,000 in New Jersey on the high end with Mississippi, $1,034,000, Montana, $1,119,000, and Wyoming, $1,261,000, showing the lowest cost per mile.[34] In this survey, construction costs per mile varied as much as a factor of eight.

*Figure 12* ranks road maintenance and services spending per capita by state for the years 2011 and 2012.[35] Again, as with capital expenditures, Texas spends more than the national average, $149 per capita vs. $137, or 9 percent more. The average annual temperature by state is also shown next to the maintenance outlays, since states subject to widespread hard freezes tend to have greater road maintenance requirements. The figure also ranks spending on maintenance by lane mile in each state.[36] This ranking shows huge variations in spending, with heavily urbanized Delaware, a major recipient of federal funds, spending $57,376 per lane mile on maintenance, while North Dakota spent $346 per lane mile.

*Figure 13* displays the Reason Foundation's 2014 Annual Highway Report's overall performance and cost-effectiveness rankings (data as of 2012). Texas ranks 11th in the nation.[37] In 2009, Texas was also ranked 11th.

***Figure 11—Texas spent $614 per capita on state and local roads in 2011 & 2012, 29 perecnt higher than the national average.***

| State | Per Capita Capital Outlay, 2011 & 2012 | % of Pop. Growth, 2000–2010 |
|---|---|---|
| North Dakota | $1,588 | 5% |
| Wyoming | $1,405 | 14% |
| Alaska | $1,115 | 13% |
| Vermont | $1,092 | 3% |
| Dist. of Col. | $1,051 | 5% |
| South Dakota | $1,025 | 8% |
| Montana | $980 | 10% |
| Washington | $940 | 14% |
| West Virginia | $884 | 3% |
| Oklahoma | $842 | 9% |
| Utah | $820 | 24% |
| Delaware | $807 | 15% |
| Nebraska | $726 | 7% |
| Pennsylvania | $679 | 3% |
| Louisiana | $654 | 1% |
| Kentucky | $649 | 7% |
| New Jersey | $624 | 5% |
| Kansas | $622 | 6% |
| **Texas** | **$614** | **21%** |
| Maine | $600 | 4% |
| Mississippi | $600 | 4% |
| Idaho | $569 | 21% |
| Wisconsin | $563 | 6% |
| Rhode Island | $555 | 0% |
| North Carolina | $529 | 19% |
| Indiana | $526 | 7% |
| Arkansas | $523 | 9% |
| New Hampshire | $504 | 7% |
| Iowa | $482 | 4% |
| *U.S. Average* | *$476* | *10%* |
| Missouri | $471 | 7% |
| Illinois | $460 | 3% |
| Nevada | $459 | 35% |
| New Mexico | $456 | 13% |
| Alabama | $455 | 8% |
| Florida | $452 | 18% |
| Maryland | $445 | 9% |
| Michigan | $428 | -1% |
| Connecticut | $427 | 5% |
| Tennessee | $419 | 12% |
| South Carolina | $409 | 15% |
| Minnesota | $408 | 8% |
| Massachusetts | $406 | 3% |
| Ohio | $385 | 2% |
| Oregon | $372 | 12% |
| Arizona | $349 | 25% |
| New York | $346 | 2% |
| Virginia | $316 | 13% |
| Hawaii | $316 | 12% |
| Colorado | $307 | 17% |
| Georgia | $279 | 18% |
| California | $218 | 10% |

***Figure 12—Texas spends about 9 percent more per capita on road maintenance than the national average, while spending about 16 percent less on maintenance in dollars per lane mile than the national average.***

| State | Per Capita, Maintenance & Services, 2011 & 2012 | Avg. Temp. Degree | State | Dollars Per Lane Mile |
|---|---|---|---|---|
| Delaware | $871 | 55.3 | Delaware | $57,376 |
| Alaska | $627 | 26.6 | Virginia | $19,333 |
| Vermont | $444 | 42.9 | Dist. of Col. | $16,937 |
| Virginia | $384 | 55.1 | Alaska | $14,434 |
| West Virginia | $336 | 51.8 | New Jersey | $13,694 |
| Nebraska | $327 | 48.8 | Maryland | $12,858 |
| Maine | $318 | 41 | Rhode Island | $12,786 |
| Wyoming | $281 | 42 | New York | $12,498 |
| Montana | $274 | 42.7 | Pennsylvania | $10,906 |
| Washington | $225 | 48.3 | Hawaii | $9,863 |
| Pennsylvania | $214 | 48.8 | Vermont | $9,491 |
| Kentucky | $214 | 55.6 | California | $9,241 |
| Utah | $192 | 48.6 | Maine | $9,027 |
| Arkansas | $191 | 60.4 | Washington | $9,014 |
| Indiana | $176 | 51.7 | West Virginia | $7,793 |
| Minnesota | $165 | 41.2 | Massachusetts | $7,456 |
| Missouri | $164 | 54.5 | Florida | $6,863 |
| Colorado | $159 | 45.1 | *U.S. Average* | *$6,747* |
| South Carolina | $158 | 62.4 | North Carolina | $6,612 |
| Rhode Island | $157 | 50.1 | **Texas** | **$5,697** |
| Maryland | $156 | 54.2 | Indiana | $5,659 |
| New York | $155 | 45.4 | Kentucky | $5,639 |
| North Carolina | $153 | 59 | Utah | $5,590 |
| **Texas** | **$149** | **64.8** | South Carolina | $5,314 |
| Oregon | $148 | 48.4 | New Hampshire | $4,833 |
| *U.S. Average* | *$137* | | Connecticut | $4,728 |
| South Dakota | $137 | 45.2 | Illinois | $4,533 |
| Idaho | $137 | 44.4 | Colorado | $4,435 |
| New Jersey | $132 | 52.7 | Oregon | $3,913 |
| Iowa | $132 | 47.8 | Missouri | $3,609 |
| New Hampshire | $121 | 43.8 | Ohio | $3,237 |
| Oklahoma | $115 | 59.6 | Nebraska | $3,173 |
| Kansas | $109 | 54.3 | Minnesota | $3,102 |
| Illinois | $108 | 51.8 | Nevada | $2,899 |
| Florida | $97 | 70.7 | Tennessee | $2,875 |
| California | $96 | 59.4 | Arkansas | $2,686 |
| Dist. of Col. | $93 | 58.2 | Wyoming | $2,659 |
| Tennessee | $90 | 57.6 | Louisiana | $2,514 |
| Nevada | $90 | 49.9 | Michigan | $2,220 |
| North Dakota | $88 | 40.4 | Idaho | $2,202 |
| Massachusetts | $86 | 47.9 | Arizona | $1,952 |
| Alabama | $77 | 62.8 | Oklahoma | $1,865 |
| Wisconsin | $77 | 43.1 | Wisconsin | $1,845 |
| Ohio | $74 | 50.7 | Montana | $1,797 |
| Louisiana | $71 | 66.4 | Alabama | $1,744 |
| Hawaii | $69 | 70 | Iowa | $1,729 |
| Mississippi | $66 | 63.4 | Georgia | $1,717 |
| Connecticut | $60 | 49 | Mississippi | $1,245 |
| Michigan | $58 | 44.4 | Kansas | $1,096 |
| Georgia | $47 | 63.5 | South Dakota | $676 |
| Arizona | $43 | 60.3 | New Mexico | $361 |
| New Mexico | $26 | 53.4 | North Dakota | $346 |

Reason developed its survey from 11 factors dealing with spending, quality of roads and bridges, urban interstate congestion, fatality rate, and narrow rural arterial lanes. While the disbursement categories are somewhat skewed by a state's cost of living index, the rankings still provide a good relative understanding of how Texas manages its road system as compared to the other states. Reason rated Texas (1 being best, 50, worst):[38]

- 23rd in overall disbursement efficiency
- 32nd in capital and bridge disbursement efficiency
- 29th in maintenance disbursement efficiency
- 9th in administrative disbursement efficiency
- 24th in rural interstate pavement condition
- 8th in rural arterial pavement condition
- 27th in urban interstate pavement condition
- 27th in urban interstate/freeway congestion
- 14th in deficient bridges
- 40th in fatality rate
- 17th in narrow rural arterial lanes

Texas relative capital and bridge construction as well as the maintenance ratings could be significantly improved with greater use of design-build contracting and a lifting of the numerous statutory restrictions on TxDOT that discourage efficiencies. The congestion ranking could be improved immediately if drivers using roads at peak commuting times paid a small fee (the fee being offset by tax cuts), thus

encouraging non-commuters to use the roads at off-peak times. This concept is explored later in the paper.

## The Relationship between Texas Jobs and Commute Times

The number of Texans who commute and how they choose get to work is largely influenced by the economy, the price of fuel, land use patterns (job and housing centers), availability of transportation modes, and technology (e.g., telecommuting).

Earlier, *Figures 4–7* illustrated vehicle miles traveled (VMT) for the U.S., Maryland, and in Texas. VMT is a major input to commute times, itself a sensitive issue with Texas voters. Commute times are a function of traffic congestion. Congestion can be relieved by a combination of building more roads or lane miles, reducing the number of cars on the road at peak use times, and increasing the hourly volume of vehicles on the road though technology, such as traffic signal synchronization or future vehicle automation.

***Figure 13—By one measure, Texas ranks 11th in highway expenditure efficiency.***

**Reason Foundation's Highway Report: Overall Performance and Cost-Effectiveness Ranking**

| | |
|---|---|
| 1. Wyoming | 26. Oregon |
| 2. Nebraska | 27. Illinois |
| 3. South Dakota | 28. Minnesota |
| 4. South Carolina | 29. Utah |
| 5. Kansas | 30. Idaho |
| 6. North Dakota | 31. Florida |
| 7. New Mexico | 32. Michigan |
| 8. Mississippi | 33. Colorado |
| 9. Montana | 34. West Virginia |
| 10. Kentucky | 35. Arkansas |
| **11. Texas** | 36. Indiana |
| 12. Missouri | 37. Delaware |
| 13. Georgia | 38. Vermont |
| 14. Ohio | 39. Maryland |
| 15. Wisconsin | 40. Louisiana |
| 16. Maine | 41. Pennsylvania |
| 17. Tennessee | 42. Washington |
| 18. Iowa | 43. New York |
| 19. Arizona | 44. Connecticut |
| 20. North Carolina | 45. California |
| 21. Alabama | 46. Massachusetts |
| 22. Oklahoma | 47. Rhode Island |
| 23. New Hampshire | 48. New Jersey |
| 24. Nevada | 49. Alaska |
| 25. Virginia | 50. Hawaii |

A study for the Washington, D.C. metro area showed that a 10 to 14 percent decrease in peak hour traffic can reduce congestion by 75 to 80 percent—even a 5 to 10 percent decline in traffic volume can make a noticeable difference.[39] But, only 80 percent of vehicles on the road during the morning commute are actually on the way to work. This number declines to 64 percent during the afternoon rush hour. A separate analysis of nationwide data indicated that more than half the vehicles on the road at any given time were not being driven to work, even during the morning rush hour.[40]

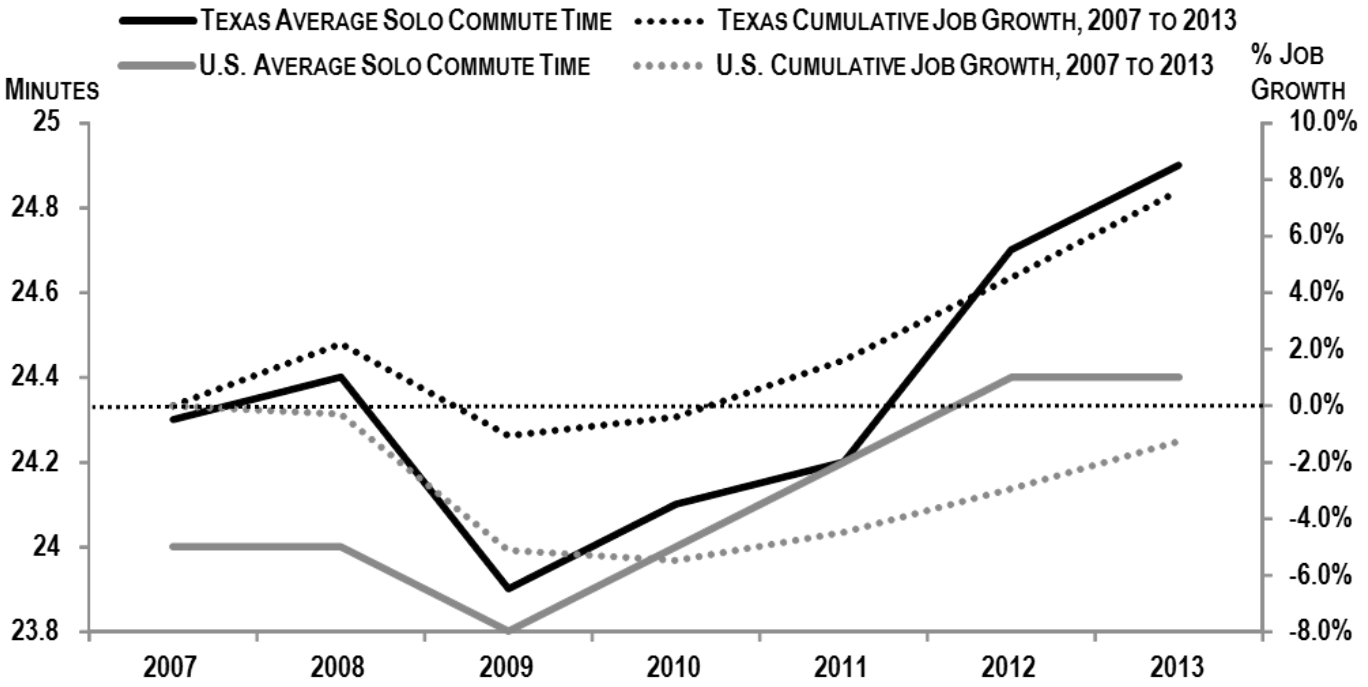
*Figure 14* shows the close relationship between national and Texas solo commute times and cumulative job growth from 2007 to 2013.[41] Note how the modest dip of 1.1 percent in the number of working Texans led to a 2 percent decline in average solo commute times. In 2013, 80.1 of Texans used their vehicles to commute to work alone while 10.7 percent carpooled and only a little less than 1.6 percent used mass transit.[42]

Further, because of the freedom, convenience and large savings in time, even with growing congestion in urban areas, the share of people commuting alone has increased in all but a couple of states over the past few decades. In Texas in 2013, the average time it took for a solo commuter to travel to work was 24.9 minutes.[43] Carpoolers averaged 28.1 minutes, some 3.2 minutes longer than solo commuters. Users of mass transit took an average of 45.9 minutes to get to work, 21 minutes longer than a solo commute, or 84 percent more time spent getting to work. On a daily basis, this adds up to 42 extra minutes per day or 3-1/2 hours per week for a five-day workweek.

## Reducing Traffic Congestion Without Spending More Money

There are two traditional and non-mutually exclusive schools of thought when it comes to relieving congestion and reducing commute times: spend more money on road construction; or force or entice drivers out of their cars via government pressure on free parking or parking spaces near work centers in general, increased mass transit spending, and incentives for carpooling.* Neither strategy addresses a growing problem: peak use conges-

***Figure 14—Texas added 7.6 percent more nonfarm jobs from 2007 to 2013 while average commute times for solo drivers increased by 2.5 percent; over the same period, the national level saw a 1.3 percent decrease in jobs with a 1.7 percent increase in commute times.***




tion that lengthens commute times, eroding quality of life, wasting fuel, and increasing vehicle emissions.

Enacting a form of peak use pricing, called "congestion pricing" or "value pricing" would significantly reduce commute time congestion while simultaneously reducing current and future road construction requirements. Congestion pricing operates under the same concept as theatre matinee pricing or Uber surge pricing. If implemented, it would also result in a natural increase in the use of bus service and carpooling. At the same time it would render largely ineffective the mantra that "you can't build your way out of congestion" therefore justifying expenditures on excessively expensive urban rail systems as well as the increasing use of social planning tools such as eliminating parking in urban cores and increasing vehicle and fuel taxes.

Congestion pricing on roads differs from tolling in that tolling is meant to pay for the cost of building, maintaining and operating a road, and, if privately-run, return a profit while congestion pricing has as its aim optimum driving conditions. Of course, private operators of toll roads can also use variable pricing to optimize revenue, since a congested toll road is unable to carry as much traffic as one operating at full capacity.

Were roads built, maintained and operated by the private sector, commercial operators would be highly inclined to use a value pricing system to maximize revenue. Under the present system, however, government sees little benefit in upsetting the status quo where each driver entering the road system at rush hour gains the immediate benefit of the use of the road while shifting to all other drivers an incremental cost of additional time spent commuting. As a result, TxDOT's 2040 plan foresees spending $239 billion to address congestion along with a more than doubling of annual funds for mass transit and passenger rail—another $122 billion.[44] *Figure 15* shows that, even with these funds TxDOT calculates that con-

* "Healthy North Texas" an initiative of the Dallas-Fort Worth Hospital Council (see: www.healthyntexas.org), provides a common narrative against solo driving. Note the lack of mention of how using public transit doubles commute times: "Driving alone to work consumes more fuel and resources than other modes of transportation, such as carpooling, public transportation, biking and walking. Driving alone also increases traffic congestion, especially in areas of greater population density."

gestion will worsen, resulting in the "Commuter Stress Index" climbing by 3.9 percent per year and statewide traffic delays more than tripling from 507 million vehicle hours in 2010 to 1.7 billion vehicle hours in 2040, an annual increase in delays of 8.2 percent.[45]

However, there are likely upper limits on the time people are willing to spend stuck in traffic. To the extent commutes worsen, land use patterns will change and additional employment centers will begin to build up on the perimeter of major urban areas—assuming land use decisions remain largely in the free market and not centralized and distorted by government decision makers.

Other experts have suggested that the amount of travel people are willing to perform has a limit, called "saturation of mobility," that is linked to time and the increasing costs of infrastructure to support higher travel speeds and relieve congestion.[48]

## Recommendations

Saving taxpayer money while simultaneously improving the quality of the Lone Star State's transportation network is possible. But only if the procurement process allows contractors to provide better value for the design, construction, and maintenance of Texas roads than is currently the case due to statutory restrictions on the use of design-build contracts.

*Figure 16* overviews potential savings from implementing procurement reforms at TxDOT with the maximum 20-year savings approaching $33 billion. The analysis is based on 2014 spending levels with potentially higher savings if greater levels of transportation spending are sustained.

## Reform the TxDOT Procurement Process

There are four sections of the Transportation Code that proscribe key aspects of contracting. The most significant section of the Transportation Code insofar as its money-saving potential is Section 223.242, Scope of and Limitations on Contracts.[49] Section 223.242 authorizes "the use of the design-build method for the design, construction, expansion, extension, related capital maintenance, rehabilitation, alteration, or repair of a highway project." It then restricts the use of design-build contracting to obtain "a leasehold interest in the highway project" or to "operate or retain revenue from the operation of a toll project." Design-build is a contracting method where a single contractor is responsible for designing and building a project as opposed to the traditional method of design-bid-build. It has been used extensively in Comprehensive Development Agreements (CDAs) to build toll roads, but its use is not limited to this method of road construction. There are two advantages of using the design-build contracting method over the traditional design-bid-build contracting method: it's generally cheaper and quicker.

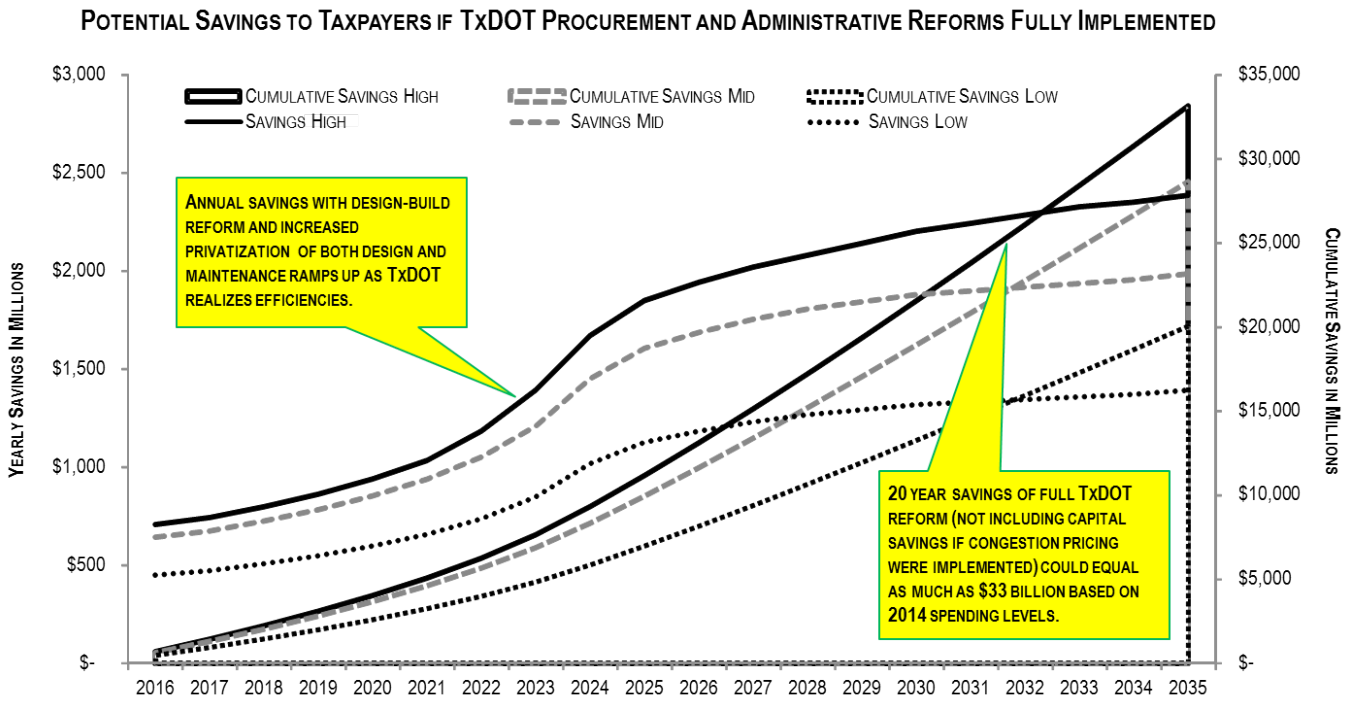
McKinsey & Company, a U.S.-based worldwide consulting firm with revenue of $7.8 billion in 2013, estimates design-build can save up to 29 percent on a large, complex project. They break the savings down as follows: 6 to 10 percent in engineering cost savings via design-to-value/design-to-cost; 6 to 8 percent in procurement through strategic sourcing, demand consolidation, contractor development, and frame contracts; 11 to 12 percent in construction costs with lean execution, project organization/governance and planning optimization for a total savings of from 23 to 29 percent.[50]

***Figure 15—Current TxDOT forecasts see a major worsening of commuting conditions through 2040, though changing technology, land-use patterns, and innovations such as congestion pricing may slow or stop this deterioration of commuting conditions.***

| Area | 2010 CSI | 2040 CSI | Percent Average Annual Growth | Percent Increase (2010-2040) |
|---|---|---|---|---|
| Statewide Total | 4,924 | 10,655 | 3.9 | 116 |

| Area | 2010 Delay (Vehicle-Hours) | 2040 Delay (Vehicle-Hours) | Percent Average Annual Growth | Percent Increase (2010-2040) |
|---|---|---|---|---|
| Rural | 100,721,100 | 548,715,200 | 14.8 | 445 |
| Urban | 406,239,700 | 1,199,396,300 | 6.5 | 195 |
| Statewide Total | 506,960,800 | 1,748,111,500 | 8.2 | 245 |

***Figure 16—Savings from reforms, up to 20 percent on capital costs, add up quickly—up to $33 billion by 2035—if the Transportation Code is amended to allow transportation dollars to be spent more efficiently.***




For contracts in excess of $100 million, studies of design-build contracting have shown that the time to complete a roadway and make it available to the driving public was reduced by as much as a year because the contract bundling eliminated a second, separate bidding process.[51]

A study by the Federal Highway Administration of 48 design-build contracts from 1990 to 2002 concluded that design-build saved, on average 2.6 percent compared to the government managers' estimates.[52] Of the 48 projects, 20 came in at a lower cost than was estimated if the traditional method were used, 11 were more costly, and 17 were completed for about the same cost as compared to the traditional method.[53] The same study estimated that the time savings averaged 14 percent with 62 projects examined for schedule, 45 of which were completed ahead of schedule and seven taking longer than anticipated.[54]

A study by the Arizona Department of Transportation looking at 16 projects from $12 million to $184 million over the five years from 1999 to 2004 estimated an average time savings of 22 percent and a dollar savings of 4 percent.[55]

A 2009 Utah study indicated that change orders resulted in 6.5 percent of costs in design-build projects vs. 14 percent using the traditional method. The Utah study further noted that traditionally-run projects saw an average cost overrun of 11 percent, a cost borne by taxpayers, as compared to no cost overruns using design-build.[56]

In Florida, a variation of design-build was used for highway safety projects called design-build push-button. The work included a wide-range of road projects including the adding a paved shoulder to a road, guardrails, traffic signals, crosswalks, skid-resistant pavement and other items. Project timelines were compressed 25 months and the savings to taxpayers hit 30 percent. Interestingly, these projects were small; under $1 million.[57]

In Texas, the $987 million DFW Connector Project used design-build which shaved a year off of the expected timeline vs. the traditional bidding process, compressing the effort by 43 percent.[58] This saved $43 million in construction inflation while allowing 180,000 cars to use the DFW Connector earlier than they otherwise would have, saving a somewhere between 8.2 million and 11 million commuter hours by open-

ing nine months to a year ahead of schedule (depending on the estimate used) for a total savings in excess of $60 million.[59]

But what about larger, more complex projects? A study of 152 highway projects in California over 25 years through 2006 showed that for the 26 projects valued at more than $100 million the cost of using the traditional design-bid-build method was 25 percent greater than would have been the case had design-build been used.[60] The 126 smaller projects were estimated as costing the less than projected when using the traditional method.

One way design-build contracting reduces costs, especially for larger projects is that the number of costly change orders on a typical project is reduced from an average of 22 to 16, saving about 5 percent on this factor alone.[61]

A wide range of studies shows savings in time to completion and in dollars with the use of design-build contracting. But, Section 223.242 of the Transportation Code restricts TxDOT to using no more than three design-build contracts per year at a value of $50 million or more. The limit of three design build contracts per year is set to expire on August 31, 2015.[62]

The lifting of the design-build limit appears to be opposed by independent engineering and design firms that benefit from the current arrangement. The question policymakers ought to consider is this: is TxDOT a jobs program, or should tax dollars allocated to transportation provide the greatest benefit to the taxpaying public?

Moving from the topic of new construction to maintenance, about $4 billion was allocated to the state's road maintenance needs in FY 2015 of which about $775 million was budgeted for maintenance work done by TxDOT employees. In 2015, 15,494 lane-miles of road were to be resurfaced by contractors and about 7,677 lane-miles were to be resurfaced by government employees.

Section 223.042 deals with the privatization of maintenance contracts.[63] Section 223.042 reads:

> *Sec. 223.042. PRIVATIZATION OF MAINTENANCE CONTRACTS. (a) Of the amount spent in a fiscal year by the department for maintenance projects, the department shall spend not less than 50 percent through contracts awarded by competitive bids.*

Thus, this section specifies that TxDOT must award through the competitive bidding process not less than half of the value of work for maintenance. TxDOT has routinely exceeded this threshold, contracting out about 60 percent of the work. If the Legislature wished to raise the percentage it would allow TxDOT's maintenance workforce to decrease with potential long term savings in deferred compensation and retirement costs as well as allowing for an increased share of maintenance work using longer-lasting innovative materials. One stated concern with trying to outsource larger shares of maintenance is that rural areas may see larger costs if put out to bid. A potential way to address this possible issue is to bundle contracts for rural areas with adjacent urban areas.

Section 223.050 outlines contracting preferences. Because, by its nature, a contracting preference provides an advantage to a contractor that they would not otherwise have, it results in higher costs to the taxpayer. This section's intent appears to be aimed at using state and local funds to provide up to a 5-percent surcharge for Texas-based businesses.[64] The language appears to allow subjective latitude for interpretation by TxDOT:

> "…in awarding a contract to a private sector provider, the department shall give preference to a private sector provider if: (1) the preference serves to create a positive economic impact on job growth and job retention in this state…"

This statute was enacted in 2013 and has yet to be used significantly by TxDOT. If challenged in court, it may be vulnerable to a challenge under the Equal Protection Clause and the Comity Clause of the U.S. Constitution.

Section 223.246 details how TxDOT issues requests for proposals (RFPs) for design-build projects.[65]

*Figure 17* illustrates some of the 14 key requirements TxDOT design-build RFPs must contain along with the effect that these requirements impose. This provision was added to the Texas Transportation Code on the floor as an amendment to the Texas Department of Transportation sunset bill in 2011 with seven members voting no.[66] Similar language was inserted in Section 370.406 to restrict regional mobility authorities' use of design-build procurements.

*Figure 18* displays other recommendations on additional cost savings on projects involving federal aid.[67]

Specific legislative guidance on the use of engineering services is found elsewhere in the Transportation Code. Section 223.041, Engineering and Design Contracts sets a floor of 35 percent in the funds used for outside engineering work. TxDOT routinely exceeds this floor by a wide margin. Directing TxDOT to use more outside design services would likely have little immediate effect.

By comparison, there are no such encouragements for privatization at the California Department of Transportation (CalTrans). In fact, California Code, while giving general guidance to CalTrans to maintain an efficient workforce, then specifies that contracts for outside professional services "…shall not cause the displacement of any permanent, temporary, or part-time employee of the department."[68] California is not known for its cost-efficient government and, in this case, statute serves to ensure CalTrans is treated more as a government jobs program than as a means to provide transportation product to California taxpayers.

Florida's transportation statutes may provide a few interesting examples. In Florida's section on design-build contracts, there is no requirement for the department of transportation to deliver plans to potential bidders that are 30 percent complete as with Texas law.[69] This flexibility reduces government staff time while increasing the flexibility of design-build contractors with an attendant increase in potential cost savings for the taxpayer. Further, unlike current Texas law—at least until August 2015—there is no limit on the number or the value of design-build contracts. In addition, Florida code specifies an upper limit of 10 percent on change order value that may arise from a design-build contract.

## Reform the TxDOT Administration

From 1989 to October 2011, Texas was the number one state in the nation in using money saving public-private partnerships (PPP) and design build procurements with nine contracts totaling $10.23 billion in inflation-adjust-

***Figure 17—TxDOT contracting requirements, enshrined in state code, reduce innovation and cost-savings, and should therefore be a target for legislative reform.***

| Paragraph No. & Requirement | Negative Effect | Recommended Solutions |
|---|---|---|
| (a) (3) materials specifications;<br>(a) (4) special material requirements | No room for innovation, use of local materials and standards that may save money for non-federally funded work | • Encourage material specification innovation<br>• Break contract into federal and non-federal portions |
| (a) (5) a schematic design approximately 30 percent complete | Requires more staff time; reduces room for design-build innovation by locking in design features | • Reduce the 30 percent design threshold<br>• Eliminate the design completion requirement for design-build contracts |
| (a) (7) quality assurance and quality control requirements | Reduces potential innovation if specified too tightly | • Allow for full life-cycle cost contracts where successful bidders would be responsible to keep the road at a certain standard of repair for a set period of years after construction |
| (a) (9) notice of any rules or goals adopted by the department relating to awarding contracts to disadvantaged business enterprises or small business enterprises | Increases the cost of the project | • Eliminate set-asides as allowed for projects using state and local funds |
| (a) (13) the relative weighting of the technical and cost proposals required under Subsection (d) and the formula by which the proposals will be evaluated and ranked; and<br>(b) The formula used to evaluate proposals under Subsection (a)(13) must allocate at least 70 percent of the weighting to the cost proposal. | Mandating a weight of at least 70 percent for cost greatly discourages the use of innovative materials and techniques that may be more costly in the short run but might cost far less to maintain in the out years; design-bid-build contractors are incentivized in this system to bid low and then boost profits through change orders during construction | • The cost of delivery should be considered in a full life-cycle cost context<br>• Allow for design-build-maintain contracts that incentivize a contractor to use longer-lasting materials and techniques that reduce the cost to operate and maintain a road<br>• Allow for contractors to propose designs that increase a road's traffic volume and get credit for it in the proposal evaluation process |
| (g) The cost proposal must include: (1) the cost of delivering the project; and (2) the estimated number of days required to complete the project. | The estimated number of days required is not required to be weighted and may result in a contractor not emphasizing this metric. | • The days required to complete a project should include the cost to drivers for a project not being completed at an earlier date<br>• Penalties for late completion need to be a routine part of completed contract terms |

***Figure 18—In the many projects that involve federal money, certain federal requirements that increase costs must be followed —breaking a project into federal and state segments can reduce costs by reducing red tape on a portion of the projects.***

| Method | Implementation/Results |
|---|---|
| General cost-reduction strategies | Standardization and consolidation of aggregate, asphalt and other construction material specifications on a regional basis taking into account the topography, weather conditions and similarities in performance of local materials; and (2) continuing to encourage the increased use of recycled asphalt pavement and recycled concrete at the state level, promoting a "practical design" philosophy of "doing what is required rather than what is desired." |
| Providing flexibility in the administration of state and federal requirements | Encourage TxDOT to re-examine and set appropriate disadvantaged business enterprise goals for various regions in the state; and supporting new aggregate sources, plants, and quarries in the state. |
| Dividing federal-aid projects into smaller, non-multi-year projects on which 100% local funding can be used | More competitive bids by local contractors; and exemption from federal requirements that can add to the total project cost. |
| Developing a catalog of alternate standards/ combinations for using the new Mechanistic-Empirical Design for Pavements, based on level of importance of project, material options and design options | Life cycle cost considerations. |
| e) Collaborating with local agencies to identify creative methods for constructing and maintaining highway projects, economically and effectively (empowering TxDOT's 25 local districts—see next section). | As an example, the Indiana Department of Transportation launched a local public agency initiative in 2009 to improve the process and reduce development time for local federal-aid construction projects. Examine the potential for parallel action by TxDOT to allow local public agencies to participate in a diverse range of projects from simple sidewalks to complex interchanges and bridges, as they do so, they can be assisted by the FHWA as well as TxDOT to administer such projects more effectively. |

ed dollars.[70] As large as this amount appears, it amounts to somewhere less than 3 percent of total transportation spending since 1989. As one Reason Foundation transportation expert notes, "Texas uses half as much money and half of the staff per lane mile as California – making them the fastest turtle."

But Texas can't afford to be "…the fastest turtle." There's an alternative to government-centric transportation planning, execution, and maintenance. Texas doesn't have to continue to fund and build its transportation infrastructure like it always has. For instance, what might happen if Texas reduced the size of the TxDOT's 12,087 full-time equivalents by 90 percent or even 98 percent and then put out to bid contracts for the maintenance and construction of roads in the 25 TxDOT districts? (See *Figure 19* at right.) Each contract could have performance criteria for quality of maintenance and congestion, be let for five to 10 years, and, most importantly, provide control of a large portion of the fuel taxes and vehicle registration fees generated from within that district, allowing the contractor, in close coordination with the far smaller TxDOT district leadership, to secure federal funding as well as private or state-leveraged bonded debt.

## South Carolina, Florida, and New Zealand offer compelling alternatives

From 1999 to 2008, South Carolina's Department of Transportation entered into partnerships with two private construction and resource management (CRM) firms (Fluor and Parsons Brinckerhoff) managing two regions to aid the implementation of 200 highway improvement projects with a value of $5 billion. The aim was to compress the timeline for completion from 27 years down to seven years.[71]

The Florida Department of Transportation is both more decentralized and more deregulated relative to TxDOT. As mentioned previously, unlike in Texas, there are no restrictions on design-build contracting in Florida. Further, Florida has driven decisions about congestion relief to eight semi-autonomous districts, each of which work closely with local officials to determine priorities. TxDOT has been working more closely with local decision makers in recent years as well. Florida's districts have functional and operational support to serve as their own departments. Florida's Secretary of Transportation reports directly to the Governor, rather than having

***Figure 19—The 25 TxDOT districts could make excellent platforms for reform, each district being equivalent to one of South Carolina's two regions used in its Construction and Resource Management Highway Program.***


decision-making authority diluted by a transportation commission (Florida has a commission, but its role is limited to developing policy recommendations). It has no monitoring authority and is prohibited from influencing day-to-day operations and contract awards.

Underlying statute shapes governmental departments. As previously noted, among the three most populous states, California, Texas, and Florida, there is a wide variation in state code that directs their respective departments of transportation. This results in differing staffing levels. *Figure 20* provides a top-level comparison.

While this comparison indicates that Texas spent more per TxDOT employee than did California or Florida (an indicator of efficiency) in 2012, the latest year for which federal data was available, TxDOT's expenditures per employee relative to its big state peers likely grew, improving one measure of efficiency. Further, due to Texas' vast road network, with the nation's highest lane miles, about 71 percent more than in California, TxDOT employees oversee a larger number of miles than do their big state counterparts.

By way of comparison, the Texas 2030 Committee estimated that Texans spend an extra $6.7 billion yearly on gas and countless hours wasted because of congestion for a cost to commuters of $570 per year with up to triple the cost for some commuters in urban areas. Each Texan spends approximately thirty-two hours in traffic each year, 60 percent more than a decade ago. Florida has been able to decrease its congested conditions on their Strategic Intermodal System to a level not seen before 2004—with a population growing nearly as fast as Texas'. Florida achieved this with a lower state motor-fuels tax, 16 cents per gallon, than Texas' 20 cents for gasoline.

New Zealand offers a more dramatic example than Florida. In 1984, New Zealand's government determined a radical restructuring was needed within the public sector after deciding that "Transport systems and services are best carried out by the private sector." New Zealand abolished the Ministry of Works and Development with 10,000 employees in 1988 and created a new agency with 2,000 employees.

With the reforms in place, the Ministry of Transport could focus on policy advice, legislation, and industry

***Figure 20—Florida has the fewest DOT staff per population among the three most-populous states, while Florida's transportation statutes offer the agency the most flexibility.***

| | Full-time Equivalent Staff | Staff per 100,000 State Population (Lower = less govt.) | Staff Level Relative to Texas | 2012 State and Local $ Spent on Construction & Maintenance Per Staff | Dollars per Staff Relative to Texas | Lane Miles per Staff (Higher = leaner staff relative to road network) | Lane Miles per Staff Relative to Texas |
|---|---|---|---|---|---|---|---|
| **California** | 23,000[72] | 60 | +30% | $264,560 | -70% | 17 | -69% |
| **Texas** | 12,087 | 46 | – | $885,278 | – | 56 | – |
| **Florida** | 6,935[73] | 36 | -23% | $775,317 | -12% | 39 | -30% |

concerns. Rather than allowing politicians to determine transportation priorities, New Zealand instituted a process of looking at the rates of return for every project.[72] According to former New Zealand parliament minister Maurice McTigue, "Determining the rate of return criteria is complex and needs to include recognition of topography, climatic conditions, socio-economic conditions, remoteness, scenic/tourist factors, traffic volume, congestion, emergency considerations, etc. Once determined the criteria becomes absolute with no exemptions granted and changes only possible by statutory change after adequate consultation with all affected parties."[73]

How might these lessons be applied at TxDOT? Rather than continue with the "fund and provide" method of transportation infrastructure in Texas, privatizing and outsourcing the TxDOT capabilities through private concessions could be considered.

Of metropolitan areas with at least one million people, Austin was the fastest growing in America, and Houston, Dallas and San Antonio also made the top ten.[74] Keeping up with this growth by proportionately increasing spending on roads will help to an extent, but the strategy is inefficient if wed to the same process while lacking demand management strategies to reduce congestion.

Contracting out some, if not most, of TxDOT's divisions to private bidders; specifically Design-Build-Finance-Operate (DBFO) concessions may be a solution.

TxDOT has recognized the effectiveness of privatization and has just recently partnered with an outside firm to meet its IT needs in an effort to streamline IT operations and reduce costs.[75] Doing the same for designing, building, and maintaining a portion of the roads under its purview may result in improved efficiencies.

DBFO concessions could be set up through a five-year pilot program operated within four of TxDOT's current 25 districts. Selection of the districts would be delegated to the four regional directors, who each would decide which district in their respected region would best be suited for the pilot. Upon observing the financial benefits of the pilot program and the promotion of improved roadway efficiencies, commute times, and maintenance levels, district managers in collaboration with local planning organizations, would bid with the regional director for implementation in their district.

The pilot program would allow collaboration between TxDOT and private contractors to legally agree upon specific conditions relating to design, development, maintenance, and operation of transportation infrastructure. These agreements are typically referred to as "public-private partnerships," although TxDOT denotes them as "comprehensive development agreements" (CDAs).[76] CDAs have been used in Texas for toll roads and for design-build contracts. Because of this, the public frequently conflates CDAs with toll roads—they are not synonymous.

This pilot program would allow locally controlled and issued solicitation reports concerning a proposed CDA that would result in the issue of a cost-plus-incentive-fee contract that would incentivize the contractor to bring in the project under budget. Rather than re-depositing funds back into the general revenue, savings would be distributed to the individual districts first, to be used at their discretion for transportation projects. If a surplus is created by the savings, it would be allocated within the region under the guidance of each regional director within that district.

DBFOs could be funded through a mechanism known as "shadow tolls." Shadow tolls are a system where the government pays a contractor to design, build and maintain, or simply to maintain, a road based on that road's use rather than directly collecting tolls from the driving public. Contracts using shadow tolls were being implemented in the U.K., Finland, Portugal and Uruguay as of 2006.[77] The Arizona State Highway System compared highway use to construction expenditures from 1986 to 1998 using a system of implied shadow tolls to determine the transportation value.[78]

The piloted districts should be exempted from the statutory restrictions found within Texas Transportation Code, Title VI Chapter 223.242, Scope of and Limitations on Contracts.[79] Without these exemptions, the pilot would not have the needed flexibility to be effective. Metrics to determine effectiveness of each CDA must be established. Mobility reports relating to congestion rates, costs of projects, and duration of projects should be considered when assessing individual CDAs.

## Allow Toll Revenue to be Used Solely for the Building and Maintenance of the Road Being Tolled

In 2013, 14 toll facilities in Texas collected almost $1.2 billion in toll revenues. Of this revenue, $552.4 million was collected in the Dallas-Ft. Worth Metroplex, $504.5 million in the greater Houston area, $136.1 million in the greater Austin area, $1.1 million in El Paso and $0.7 million in Tyler.[81] This means that 99.8 percent of all tolls are collected in just three metropolitan areas where 57 percent of Texans call home.

But, are tolls collected in an equitable fashion from a regional standpoint? *Figure 21* examines this question.[82] It compares 2013 toll revenue by metro area as a share of the total in Texas and compares it to the metro area's share of population growth from 2000 to 2013 and 2010 to 2013. *Figure 21* shows that, since 2000, 99.9 percent of Texas' growth occurred in only three areas: Austin, the Dallas-Ft. Worth Metroplex, and the greater Houston area. In the 2010 to 2013 timeframe, we see that the three most rapidly growing metropolitan areas accounted for 72.5 percent of Texas' growth, which would indicate that current toll road revenue appears to be slightly higher in Dallas and Houston than those areas' share of recent growth. Of course, borrowing money, building, and operating a toll road is a multi-decade proposition.

Further, in recent years, what had been a decline of population in Texas' rural areas has been reversed, largely by the increase in oil and gas extraction activities.

So, if toll roads were a response to a rapidly growing state, then the portion of toll road revenue collected in those areas appears to closely match those areas' collective share of the state's growth.*

*Figure 22* summarizes Texas toll authorities and roads open to the general public (excluding metropolitan rapid transit authorities and their high occupancy/toll and express toll lanes [HOT Lanes]).[80]

*Figure 23* lists constituted toll authorities without any current toll roads or projects under construction.

County toll authorities under are authorized under the Transportation Code, Chapter 284[83]; regional toll authorities under Chapter 366[84]; and regional mobility authorities under Chapter 370.[85] *Figure 24* compares various key powers of these three tolling agency chapters of the law. One significant weakness in the provision for regional mobility authorities is that the law allows these governmental units to raise revenue off of toll roads, or to toll existing non-toll roads, and then direct a portion of that money to non-road projects, such as light rail service. The Legislature should eliminate this feature of the law.

***Figure 21—Texas toll revenue closely reflects state population growth patterns.***

| Metropolitan Area | 2013 Tolls in Millions | Toll % of 2013 Total | April 2000 Population | April 2010 Population | July 2013 Population | 13-Year Pop. Change | Share of TX Growth Since 2000 | 3-Year Pop. Change | Share of TX Growth Since 2010 |
|---|---|---|---|---|---|---|---|---|---|
| Austin | $ 136.1 | 11.4% | 1,249,763 | 1,716,286 | 1,883,051 | 633,288 | 11.3% | 166,765 | 12.8% |
| Dallas-Ft. Worth Metroplex | $ 552.4 | 46.2% | 3,451,246 | 6,426,210 | 6,810,913 | 3,359,667 | 60.0% | 384,703 | 29.5% |
| El Paso | $ 1.1 | 0.1% | 679,622 | 804,123 | 831,036 | 151,414 | 2.7% | 26,913 | 2.1% |
| Houston | $ 504.5 | 42.2% | 4,715,402 | 5,920,456 | 6,313,158 | 1,597,756 | 28.5% | 392,702 | 30.1% |
| Tyler | $ 0.7 | 0.1% | 174,706 | 209,714 | 216,080 | 41,374 | 0.7% | 6,366 | 0.5% |
| San Antonio | $ - | | 1,711,716 | 2,142,508 | 2,277,550 | 565,834 | 10.1% | 135,042 | 10.4% |
| Brownsville-Harlingen | $ - | | 335,227 | 406,220 | 417,276 | 82,049 | 1.5% | 11,056 | 0.8% |
| McAllen-Edinburg-Mission | $ - | | 569,463 | 774,769 | 815,996 | 246,533 | 4.4% | 41,227 | 3.2% |
| Remainder of Texas | $ - | | 7,963,883 | 6,745,275 | 6,883,133 | (1,080,750) | -19.3% | 137,858 | 10.6% |
| Texas Total | $1,194.8 | | 20,851,028 | 25,145,561 | 26,448,193 | 5,597,165 | | 1,302,632 | |

*An alternative response to increase road capacity in a rapidly growing state might have been to levy development fees for new construction or an increase general fund support of transportation—the latter was funded largely through long term borrowing via Propositions 12 and 14.

***Figure 22—Texas has about 500 miles of toll roads, mainly in three metro areas: Houston, the Metroplex, and Austin.***

| Toll Road Entity/Segments | Metro | Miles | Type | Year |
|---|---|---|---|---|
| **Public/Private Partnerships between the State and Private Industry** | | | | |
| SH 130 Concession Company | Austin | 86 | Private/DOT | 2006 |
| ● SH 130, Segments 5 and 6 | | | | |
| **Statewide Toll Authorities/TxDOT in Cooperation with Local Agency** | | | | |
| Central Texas Turnpike System | Austin | 73 | TxDOT | 1985 |
| ● SH 130, Segments 1-4, Loop 1, SH 45N, SH 45SE | | | | |
| Fort Bend Grand Parkway Toll Road Authority | Houston | 12 | County Govt./TxDOT (portion) | 2009 |
| ● SH 99 Grand Parkway, Segment E and I-2 (tolled areas) (Portion of I-2) | | | | |
| TxDOT | Dallas | 2.5 | TxDOT | 2009 |
| ● DFW Connector | | | | |
| ❍ North Tarrant Express, Segment 3A & 3B (I35W), Segments 1 & 2W (under construction) | | | | |
| ❍ I-635 LBJ Managed Lanes (under construction) | | | | |
| ❍ SH 99 (Grand Parkway), Segments F1, F2 & G (under construction) | | | | |
| ❍ I35E Managed Lanes (under construction) | | | | |
| **Regional Mobility Authorities** | | | | |
| Central Texas Regional Mobility Authority | Austin | 18 | Regional Government | 2002 |
| ● US183A | | | | |
| ● US 290/183 Interchange | | | | |
| ❍ US 290E (under construction) | | | | |
| ❍ Loop 1 (Mopac Improvement Project) (under construction) | | | | |
| Northeast Texas Regional Mobility Authority | Tyler | 18 | Regional Government | 2004 |
| ● Toll 49 | | | | |
| Cameron County Regional Mobility Authority | Brownsville | 9 | Regional Government | 2004 |
| ● SH 550 Overpass (Phase 1) | | | | |
| ❍ SH 500 (under construction, managed by TxDOT) | | | | |
| Camino Real Regional Mobility Authority | El Paso | 7 | Regional Goverment | 2007 |
| ● Cesar Chavez Expressway | | | | |
| Webb County–City of Laredo Regional Mobility Authority | Laredo | 22 | TxDOT/Regional Goverment | 2014 |
| ● Camino Colombia Toll Road (SH 255) | | | | |
| **County Toll Authorities** | | | | |
| Harris County Toll Road Authority | Houston | 132 | County Goverment | 1983 |
| ● Sam Houston Tollway | | | | |
| ● Hardy Toll Road | | | | |
| ● Westpark Tollway | | | | |
| ● Sam Rayburn Tollway/SH 121 | | | | |
| ● Katy (I-10) Managed Lanes | | | | |
| Fort Bend County Toll Road Authority | Houston | 12 | County Goverment | 2000 |
| ● Westpark Tollway | | | | |
| ● Fort Bend Parkway Toll Road | | | | |
| ● SH 99 Grand Parkway Segment D (tolled lanes) | | | | |
| **Regional Toll Authorities** | | | | |
| North Texas Tollway Authority | Dallas | 90 | Regional Goverment | 1953, 1997 |
| ● Dallas North Tollway | | | | |
| ● President George Bush Turnpike (Eastern Extension) | | | | |
| ● President George Bush Turnpike (Western Extension) | | | | |
| ● Sam Rayburn Tollway/SH 121 | | | | |
| ❍ Chisolm Trail Parkway (under construction) | | | | |

## Focus Tax Dollars on Roads and Buses, Not Rail

As presented earlier in *Figure 10*, TxDOT's draft 2040 plan projects a 118 percent statewide increase in requirements for mass transit and a 153 percent increase in transit rail outlays to meet demand through 2040. TxDOT spends very little from its budget on either category of mass transit spending. The passenger rail forecast, $21 billion total by 2040, may simply reflect a roll up of known requests from the local level rather than TxDOT's careful consideration of the most cost-effective way to move Texans.

In November 2014, voters in Austin, Texas, rejected a local ballot initiative, Proposition 1, by 57 percent to 43 percent.[86] If approved, the initiative would have authorized $1 billion in debt of which $600 million was to be allocated to build a 9.5 mile-long electric train that would have mainly served current bus riders, adding only 6,500 net boardings by 2030. The project would have disrupted vehicle traffic along some existing roadways and bridges and would not have reduced commuting time on Austin's main arterials. The cost, if approved, would have run $217 per year in additional property taxes for the average priced home by 2020, just for the rail portion, plus another $145 per year for the road portion of the bonds for a total of about $362 per year.[87] Overall, the project was slated to cost about $1.38 billion, in 2020 dollars (some of the cost includes land donated by government agencies) with an operating cost of $22 million per year during its first year of operation in 2022.

***Figure 23—There are seven authorities across the state with no toll roads and no projects under construction with the regional authorities possessing unique powers to use toll road revenue to create light rail projects.***

| Toll Road Entity | Metro | Miles | Type | Year |
|---|---|---|---|---|
| **Regional Mobile Authorities** | | | | |
| Alamo Regional Mobility Authority | San Antonio | 0 | Regional Government | 2003 |
| Grayson County Regional Mobility Authority | Sherman | 0 | Regional Government | 2004 |
| Hildago County Regional Mobility Authority | McAllen | 0 | Regional Government | 2005 |
| Sulphur River Regional Mobility Authority | Parios | 0 | Regional Government | 2012 |
| **County Toll Authorities** | | | | |
| Montgomery County Toll Road Authority | Houston | 0 | County Government | 2005 |
| Brazoria County Toll Road Authority | Houston | 0 | County Government | 2003 |
| Collin County Toll Road Authority | Dallas | 0 | County Government | 2010 |

***Figure 24—Regional mobility authorities can direct toll revenue to other projects, such as light rail.***

| | County Toll Authority | Regional Toll Authority | Regional Mobility Authority |
|---|---|---|---|
| Transportation Code | Chapter 284 | Chapter 366 | Chapter 370 |
| Jurisdiction | County | Two or more counties | One or more counties or border city of at least 105,000 people |
| Project authority beyond roads? | Yes, highway, causeway, bridge, tunnel, turnpike, ferry and supporting projects | No, only highway, bridge, tunnel, and supporting projects (toll plaza, parking, etc.) | Yes, including: ferries, airports, bikeways, and intermodal hubs where cargo containers can be transferred, and rail, including passenger |
| Board governance | Cty. commissioner courts creates | Governor appoints one board member, county commissioners courts appoint one each, others by formula | Governor appoints chairman, county commissioners court appoints minimum of two |
| Surplus revenue uses | Can be used to design, build or repair roads, streets, highways, or other related facilities that are not part of a toll project | May be used for non-toll roads that enhance traffic to toll road, mitigate toll road impacts, don't reduce overall revenue of any toll road | May be used for any transportation projects, including rail, used to reduce tolls, or sent to the Texas Mobility Fund (which incentives the first two uses) |
| Limit on toll agreements | 50 years | 52 years | 52 years |
| Eminent domain power | Yes | Yes | Yes |
| Authority to toll existing free roads | No | Yes | Yes |
| Affirmative action contracting | Yes, for counties with a population of 3.3+ million | Yes | Yes |
| Design-build | Not specified | Yes | Yes, no more than two per year |
| Comprehensive development agreements | Yes, in manner consistent with Chapter 233 or 366 | Yes | No, authority expired in 2011 |

With such a low return on investment, $1.38 billion to attract 6,500 net daily boardings for a cost of $29 in capital outlay for every new passenger boarding in a 20-year period, the question is why would officials in the City of Austin ever propose such a project? In large part, Austin's Proposition 1 was a child of the Federal Transit Administration and its New Starts program. If Austin's light rail project won a New Starts matching grant, it was in line to receive $700 million on top of the city's $700 million share.[88]

To soften voters up before the initiative was placed on the ballot, more than $157,000 of tax money was spent on advertising by Project Connect, an initiative of the City of Austin and Capital Metro, of which about $125,000 was federal money.[89] Once the initiative was qualified, another $700,000 was spent to pass it, with most of the money coming from narrow interests who stood to profit from the creation of the train line.[90]

Further, as we saw in *Figure 24*, state law authorizing regional mobility authorities such as the Central Texas Regional Mobility Authority, allows these governmental units to use toll revenue to finance other projects, such as light rail or even convert existing roads into toll roads and use that new revenue stream to fund light rail. Project Connect, or something like it, could have been adopted as a project of the Central Texas Regional Mobility Authority.

The New Starts program was created by Congress in 1991. Rather than using a set formula to disburse federal funds, as is done for most federal funds sent to the states for roads and buses, New Starts grants funds to local agencies "…based on a comprehensive review of its mobility improvements, environmental benefits, cost effectiveness… …congestion relief, (and) economic development effects." (The phrase "operating efficiencies" had been part of the original mandate in 1991, but was removed in a 2012 amendment.)[91] In criticizing New Starts, the Cato Institute notes that it incentivizes the construction of new urban rail systems that end up reducing transit mobility by shifting resources from bus service in low-income neighborhoods that rely on publicly-subsidized transit to passenger rail in higher income areas where such services are a nice extra. Further, Cato claims that planning documents for New Starts projects often show that the funded projects would make congestion worse while increasing energy use and air pollution.[92]

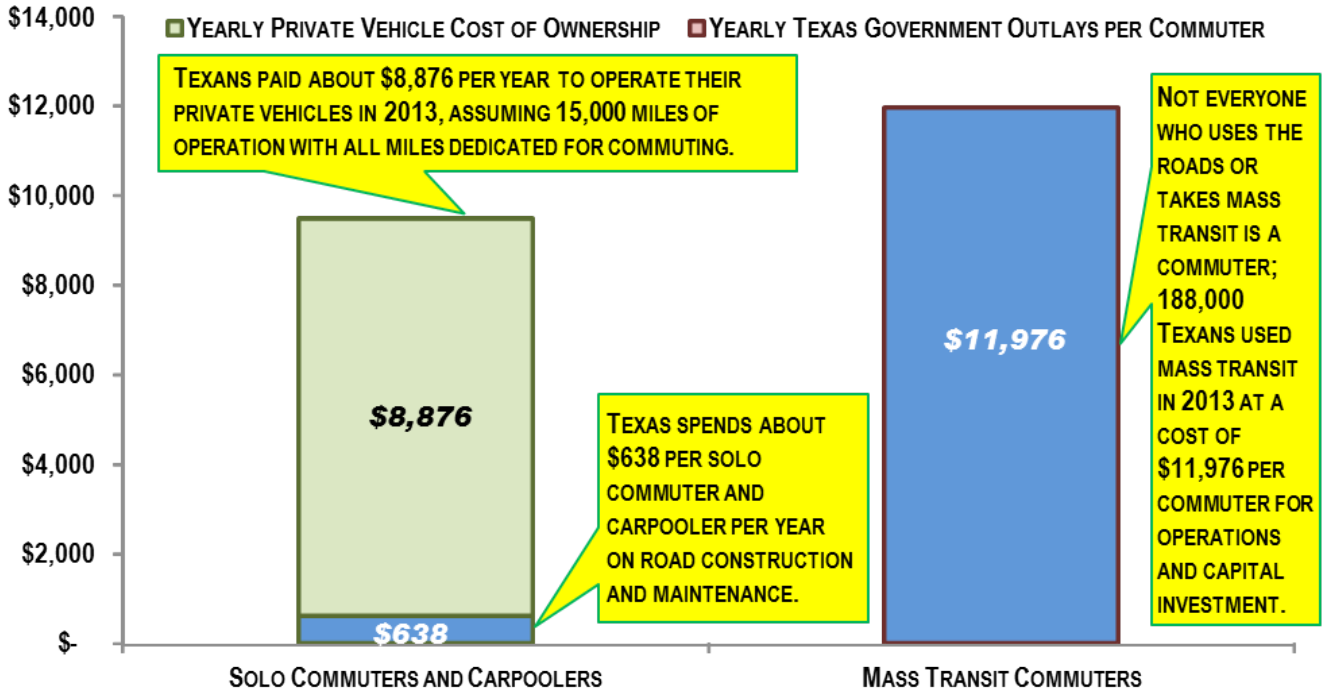
The challenge for Texas policymakers is what to do about federal programs such as New Starts—programs that promise millions in "free" federal money that end up costing Texans real tax money in upfront costs and years of operating costs. For every dollar of tax money diverted into inefficient urban rail programs, that's a dollar kept out of taxpayers' pockets and the private economy. Alternatively, it's a dollar of taxes not put into road construction and true congestion relief. This raises the question: might Texas end up with more money to spend on building greater transportation capacity if the state declined to participate in the New Starts program? The basic math suggests the answer is a resounding "yes."

For many urban planners, reducing vehicle miles is a goal unto itself (though few are willing to recommend congestion pricing) and this is a major driver of urban rail project plans. There has been a proliferation of metropolitan planning organizations in the U.S. with stated goals to reduce vehicle miles. But, none of these plans have produced enough data to actually see if they have been able to reduce vehicle miles while maintaining economic growth.[93] As a general rule, the plans include long-adopted policies: transportation demand management, land use planning coordinated with transportation, and greater use of walking and bicycling.

For instance, the City of Austin's 2035 Regional Transportation Plan states that to reduce VMT's it will "use transportation investments to support continued reduction of per capita vehicle miles traveled" while trying to "maximize the economic competitiveness of the region." These goals are rather amorphous and lead to projects such as Austin's Project Connect, a $1.38 billion project that, according to a 68-page economic impact report commissioned by the City of Austin, would generate $852 million in new property value.[94] Interestingly, the report made no mention of how the light rail project would disrupt vehicular traffic and actually lengthen overall commutes, thereby harming the local economy.

As a general rule, government-subsidized mass transit is costly, at least when examining cost to the taxpayers to move commuters. *Figure 25* displays the costs to move 11.9 million commuters in Texas in 2013.[95,96] Of these commuters, 9.6 million drive alone with their privately-owned vehicles, 1.3 million carpool, and 188,000 use mass transit. Texas commuters who operate their own vehicle pay for its acquisition and maintenance costs, about $8,876 per year, make up 98.3 percent of commut-

***Figure 25—Trying to solve Texas commuting challenges with mass transit may turn out to be a prohibitively costly proposition. Mass transit exists primarily as a transportation subsidy to Texans who cannot afford to operate a private vehicle.***




ers who get to work using motorized transport. As a result, their large numbers bring down the per capita costs of maintaining the road system (assuming everyone on the road is a commuter) to $638 per year. In contrast, the 188,000 Texas commuters who use mass transit don't achieve an economy of scale, costing almost $12,000 per commuter, assuming all mass transit costs are assigned to commuters and that none of the costs to build and maintain the general road network are assigned to mass transit users.

Given mass transit's large costs to the taxpayer and its lack of significant effect in reducing congestion—it mainly serves as a subsidy to people for whom private vehicle costs are prohibitive—it is all the more important that mass transit dollars that are spent are spent most efficiently. Further, urban rail lines tend to serve middle to upper-class neighborhoods and, once fixed, cannot be moved to adjust to changes in population centers. To that end, bus service, and not rail, provides the highest return on investment as well as flexibility. ☆

## NOTES

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[8] Ibid.

[9] Ibid.

[10] 2015 Unified Transportation Program," Version August 7, 2014, Texas Department of Transportation, page 9-10 of 15, see: http://ftp.dot.state.tx.us/pub/txdot-info/tpp/utp/2015/2015_utp.pdf.

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## About the Author

**The Honorable Chuck DeVore** is vice president of policy at the Texas Public Policy Foundation where he authored the book, "The Texas Model: Prosperity in the Lone Star State and Lessons for America."

From 2004 to 2010, DeVore represented almost 500,000 people in the California State Assembly. He was vice chairman of the Assembly Committee on Revenue and Taxation and vice chairman of the Veterans Affairs Committee and served on the Budget Committee as well as the Joint Legislative Audit Committee. He was named Legislator of the Year by seven groups.

DeVore worked in the aerospace industry for 13 years as an executive before his election in 2004. He also served as a Reagan White House appointee in the Pentagon from 1986 to 1988 as Special Assistant for Foreign Affairs.

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