

# policy STUDY



## The Role for Public-Private Partnerships in Modernizing and Expanding Nebraska's Transportation System



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## **EXECUTIVE SUMMARY**

The global environment for transportation policy is entering a new paradigm. Like many states, Nebraska finds itself at the convergence of two intersecting trends that demand attention. First, growing transportation needs are outstripping available capacity, and second, the need for maintenance and renovation of existing systems is eating up available financial resources. A failure to address these twin challenges will lead to even greater congestion in various forms and lowered reliability of service in the future. By any measure, these realities impact Nebraska's economic competitiveness and its citizens' quality of life.

Nebraska has made major strides in improving its highway system in recent years, but the state's looming transportation funding gap threatens to unravel these gains. Further, absent new funding and procurement mechanisms, Nebraska would be faced with having to close the infrastructure funding gap without some of the tools available to other states. The transportation challenges are confronting a state that is unable to deal with them outside of the traditional means of gas taxes, vehicle fees, and government subsidies, which challenge the ability of the state to keep the overall transportation system ahead of the curve.

To keep Nebraska moving forward and position itself for the modern economy, the state will need to adopt successful transportation strategies from other states and strive to innovate in ways that will best serve Nebraskans. Even though the vast majority of transportation projects around the country continue to be funded from traditional sources—gas and vehicle taxes—a new funding paradigm is rapidly emerging. State and local transportation agencies are increasingly looking to supplement these sources with private investment through public-private partnerships (PPPs). PPPs are just one “tool in the box,” but this promising and valuable option available to policymakers has been relatively untapped in Nebraska.

PPPs offer a way to leverage private capital and expertise to provide a public service, and states are increasingly using them to deliver needed new transportation capacity while

stretching limited taxpayer dollars. Although often thought of simply as “private toll roads”, transportation PPPs actually allow for many options to finance, construct and/or maintain new and enhanced transportation facilities. PPPs come in many forms, including the development of new infrastructure, the maintenance of existing infrastructure, and the operation of existing services. PPPs are never going to completely replace the traditional means of funding transportation, but they are a very promising method in which to augment traditional transportation revenue sources and provide more transportation project delivery options and cost savings to Nebraskans.

Nebraska currently lacks broad enabling legislation for these partnerships. Over the last two decades, over half of the states have now adopted legislation authorizing the use of PPPs for the design, construction, financing, and operation and maintenance of transportation facilities. Workable legislation is generally needed to entice private sector investment. The reality is that transportation projects are going to states like Virginia, Florida, and Georgia that have created a solid legal foundation for PPPs—where the law facilitates PPPs and where private investment and participation is welcomed and embraced.

Nebraska policymakers should embrace the considerable potential of the emerging PPP paradigm for highway funding and operations. Policymakers are no longer forced to choose between increasing costs to taxpayers or reducing services to motorists. PPPs, when implemented properly and carefully, can benefit both the State and its citizens. Opportunities for PPPs exist in Nebraska in many important facets of transportation, including constructing new highways, building new bridges, and competitive contracting for additional local and state road maintenance and operations. In fact, PPPs may offer a viable means of financing some of the state’s large-scale capital improvement projects that currently lack a funding source, such as the \$175 million Highway 2/Lincoln South Beltway project and the \$145 million Highway 34/75 Missouri River Crossing.

Embracing PPPs would represent a new way of thinking for Nebraska and can help the state address its looming transportation funding shortfall in order to keep people and goods—and ultimately the state economy—moving forward.

## I. Introduction

The global environment for transportation policy is entering a new paradigm. Like many states, Nebraska finds itself at the convergence of two intersecting trends that demand our attention. First, growing transportation needs are outstripping available capacity, and second, the need for maintenance and renovation of existing systems is eating up available financial resources. A failure to address these twin challenges will lead to even greater congestion in various forms and lowered reliability of service in the future. By any measure, these realities impact Nebraska's economic competitiveness and its citizens' quality of life.

Nebraska has made major strides in improving its highway system in recent years, but the looming transportation funding gap threatens to unravel these gains. Further, absent new funding and procurement mechanisms, Nebraska would be faced with having to close the infrastructure funding gap without some of the tools available to other states. The transportation challenges are confronting a state that is unable to deal with them outside of the traditional means of gas taxes, vehicle fees, and government subsidies, which challenge the ability of the state to keep the overall transportation system ahead of the curve.

To keep Nebraska moving forward and position itself for the modern economy, the state will need to adopt successful transportation strategies from other states and strive to innovate in ways that will best serve Nebraskans. The challenge is not as difficult as some perceive, but fundamental reforms and innovative thinking will be necessary to help Nebraska achieve its desired ends. How? If we take a global perspective, the answer becomes more clear—government should strongly consider the exciting possibilities offered by partnering with the private sector.

Even though the vast majority of transportation projects around the country continue to be funded from traditional sources—gas and vehicle taxes—a new funding paradigm is rapidly emerging: State and local transportation agencies are increasingly

looking to supplement these sources with private investment through public-private partnerships (PPPs). PPPs are just one “tool in the box,” but this promising and valuable option available to policymakers has been relatively untapped in Nebraska.

What is a PPP? According to the National Council for Public-Private Partnerships,

*A PPP is a contractual agreement between a public agency (federal, state or local) and a private sector entity. Through this agreement, the skills and assets of each sector (public and private) are shared in delivering a service or facility for the use of the general public. In addition to the sharing of resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility.<sup>1</sup>*

Recently, voices throughout the country have begun to call for greater attention to the possibilities offered by PPPs in meeting state transportation needs. PPPs offer a way to leverage private capital and expertise to provide a public service, and states are increasingly using them to deliver needed new transportation capacity while stretching limited taxpayer dollars.

Although often thought of simply as “private toll roads”, transportation PPPs actually allow for many options to finance, construct and/or maintain new and enhanced transportation facilities. PPPs come in many forms, including the development of new infrastructure, the maintenance of existing infrastructure, and the operation of existing services. PPPs are never going to completely replace the traditional means of funding transportation, but they are a very promising method in which to augment traditional transportation revenue sources (primarily fuel taxes, vehicle registration fees, development impact fees, and/or local option sales taxes) and provide more transportation project delivery options and cost-savings to Nebraskans.

Nebraska currently lacks broad enabling legislation for these partnerships. The modern use of public-private partnerships in the transportation arena in the United States originated over 15 years ago with California’s enactment of AB 680 and adoption by

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<sup>1</sup>National Council for Public Private Partnerships website ([ncppp.org](http://ncppp.org))

the Commonwealth of Virginia of its Public-Private Transportation Act of 1995. Since the passage of these two enabling statutes, over half of the states have now adopted legislation authorizing the use of PPPs for the design, construction, financing, and operation and maintenance of transportation facilities. Workable legislation is generally needed to entice private sector investment. The reality is that transportation projects are going to those states that have created a solid legal foundation for PPPs—where the law facilitates PPPs and where private investment and participation is welcomed and embraced.

The following sections describe the transportation funding context in Nebraska and explore how PPPs can be used to upgrade, modernize and expand the state's road and bridge network.

## **II. Nebraska Transportation Funding Overview**

Nebraska's first county road legislation predates statehood and was passed by the Territorial Legislature on January 26, 1856 in recognition of the need to develop roads to connect the settlements. The legislation granted road development authority to county commissioners, authorizing them to impose taxes and procure the necessary construction and maintenance.

The first state agency in Nebraska with responsibility for roads was the State Board of Irrigation, created in April 1895. As part of the mission of supervising irrigation practices, the Board was charged with overseeing the state aid bridge plans and specifications.

With the advent of the automobile, the Board began to increasingly address roadway issues and sought legislation regarding motor vehicles. Legislation passed in 1905 provided for a \$1 motor vehicle registration fee and outlined safety issues such as vehicle speeds near horses and the use of brakes, signals and lights. By 1911, the legislature had renamed the agency the State Board of Irrigation, Highways and Drainage and expanded its responsibilities to include road construction and maintenance. Vehicle registration fees were subsequently increased to \$2.00 and given to the county road funds. In 1913, the Board was composed of the Bureau of Roads, the Bureau of Irrigation, Water Power and Drainage and the Motor Vehicle Records Division. After many variations over the years applying different names to virtually the same configuration, in 1967 the Legislature formally established the Nebraska Department of Roads (NDOR), the Nebraska Department of Motor Vehicles, and the Nebraska Department of Water Resources. In 1981, the Legislature made the Nebraska State Patrol a separate agency.

Today NDOR is responsible for planning, development, design and maintenance of the state highway system, including 9,959 miles of highways (482 miles of which are Interstates) and 3,515 bridges.

### **A. State and Local Transportation Funding**

Like many states, Nebraska's highway trust fund relies on traditional transportation revenue sources—primarily fuel taxes (gasoline, diesel and gasohol), motor vehicle

registration fees and sales taxes on new and used motor vehicles, trailers and semi-trailers—to fund the state's transportation program. The state fuel tax is 26.4 cents per gallon, the highest rate of surrounding states (see Table 1).

**Table 1.**

State	State Controlled mileage	Gasoline Tax	Diesel Tax (cents/gallon)	Toll Road Mileage	Toll Bridges	Maintenance Disbursements / Mile
Nebraska	10,225	26.4 Rate adjusted every 6 months based on average fuel costs	26.4	None	3 locally operated toll bridges	\$10,547
Iowa	9,284	21 Rate adjusted in July based on ethanol being sold	22.5	None	4 privately operated toll bridges	\$15,690
Kansas	10,546	24	26	236	None	\$15,457
Colorado	10,356	22	20.5	6.6 miles state toll road; 47 miles locally operated toll roads	None	\$33,085
Missouri	33,681	17	17	None	1 locally operated bridge	\$13,770
Wyoming	7,467	14	14	None	None	\$13,483
South Dakota	8	22	22	None	None	\$7,422

Fuel taxes provide approximately 57 percent of Nebraska's state highway user revenues, with sales taxes providing another 31 percent and registration fees adding 12 percent.

The highway trust fund is shared between the state, counties and cities. Local governments share with the state in the principal revenue sources that flow into the Highway Trust Fund: fuel taxes, the motor vehicle registration fees and the sales tax on vehicle purchases. That revenue is shared on the basis of 53.3 percent to the state, 23.3 percent to the counties and 23.3

percent to the cities. The state's fixed gas tax was reset in July 2009 with a 7.5 cent/gallon tax distributed 100 percent to NDOR and a 2.8 cent/gallon tax distributed to cities and counties on a 50/50 split. The state also collects a variable gas tax--100 percent of the revenues of which are distributed to NDOR--which is adjusted twice during each fiscal year. The state also began collecting a wholesale tax on fuel in 2009, also adjusted twice per fiscal year. Revenues from the wholesale fuel tax are distributed 66 percent to NDOR and 34 percent to cities and counties (split 50/50).

## **B. Federal Funding**

Historically federal funds are based on a multi-year transportation act as enacted by Congress. The current transportation law (referred to as SAFETEA-LU) expired on September 30, 2009. Nebraska Department of Roads has assumed the that the current funding will be continued at the 2009 levels through fiscal year 2010 while the next authorization levels are worked out. In addition, Congress must deal with the solvency of the Federal highway trust fund and the provision in the current legislation which takes back some \$8.7 billion from the states. On the positive side of the ledger were the federal stimulus funds contained in the American Recovery and Reinvestment Act (ARRA) of 2009.

## **C. The Use of Tolls in Nebraska**

Whether financed and built by public or private sector entities, toll roads and bridges are stand-alone projects typically financed through toll revenue bonds and paid back over time through user fees (tolls) collected. Hence, they are not funded from the state highway trust fund like traditional "tax" roads. As such, the current transportation funding crisis experienced by many states is driving a renewed interest in tolling—either through public authorities or PPPs—as a means of delivering new infrastructure as traditional revenue sources (e.g. fuel taxes, etc.) are spread increasingly thin.

Currently, Nebraska has three toll bridges and no toll roads. The toll bridges all cross the Missouri River and are tolled in both directions with no electronic tolling. One is in the City of Bellevue (SR 370), another is in the Burt County connecting Decatur, Nebraska to Onawa, Iowa, and the third connects Plattsmouth, Nebraska to Mills City, Iowa. All three toll bridges are operated by the Nebraska Bridge Commission.

### III. ASSESSING NEBRASKA'S TRANSPORTATION NEEDS AND PERFORMANCE

*"All levels of government in the United States are failing to keep pace with the demand for transportation investment and increasingly must use existing revenues simply to attempt to keep pace with the preservation and maintenance of an aging system. This leaves few or no resources for vitally needed new capacity and other improvements to the system. As a result, congestion and system reliability have steadily worsened [...]. Calls for increased investment, new institutional approaches to funding and to building and maintaining the system, and technological innovation are mounting."*

—*Paying Our Way: A New Framework for Transportation Finance*, National Surface Transportation Infrastructure Financing Commission, February 2009

Like most states, Nebraska is wrestling with decreasing transportation revenues that fall short of identified needs. Highway revenues are not keeping pace with construction cost inflation, and the purchasing power of both Federal and state fuel taxes is expected to continue to erode in coming decades due to the increasing fuel efficiency of the national vehicle fleet (less fuel purchased equates to less fuel tax revenue generated). In many states, projected transportation revenues are not even sufficient to properly maintain the infrastructure currently in place, much less build the new highway capacity needed to improve mobility, reduce congestion and keep the economy moving.

"Highway funding has reached a crisis level in Nebraska," according to a 2009 legislative resolution introduced by Nebraska State Senator Deb Fischer, chair of the legislature's Transportation and Telecommunication Committee. "While revenue continues to decrease through less fuel consumption and less motor vehicle sales tax revenue, highway construction costs continue to increase."

The transportation funding trends in Nebraska were already evident in August 2007, when NDOR began to develop a new methodology of allocating system preservation

funds and prioritizing capital improvement needs. At the same time the state legislature assigned NDOR the task of reporting on the needs of the state highway system.

### **A. 2009 NDOR Needs Assessment**

In 1988 the Nebraska legislature passed a statute requiring NDOR to produce regular reports on the needs of the state highway system. The most recent report, NDOR's *2009 State Highway System Needs Assessment*, evaluated investment needs through year 2030 in six broad categories:

- Pavement preservation (addressing factors such as the extent and severity of pavement cracking, ride quality, etc.);
- Rural geometrics (e.g., addressing deficiencies in pavement width, shoulder width, number of lanes, vertical curves and the like);
- Urban needs (e.g., widening or reconstruction of urban highways);
- Missouri River bridges;
- Railroad crossings; and,
- Miscellaneous (planning, research, lighting and traffic signals).

The 20-year needs projection in each of these categories is shown in Table 2 below. The report identifies current needs for the next twenty years at \$9.1 billion (in 2009 dollars), which increased by nearly \$1 billion from the previous report in 2008. Adjusting for inflation, over the next twenty years the total cost of the 2009 needs are estimated to be \$13 billion (see Figure 1).

**Table 2. Summary of 2009 Nebraska Transportation Needs Assessment**

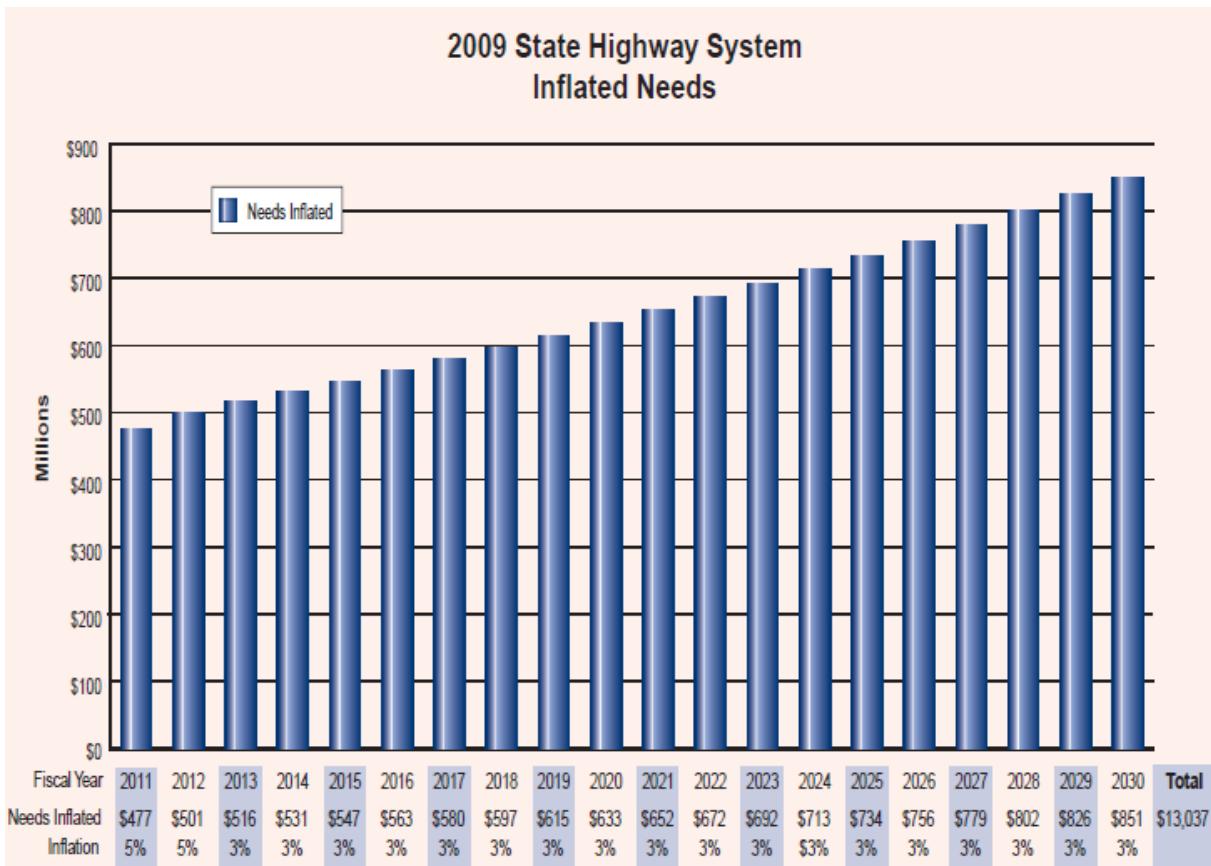
	2008	2009
Pavement Preservation	\$4,909,462,000	\$5,514,260,000
Rural Geometrics	*\$2,697,303,000	*\$2,837,490,000
Miscellaneous	\$195,490,000	\$196,420,000
Urban	\$232,307,000	\$327,736,000
Railroad Crossings	\$152,800,000	\$147,800,000
Missouri River Bridges	\$49,807,000	\$54,091,000
<b>TOTAL</b>	<b>\$8,237,169,000</b>	<b>\$9,077,797,000</b>

\* Includes costs for right-of-way, bridge, and municipal work.

Note: All values are in 2009 dollars.

Source: Nebraska Department of Roads, 2009 State Highway System Needs Assessment, p.7, <http://www.nebraskatransportation.org/needs/docs/needs-2009.pdf>

**Figure 1. State Highway System Needs, 2011-2030 (inflation-adjusted)**



Source: Nebraska Department of Roads, 2009 State Highway System Needs Assessment, <http://www.nebraskatransportation.org/needs/docs/needs-2009.pdf>

However, the needs identified in the six categories above do not tell the whole story. State highway maintenance and other programmatic support costs were not included in the calculation of the total 20-year needs, but NDOR's *2009 State Highway System Needs Assessment* offered estimates for the costs of these additional programs and services over a roughly equivalent time period:

- Routine maintenance requirements (system preservation, operations, snow and ice control, disaster operations, etc.) through 2029 were estimated to total \$2.7 billion.
- Administration, support services and capital facilities costs were estimated to total \$640 million through 2029.
- Needs in three other areas—construction overhead, public transportation assistance/rail planning, and the Carrier Enforcement Program—were estimated to total \$648 million through 2029.

In all, these programs are currently projected to add an additional \$4 billion to the \$13 billion in primary needs identified in the NDOR report.

Though NDOR's 2009 needs report does not project anticipated future funding levels, state officials expect highway user revenues to stay flat (at best) or, more likely, decline over the next two decades, at the same time that the projected costs of annual state needs are expected to rise consistently over the same period. According to NDOR's *2008 Annual Report*, “[w]ith stable to declining revenues, high inflation, erosion in purchasing power of the dollar and uncertainty of federal transportation dollars, the size of our State Highway Construction Program could decrease significantly in future years.”<sup>2</sup> Without an infusion of new revenues, it is unlikely that NDOR will be able to keep pace with the investments needed to sustain the state's transportation system performance.

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<sup>2</sup> Nebraska Department of Roads, *2008 Annual Report*, p. 26, <http://www.nebraskatransportation.org/docs/annual-report.pdf>

## **B. NDOR Funding Allocation Priorities**

Faced with the prospect of declining transportation revenues, in recent years the leadership of NDOR revamped its process for the allocation of funds for highway improvements. The first step of this process was to create a System Preservation and Optimization Team (SPOT) to evaluate the current process and make recommendations that would provide the citizens of Nebraska with a quality roadway system, regardless of the funding level. SPOT prepared a report for the NDOR administration and the Highway Commission that included a recommendation to adopt new minimum design standards and to use those standards as needs criteria to identify which road segments require improvement. The new standards were intended to bring Nebraska in line with American Association of State Highway and Transportation Officials (AASHTO) standards. The Highway Commission approved SPOT's recommended revisions to the needs criteria in March 2007.

Senior members of NDOR's management were subsequently assigned to establish priorities for expenditures and to recommend new procedures for allocating highway construction funds based on those priorities. This group, the Funding Distribution Team (FDT), issued a final report in December 2008 that recommended placing the highest priority to preserving the state's existing highways and bridges. Once asset preservation needs have been met, the next priority is to allocate funds to capital improvements. A new process for ranking capital improvements was also recommended, which involves a two-tier system based on the estimated economic benefit to highway users. In December 2008, the State Highway Commission approved Resolution No. 2008-02, authorizing NDOR to utilize FDT's proposed methodology of allocating system preservation funds and prioritizing capital improvement needs; these tools were utilized in developing the fiscal year 2010 program.

The new methodology for ranking capital improvement projects, based upon objective criteria, provides the state an important tool to assist the prioritization of preliminary engineering work and construction expenditures. Nebraska is among the first states to shift to the use of this type of methodology and may become a leader in this regard.

However, while it is certainly a sensible policy to prioritize the preservation and maintenance of existing transportation infrastructure, the practical impact of future funding shortfalls under the new funding allocation will thus be to limit the amount of funds available to invest in new transportation infrastructure.

Still, the importance of having objective prioritization criteria in place should not be underestimated, as politics and special interests tend to trump real transportation needs in Federal and state transportation decisionmaking. One need not look too far for examples, which include Federal earmarks, Bridges to Nowhere, investments in costly light- and heavy-rail systems that fail to enhance mobility, and disproportionate spending on rural road projects that draw funds away from major urban highway needs. In the world of transportation funding, political priorities tend to trump transportation priorities.

This is all a symptom of a larger disease—the political allocation of transportation funding. Tax receipts collected at the gas pumps in Nebraska flow to Washington D.C., where Congress plays a major role in deciding what amount of revenue is returned to states and what strings will be attached to it. For example, in the last federal Surface Transportation Reauthorization Bill we saw a record-high level of earmarks for over 6,000 projects totaling \$24 billion. These earmarks dedicate funding to specific transportation projects (usually at the behest of the state delegation) which tend to fund low-priority projects at the expense of high-priority ones. Many observers see earmarks as the transportation equivalent of pork-barrel spending.

The problems continue at the state level. State legislators often place a tremendous amount of pressure on transportation officials to spread already-limited transportation funds around to projects in every legislative district—rural, urban and in between. While it may be an understandable impulse for state legislators to try to “bring home the bacon,” so to speak, the pressure to fund every district’s basket leads to a vicious cycle. Spreading funds thinly across the state on the basis of political boundaries creates a perverse outcome—it becomes increasingly difficult for major, high dollar pro-

jects vital to mobility, congestion reduction and goods movement to get funded, at least on a meaningful time scale. As a result, major, needed urban and interstate highway projects routinely languish on the drawing board for decades, while empty highways get built in sparsely populated areas.

Nebraska is not immune to these pressures, as evidenced by recent debates over the 1988 expressway system, a plan to add 600 miles of expressways by 2004 to connect midsize cities to Interstate 80, largely on the grounds of economic development (as opposed to traffic volumes, improved mobility, congestion relief and/or cost-benefit analysis). Indeed, by definition many of these segments were not projected to have significant traffic volumes relative to other needed state transportation projects with higher cost-benefit ratios. Still, local politicians, business coalitions and civic leaders lobbied heavily for the expressway plan, which ultimately lacked sufficient funding to deliver (179 miles of the planned 600-mile system remain to be built). Those same interests have now returned to lobby for additional funding to complete the system at a time when funds are scarcer than ever.

Commenting before the Legislature's Transportation and Telecommunications Committee in February 2008 on a \$90 million project to build out 42 miles of US 81 (between Columbus and York and from Nebraska 64 to US 34), former Nebraska Governor Charlie Thone made a remark that could equally apply to many other similar projects—"Is this gap worthy of construction? [...] This should be unacceptable. A real revenue crisis threatens Nebraska highway construction."<sup>3</sup>

This same situation plays itself out to a greater or lesser degree in every other state. The final 2008 report of the National Surface Transportation Policy and Revenue Commission—established in 2006 by Congress to recommend sweeping reforms in light of the national transportation funding crisis—identified a need to overhaul state and metropolitan planning such that "major projects ...would have to be shown to be cost-

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<sup>3</sup> JoAnne Young, "City leaders ask lawmakers to prioritize expressway funding," *Lincoln Journal Star*, February 18, 2008. [http://www.journalstar.com/news/local/govt-and-politics/article\\_9234fe10-b6e6-5c5c-beb6-1dd0c0cbf519.html](http://www.journalstar.com/news/local/govt-and-politics/article_9234fe10-b6e6-5c5c-beb6-1dd0c0cbf519.html)

beneficial and plans would have to be developed to meet specific performance standards.” The lack of integration of performance-based thinking into transportation planning has become an increasingly popular target of reform advocates in recent years.

However, there have been some encouraging signs in recent years that signal an increasing awareness of state policymakers to the need to incorporate performance into transportation planning. For instance, in 2003 the Governor’s Business Council in Texas issued a transportation report that urged a primary focus on congestion reduction in order to maintain economic competitiveness. Governor Rick Perry championed the idea and directed the Texas Department of Transportation to work with metropolitan planning organizations (or MPOs, regional planning entities authorized by Congress to be the primary arbiter of transportation funding decisions in urbanized areas over 50,000 population) to advance what became known as the Texas Metropolitan Mobility Plan.

According to the plan, MPOs were asked to set aggressive targets for reducing congestion well below today's levels (not just slowing the rate at which congestion increases, which is what most MPOs are content with). They were then asked to develop realistic estimates of costs and funding strategies needed to achieve those congestion targets. Projects would be selected on ability to deliver the greatest reduction in congestion per dollar spent, and there would be no bias against transit projects if they could deliver cost-effective congestion reduction. However, most evidence suggested that what was needed in Texas were large-scale additions of highway capacity.

Similarly, Georgia Governor Sonny Perdue created a Congestion Mitigation Task Force that recommended setting an aggressive congestion-reduction target for Atlanta in 2030. They also revamped the project-selection criteria for long-range transportation plans to make congestion-reduction 70% of the project score (instead of 10%). All four principal transportation agencies in greater Atlanta signed on to this approach.

Also, in Washington State the state legislature directed the transportation department

to perform a congestion relief analysis in 2006. It found that congestion will worsen without substantial new capacity, that roadway improvements can effectively reduce delay, that modeling did not show transit to be effective in reducing congestion and that road pricing (through tolls or similar mechanisms) offers the most effective strategy for congestion relief. The following year, the State Auditor studied the state's performance at addressing congestion. The Auditor found a repeated failure to address congestion in a serious manner, despite the potential to reduce congestion by 15-20 percent in 5 years through sensible planning. Like Texas, the Washington State Auditor, recommended that the primary standard for selecting and ranking transportation projects should be hours of delay-reduction produced per each million dollars of investment. This approach would represent a vast improvement over politically-based decisionmaking, as it offers an objective and transparent means of separating high-priority, high-impact projects from those with lower economic value.

Similar standards may be worthy of consideration by NDOR and the Highway Commission for potential integration into the funding allocation analysis because, as the next section shows, congestion is likely to double in both Omaha and Lincoln by 2030 if current trends hold.

### C. Traffic Congestion in Nebraska

An independent Reason Foundation analysis of national congestion trends prepared by University of North Carolina-Charlotte professor David Hartgen in 2006 found that Nebraska has one city—Omaha—that currently suffers from severe congestion, which the study identified as those areas with Travel Time Indices (TTIs) of 1.18 or higher.<sup>4</sup> Omaha tied with three other areas (Nashville, Jacksonville, and Fort-Myers-Cape Coral) as the 49th most congested metropolitan region in the United States, with a Travel Time Index (TTI) of 1.18. However, unless major steps are taken to relieve congestion, drivers in this part of Nebraska can expect to see a TTI of 1.36 by 2030. For an idea of how severe that level of congestion would be, this projection is comparable to the traffic delays experienced today in congested cities like Phoenix, Dallas-Fort Worth, and Baltimore.

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<sup>4</sup> A TTI of 1.18 means that driving times during peak traffic are 18 percent longer than during off-peak times.

Lincoln is currently much less congested than Omaha, with a TTI of 1.05. However, the relative increase in delay projected by 2030 for Lincoln is 100 percent, which will be sharply felt by local commuters. With a TTI of 1.10, Lincoln would face future traffic delays similar to those currently experienced in much larger cities like Buffalo, Pittsburgh, and Cleveland.

Hartgen estimated that to significantly reduce Nebraska's most congested bottlenecks and prepare for growth expected by 2030, the state would need approximately 966 new lane-miles at a total cost of \$1.7 billion (2006 dollars). Nebraska ranked 29th out of 50 states and the District of Columbia in terms of most lane-miles needed and 33rd in the total costs of those improvements.

If the state made these improvements, it would save over 11 million hours per year that are now wasted in traffic jams. This does not account for the additional benefits not quantified in the study, including lower fuel use, reduced accident rates and vehicle operating costs, lower shipping costs and truck travel time reductions, greater freight reliability, and a number of benefits associated with greater community accessibility (including an expanded labor pool for employers and new job choices for workers).

Yet, given the state's highway funding shortfall and NDOR's funding allocation policy that prioritizes system preservation over new construction and other needs, the prospect for significant new highway capacity in Omaha and other areas seems very unlikely. Hence, absent new funding mechanisms or financing tools, drivers in Omaha can expect to spend roughly twice as long in traffic as they do today by 2030.

However, it should be noted that traffic congestion in Nebraska is largely a localized phenomenon confined to Omaha (and, to a lesser extent, Lincoln), and it is unlikely that other parts of the state will face serious congestion threats in the foreseeable future. Hence, while congestion relief is likely to become an increasingly important policy issue in Omaha and Lincoln, it is not expected to become a major issue outside those major metropolitan areas.

## **D. Performance of Nebraska's Highway System**

Though congestion looms as an increasingly relevant challenge for NDOR, the agency has made significant strides over the last several years to improve highway system performance.

Reason Foundation publishes an annual report ranking the performance of state highway systems; the 2008 edition tracks the performance of state-owned roadways from 1984 to 2006.<sup>5</sup> The report ranks states on cost-effectiveness, and twelve performance indicators make up each state's overall rating, such as highway revenues and expenditures, pavement and bridge conditions, congestion, accident rates, and narrow lanes. The study is based on spending and performance data submitted to the federal government by the state highway agencies.

Since the states have different budgets, system sizes, and traffic, comparative performance depends on both system quality and resources available. To determine relative performance, state highway budgets (per mile of responsibility) are compared with system performance, state by state. States ranked high typically have good-condition systems along with relatively lower costs—i.e., better outcomes for less money.

In the 2008 report, Nebraska was one of several states that improved its ranking sharply from the previous year, jumping 11 positions from 19th to 8th among all states. The performance indicators where Nebraska fared well were:

- Rural interstate in poor condition (tied for 1st);
- Maintenance disbursements per mile of responsibility (8th);
- Receipts per mile of responsibility (11th);
- Rural primary pavement narrow (11th);
- Capital disbursements per mile of responsibility (12th);
- Total disbursements per mile of responsibility (12th); and
- Urban interstate congestion (12th).

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<sup>5</sup> David T Hartgen and Ravi Karanam, *17th Annual Report on the Performance of State Highway Systems (1984-2006)*, Reason Foundation, 2008. Available at: <http://reason.org/news/show/17th-annual-report-on-the-perf>

Nebraska's jump from 19th to 8th in the national rankings was based on significant improvement in the rural interstate system, which was improved from 2.12 percent poor condition (36th) to 0.0 percent poor condition. Nebraska also improved its urban interstate condition from 14.0 percent poor (45th) to 9.8 percent poor (40th). Smaller gains were also made in urban congestion, deficient bridges, narrow lanes, and fatality rate. Nebraska's lowest rankings were for urban interstate condition (40th), deficient bridges (27th) and rural other primary pavement condition (28th).

In recognition of the state's sustained trend in lowering fatalities through significant investment in safety projects, the American Association of State Highway Transportation Officials presented a Safety Leadership Award to Nebraska in October 2009.

## **IV. THE ROLE FOR PPPS IN DELIVERING 21<sup>st</sup> CENTURY INFRASTRUCTURE**

The strides that Nebraska has made in recent years in improving its road and highway conditions are unsustainable given current funding trends. As the state's population grows and expands, increased demands will continue to be placed on the aging network of roads and highways. At the same time, state and local government entities are faced with uncertain fiscal conditions and the challenge of trying to do more with less. Further, there is little will among many politicians to support fuel tax or vehicle fee increases of any kind, especially in challenging economic times. With tax dollars already stretched thin, preventative maintenance is all too often put off for another day. Given these constraints, PPPs offer a viable alternative that can supplement current transportation funds and deliver the infrastructure Nebraska needs to thrive in the 21<sup>st</sup> century.

Instead of relying solely on traditional revenue sources—fuel and vehicle taxes—elected officials and state transportation agencies throughout the United States are increasingly looking to supplement those sources with private investment through PPPs. PPPs are a flexible procurement tool states are using to build new infrastructure, maintain existing infrastructure, and operate existing services. This section explores these options for funding and managing Nebraska's transportation infrastructure by considering the PPP experiences of other cities and states. PPPs are just one “tool in the box,” but they are a promising and valuable tool available to policymakers which, to date, have seen limited utilization in Nebraska transportation policy.

This report will not suggest that every highway or bridge project in Nebraska suddenly be done via partnerships and tolls. Rather, the point is that the potential for private capital investment deserves careful consideration for every future, large transportation project. The PPP model will not be appropriate for all of them, but for some projects PPPs could allow Nebraska to address its transportation needs in a more cost-effective, responsible and equitable manner.

## **A. What is a PPP?**

PPPs are contracts formed between public agencies and private companies that facilitate greater private sector participation in the delivery of transportation assets and services. While these partnerships may take relatively simple forms—such as a design-build procurement process or competitive contracting for highway maintenance—long-term partnerships are increasingly being used for new road construction and the modernization of existing roadways. Such partnerships typically involve the investment of private risk capital to design, finance, build, operate, and maintain (or some combination thereof) a roadway for a specific term during which a private toll company collects toll revenues from the users. When the contract expires, the government can take over the facility at no cost.

PPPs leverage the capital and expertise of the private sector with the management and oversight of the government to provide public services, and they are an effective way of financing, managing and operating roads while minimizing taxpayer costs and public financial risks. PPPs for complex, multi-billion dollar transportation projects have been used for decades in Europe, and more recently in Australia and Latin America. In fact, PPPs have become the conventional way to provide major new highway capacity in many countries. The private sector is financing, building, and operating most of the major new highways in countries as diverse as Great Britain, France, Spain, Italy, Greece, Poland, China, India, Indonesia, South Africa, Australia, Argentina, Brazil, Chile, and Jamaica. Large urban toll projects in excess of \$1 billion are in operation or under construction in Melbourne, Sydney, Paris, Israel, Santiago, and Toronto. During the 1990s, PPPs began in the United States and Canada as well. PPP toll projects are currently in operation or in development in states like California, Florida, Texas, and Virginia (as well as several Canadian provinces), and over 25 states have passed specific legislation to authorize the use of PPPs in transportation projects.

## **B. How Do PPPs Work?**

The private sector has long participated as a close partner with state and local governments in the design and construction of transportation assets. In fact, nearly all road

construction in the United States is performed by private firms working under contracts with public sector entities. Given that, it would be reasonable for readers to wonder how PPPs are any different from current state practices.

What's different is that PPPs expand private sector involvement beyond just the limited scope of simply designing and building transportation facilities. According to a 2009 report by the National Surface Transportation Infrastructure Financing Commission (emphasis added):

*Today, the private sector is taking on far greater risk and responsibility through an emerging class of comprehensive contractual arrangements to **not only deliver projects but also to operate, maintain, and finance them**, thereby providing greater financial certainty and more efficient performance for the public sector. [...] The private sector's participation in delivering surface transportation infrastructure can be viewed as a continuum, ranging from project delivery techniques (e.g., design-build contracting) to project maintenance (extended warranties) and long-term responsibility for financing and managing the operation of facilities (concession agreements).<sup>6</sup>*

With regard to delivering new transportation capacity—for many states the most attractive potential use of PPPs—the model that has worked best around the world is to use a *long-term concession* (or lease) agreement as the basis for protecting the interests of both parties in the partnership. In exchange for a long-term lease, an investor-owned company will finance, design, build, operate, modernize, and maintain a highway or bridge project, financing its expenditures from the toll revenues it is allowed to charge.<sup>7</sup> However, the

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<sup>6</sup> National Surface Transportation Infrastructure Financing Commission, *Paying Our Way: A New Framework for Transportation Finance*, p. 173, available at: [http://financecommission.dot.gov/Documents/NSTIF\\_Commission\\_Final\\_Report\\_Mar09FNL.pdf](http://financecommission.dot.gov/Documents/NSTIF_Commission_Final_Report_Mar09FNL.pdf)

<sup>7</sup> Though many concessions do involve tolls, some non-toll variations of the PPP model—including “shadow tolls” and some types of availability payment concessions (discussed later in this report)—have been developed that rely on alternative revenue sources, generally government payments to a concessionaire drawn from public funds. However, it should be noted that non-toll PPPs by definition do not bring net new revenues to the table. Real tolls, by contrast, add large new amounts of funding to the highway system.

state or local government still owns the roadway and protects the public interest through negotiating and enforcing the terms of the concession contract. Essentially this model extends the investor-owned utility concept from network industries like electricity and telecommunications to highways. Just as those industries are vital to the public interest, so too are highways.

The concession should be structured to mitigate any citizen concerns, and adequate protections for the public interest must be detailed in the terms of the agreement. These agreements tend to be several hundred pages long, spelling out all kinds of “what-ifs” and establishing well-defined performance levels that the contractor is legally required to meet or face penalty. These standards dictate everything from future maintenance and road condition expectations to the time it takes to remove dead animals. The contract also establishes toll rates and possible increases over the term—tolls are usually capped and indexed to some inflation measure—as well as any revenue sharing or limits on the concessionaire’s return on investment.

Like any type of contracting, PPPs can be done well or poorly. This is true of each type of partnership, from simple operations/maintenance contracts to complex concession agreements for new lanes or roads. Fortunately, while these PPP arrangements may seem relatively new to Nebraska, they are not new to the rest of the world. A long history has established best practices and guidelines to ensure that quality is delivered and that taxpayers are protected.

### C. Benefits of PPPs

Toll financing can help Nebraska close the financing gap for new infrastructure. In addition, the PPP model offers several advantages over the traditional model of transportation financing.

#### *DELIVERING TOMORROW'S INFRASTRUCTURE TODAY*

PPPs enable needed new capacity to be delivered much faster than is possible under the current pay-as-you-go funding system, which is often ill-suited to delivering large-scale projects in a timely manner. In a pay-as-you-go system, projects are held off until

enough gas taxes have been collected to pay for the project. PPPs offer a way to finance and build needed capacity now, when we need it, versus decades from now or possibly never. And it frees up resources to deliver other projects that will not have to wait for funding to become available. This is a win-win for taxpayers, drivers, and businesses as partnerships deliver projects to strategically connect the state and enable greater mobility of goods and people.

### ACHIEVING COST SAVINGS

Achieving cost savings is always a leading driver behind PPPs in transportation. Considerable cost savings are seen from a long history of PPPs because they have the proper incentives and greater flexibility to innovate. Using more innovative financing, such as finding ways to reduce risk premiums that only the private sector has an incentive to do, has reduced the gap between the public and private costs of capital to make private financing cost competitive. Private builders only start to make money when projects are complete; in contrast no government agency loses revenue when projects come in late. Private companies often bring in better and more specialized management and equipment that helps cut down expenses. Private contractors are also not burdened by state government requirements on hiring and can hire a more flexible and specialized work force using lower wage or part time workers in conjunction with higher skilled workers when necessary. Also, private companies often have incentive pay packages that encourage managers to deliver projects at lower costs. There are numerous avenues for costs savings in PPPs, which one dominates depends on the type of partnership.

The evidence of cost savings on highway projects is substantial. A report by the Federal Highway Administration found numerous examples of cost savings in a wide range of PPP types.<sup>8</sup> The Pocahontas Parkway in Virginia, which used a design-build-finance contract, came in \$10 million under budget thanks to innovative private partners. In Denver, the E-470 Toll Road, another design-build-finance contract, cost only \$408 million to make whereas it would have cost nearly \$600 million using state con-

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<sup>8</sup> United States Department of Transportation, *Report to Congress on Public-Private Partnerships*, December 2004, available online at <http://www.fhwa.dot.gov/reports/pppdec2004/pppdec2004.pdf>

struction.<sup>9</sup> In another example, Florida's PPP initiatives for highway maintenance have generated cost savings between 15 percent and 20 percent and highways built with PPPs saw a 300 percent reduction in cost overruns and 400 percent savings in time overruns relative to public construction.<sup>10</sup> In other states, PPPs of various contract types saw an average construction time savings between 5 months and three and a half years, according to the Federal Highway Administration.

The cost savings of new roads extend even beyond the construction phase. Drivers save time, fuel costs and money by wasting less time on congested roads. Contracts that require warranties on the quality of private work have also saved money in the long run, as seen through reduced maintenance fees on New Mexico Corridor 44 where a 20-year warranty saved \$89 million over 20 years. As these different examples show, cost savings are apparent both in building roadways and over the course of operating roads; savings on only one side of this equation, let alone both, are often enough to justify PPPs.

#### ACCESS TO CAPITAL

In addition to saving money, PPPs can also allow the state to tap into new sources of capital never used before to deliver transportation infrastructure in Nebraska. For example, the concession model is attractive to many different types of investors, including private equity investors and institutional investors (such as pension funds and insurance companies). Probitas Research reported in early 2009 that there were over 70 new infrastructure equity funds in or coming to market that calendar year, seeking over \$92 billion in new equity capital. Combined with the \$84.5 billion raised by existing infrastructure funds between 2004 through 2008, that would mean a total of \$176.5 billion in equity has been raised in the private capital markets to invest in infrastructure PPPs (assuming all \$92 billion is raised in 2009).<sup>11</sup> That figure is close to the \$180 billion estimated as available in 2009 by Morgan Stanley.

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<sup>9</sup> Ibid, p44.

<sup>10</sup> Florida DOT, Bill Albaugh, interview with Reason Foundation authors.

<sup>11</sup>Leonard Gilroy (editor), *Annual Privatization Report 2009*, Reason Foundation, Los Angeles, CA, <http://reason.org/apr2009>

Institutional investors are not just investing in infrastructure funds (which, like mutual funds, are designed to invest in and spread risk among many projects); some are investing directly in individual PPP projects. In 2009, the Dallas Police and Fire Pension System joined the mix of direct equity investors in two toll concession megaprojects (\$6 billion total value) in the Dallas-Fort Worth area, making it the first direct pension fund investor in U.S. PPP projects.

#### *GREATER EFFICIENCY*

Closely related to cost savings, some agencies seek PPPs to explicitly gain the “maximum utility from tax dollars” and improve overall system efficiency through competition and specialization.<sup>12</sup> PPPs offer considerable opportunities for cost savings and efficiency improvements due to the proper alignment of incentives and greater flexibility to innovate. Private companies often bring in better and more specialized management and equipment that helps cut down expenses and improve operations. In long-term concessions, for example, contractors have the incentive to adopt life-cycle approaches to asset management that will minimize operations and maintenance costs and capital expenditures over the life of the lease.

Private contractors are also not burdened by government civil service rules and can hire a more flexible and specialized work force using lower wage or part time workers in conjunction with higher skilled workers when necessary. Also, private companies often have incentive pay packages that encourage managers to achieve their performance goals at lower costs.

Study after study shows that a competitive system is more efficient and effective than traditional single provider systems. For example when Massachusetts turned to competition for its highway maintenance, nearly half of the contracts were won by employee groups who competed. For the first time, efficiency and effectiveness were introduced system wide, producing tremendous improvements. The state was able to lower its labor input costs and receive greater productivity in return. Furthermore, the introduction of competition freed up resources that could be allocated to higher priority needs.

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<sup>12</sup> New Mexico DOT, Adolfo Lucero, interview with Reason Foundation authors

Simply put, a “competitive system improves the status quo … [where] the fundamental goal is to turn out the best product possible.”<sup>13</sup>

#### *ACHIEVING PERFORMANCE OR QUALITY IMPROVEMENTS*

The contractual mechanism in PPPs increases the incentive to produce high-quality work and ensure high performance. Indeed, the level of performance is firmly established in the contract. Generally, contracts can (and should be) performance-based (focusing on outputs or outcomes) and can include quality assurances or quality control assurances. Enhancing accountability and performance also are prime considerations for many public officials in their role of protecting the public interest. Partnerships require strong contracts with performance requirements. In many cases, this adds an additional level of transparency into the operations.

#### *CHANGING THE INCENTIVE STRUCTURE*

Similarly aligned with performance or quality improvements is changing the incentive structure. PPPs change traditional governmental business practices, making them more flexible, innovative, transparent, and customer focused. In addition, PPPs change incentive structures as well—leading to more on-time and on-budget project delivery.

#### *ENHANCING RISK MANAGEMENT*

PPPs allow government agencies to shift major risks—such as construction cost overruns and higher-than-expected life-cycle operations and maintenance costs—from taxpayers to the contractors. With the power of a contract at hand, governments can build quality assurance and/or quality controls into project delivery as a means to manage risk. An increasing trend is the employment of warranty concepts whereby the contractor places a long-term guarantee on their work. This further shields taxpayers from risk. As discussed in Section IV, the assumption of risk by the private partner is one of the most important aspects in a successful PPP.

In addition, PPPs get away from traditional procurement requirements, allowing the state and the private partner to use innovative financing to make additional capital readily

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<sup>13</sup> Former Indiana Commerce Secretary Mitch Roob, interview with Reason Foundation authors

available, as well as reduce the common delays in project completion. The traditional design-bid-build procurement process completely separates the planning of the project from the construction. The project is designed by a engineering contractor, or the highway department itself, and then put out for bid. Different construction contractors then put in their bids. The design-build model gaining popularity includes the same contractor team in both the design and construction work. The benefits are in the time and cost savings of having one contractor team responsible for the entire project.

### *SPURRING INNOVATION*

PPPs produce innovative solutions. In non-competitive systems and where the incentive structure is not set up to reward innovation, there is no motivation to “swim upstream” and advance a new idea. Private firms have far more opportunity and incentive to encourage and foster innovative ideas at all levels.

### *FLEXIBILITY*

Governments seek PPPs for a myriad of reasons and to achieve a number of different goals. One of the undervalued benefits of PPPs and concession arrangements is that they are customizable to fit the needs, goals, and desired outcomes of a community. Put simply, governments can tailor each particular initiative or project to meet their goals.

For example, the concession model has been adapted in a variety of ways to build new capacity and address difficult challenges. In Texas, for example, the private sector is developing a 40-mile extension of State Highway 130 from Austin to San Antonio and will share revenues with the state over the life of the 50-year agreement. Without the private sector, this road would not have been built—the state could have only financed half of the project’s \$1.35 billion cost on its own.

Similarly, a concession can be structured to add new capacity to an existing roadway. For example, in return for a 75-year concession, the private sector is adding the first new lanes to the I-495 Capital Beltway in Northern Virginia, which again is something government had been unable to implement through traditional funding approaches.

For the South Bay Expressway in San Diego, the concession was tailored to meet a number of environmental and economic development goals. This roadway has been on the books since the late 1950's, but the funding was not there to advance it. The state partnered with a private venture to deliver the road through a 35-year concession. Not only did the private partner finance the \$635 million project, but they undertook an extensive public involvement process that led to the integration of features designed to meet a number of environmental and community goals, such as preserving 1,000 acres of habitat, restoring area wetlands, and building a number of parks and recreation facilities. Aside from its award-winning environmental innovations,<sup>14</sup> the road will deliver a much needed, north-south corridor to reduce congestion and improve mobility, and it will fill in a major gap in the regional road network.

As another example of the flexibility of the PPP approach, several states are seeing increased interest in availability payment concessions, in which the private sector designs, builds, finances, and maintains the road, but the public sector actually collects all of the tolls and reimburses the private company over the life of the deal in return for having made the road "available." Some officials are seeing this as a more politically attractive structure than having the private partner collect tolls and retain revenues. The \$1.6 billion I-595 express toll lane project in the Fort Lauderdale, Florida area—which reached both commercial and financial close in 2009—is an example of an availability payment concession, as is the \$1 billion Port of Miami tunnel project in Miami, Florida, which reached financial close in October 2009.

The above examples—all of which are underway today—offer just a few examples of the types of approaches being used by innovative policy makers to capitalize on the flexibility inherent in PPPs. These projects are excellent examples of the types of projects that might be able to greatly benefit Nebraskans if the legislature moves forward with allowing careful consideration of PPPs in addressing the transportation needs of Nebraska.

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<sup>14</sup> Federal Highway Transportation Association - "Outstanding Ecosystem Initiative"

#### **D. Broad Enabling Legislation Needed**

The modern use of PPPs in the transportation arena originated over 15 years ago with California's enactment of AB 680 and adoption by the Commonwealth of Virginia of its landmark Public-Private Transportation Act of 1995. Today, over two dozen states have adopted legislation authorizing the use of public-private agreements for the design, construction, financing, operation and maintenance of transportation facilities.

Workable legislation is generally needed to entice private sector investment. The reality is that transportation projects are going to those states that have created the right conditions—where the law facilitates PPPs and where private investment and participation is welcomed and embraced. States like Texas, Virginia, Georgia, and Florida are generally regarded as offering the best models, as evidenced by the fact that they are reaping the most private sector interest and investment. As long as Nebraska lacks the proper legal framework, these other states will continue to reap the benefits of private sector investment at the potential expense of Nebraska's economy and business climate.

If Nebraska policymakers seek to embrace PPPs, the legislature will need to pass a comprehensive PPP enabling statute, and there are many models to choose from. Arizona's House Bill 2396, passed in June 2009, offers a good example of cutting edge PPP legislation combining many of the key elements generally seen as desirable by PPP legal experts, such as:

- *No legislative approval of PPP contracts:* Perhaps the most important aspect of PPP legislation is what it *should not* have—a requirement for legislative approval of contracts. Put simply, legislative approval of contracts is generally a deal breaker for private investors, as it significantly increases political risk. Legislative approval would have the undesirable effect of limiting private sector interest in Nebraska projects; after all, the prospect of spending millions of dollars to navigate a competitive procurement process and then losing the project at the end in a legislative vote will be relatively unattractive

to private bidders. The states that have been the most progressive in advancing PPPs to date—notably Virginia, Texas and Florida—have established strong procurement rules through comprehensive enabling legislation but have opted not to pursue legislative approval of individual PPP projects.

- *Broad flexibility in project delivery methods:* Arizona's PPP statute allows the state to utilize a broad range of PPP project delivery methods—predevelopment agreements; design-build (DB) agreements; design-build-maintain (DBM) agreements; design-build-finance-operate (DBFO) agreements; design-build-operate-maintain (DBOM) agreements; design-build-finance-operate-maintain (DBFOM) agreements; concessions providing for the private partner to design, build, operate, maintain, manage or lease a facility; and *any other project delivery method* or agreement (or combination of methods or agreements) that the state determines will best serve the public. Essentially, Arizona now has as much flexibility as it could possibly need to craft creative PPP contracts well-tailored to each individual PPP project.
- *Allows for both solicited and unsolicited private sector project proposals.* The ability to accept outside ideas via unsolicited project proposals offers a means by which the state can “think outside the box” and pursue initiatives that might not have otherwise come forward from in-house staff creative proposals. Importantly, unsolicited bids that are ultimately advanced by the state would be required to be competitively bid so as to ensure maximum value for money.
- *Selection based on best value or qualifications, as opposed to simply low bid.* Bid costs are certainly an important consideration in selecting a contractor, but focusing on delivery costs alone ignores other considerations such as financing plan, total project life-cycle costs over its design life, risk transfer, expertise and experience, technological innovation, etc. Combining several of these factors into a “best value” or “value for money” analysis will ensure that the state is not sacrificing important aspects of the project in a single-minded pursuit of the lowest construction bid.

- *Authorizing the blending of public and private funds to finance projects:* For every PPP project that can be financed 100 percent by a private partner, there will be many more projects for which the private sector could provide some—in many cases, most—but not all of the financing at the toll rate schedule established by the public partner. For example, in Texas the state is contributing approximately \$1 billion in public funds to leverage over \$5 billion in private investment on two concession megaprojects that reached commercial close in 2009. As one observer noted, “for the price of a can, Texas got the whole six pack.” Similar projects that blend public funds to leverage private financing are underway in Virginia and Florida.
- *Authority for toll/user fee collection:* Legislation should give express authority for the private partner (and possibly the state, if it doesn’t already have it) to collect tolls or user fees. Also the legislation should require the state to establish in the agreement either (a) a toll rate schedule covering the life of the contract, or (b) provisions regulating the private partner’s return on investment.
- *No delegation of condemnation power;* To avoid fears of impropriety or concerns over private property rights, it should be explicitly stated in the legislation that the state never relinquishes its eminent domain authority in a PPP.
- *“Competing” facilities provisions:* The private sector needs some assurance that if it builds and operates a toll road over a multi-decade period that the state will not come along later and build nearby competing “free” roads. Without some assurance in this regard, investors would never purchase the toll revenue bonds. At the same time, outright bans on competing facilities would place too severe a restriction on the state’s ability to act in the public interest. To balance these competing concerns, PPP legislation should establish the public entity’s right to build the facilities of its choosing, but also allow the private partner to seek—but not guarantee—compensation for lost toll reve-

nues due to construction of competing facilities. Further, Arizona and Texas included provisions exempting currently-planned projects from potential compensation claims; after all, if nearby projects are already on the books or in development at the time a PPP is signed, the private partner already knows it's coming and can factor the potential toll revenue impacts into its financial models upfront.

## **V. Modernizing and Expanding Nebraska's Road and Bridge Network Through PPPs**

NDOR has long utilized the private sector in the form of outsourcing. NDOR outsources a number of activities, including road construction, traffic surveys, environmental impact studies, database management and project engineering.<sup>15</sup> If private companies can work with NDOR to perform so many of these important functions, the next logical step is for them to contract with NDOR to finance, operate and maintain the roads as well, in the form of PPPs.

### **A. Road Construction, Expansion and Rehabilitation**

PPPs are being used to underwrite the development of new roads and the expansion and rehabilitation of existing roadways—referred to as “greenfield” PPPs—in a number of states, and indeed in many countries around the world. As discussed earlier, the model that has worked best around the world to deliver new transportation capacity is to use a long-term concession (or lease) agreement in which an investor-owned company—or more typically, a consortium of investors and operators—will finance, design, build, operate, modernize, and maintain a highway project, financing its expenditures from the toll revenues it is allowed to charge.

The decision regarding whether a new privately-financed toll facility—perhaps a bypass or an extension of an existing expressway—could be financed 100 percent through tolls is not a simple matter of traffic counts. Rather, each project’s financial viability is determined through sophisticated financial modeling that incorporates not only future traffic volumes, but also toll rate schedules, revenue projections, regional development patterns, planned road construction, economic conditions, changes in fuel efficiency, goods movement, and numerous other factors over a long time horizon (since concessions will usually last between 30 to 99 years in length). Hence, the question as to where PPP toll facilities could work at a project-specific level in Nebraska would require complex analysis beyond the scope of this paper, but some general observations can be made.

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<sup>15</sup> Transportation Research Board, “State DOT Outsourcing and Private-sector Utilization”, 2003

First, NDOR should evaluate the feasibility of using PPPs to deliver any currently planned state highway construction project for which no funding source has yet been identified. Otherwise, it is likely many of these projects could be stalled for decades; with revenues flattening and investment needs rising, it will become increasingly difficult to assemble the basket of “traditional” transportation dollars sufficient to fully fund any given project. PPP financing could accelerate these projects by decades and free up funds for additional projects that otherwise might not materialize. Table 3 below shows several of NDOR’s planned capital improvement projects that currently lack a funding source and for which an evaluation of the feasibility of a PPP is warranted.

**TABLE 3. Potential Nebraska PPP Candidates? Planned Capital Improvement Projects Lacking Funding**

<b>Project</b>	<b>Estimated Cost</b>
Hwy 2 (Lincoln South Beltway)	\$175,000,000
Hwy 34 & 75 (Missouri River Crossing)	\$145,000,000
Hwy 75 (Plattsmouth to Bellevue)	\$50,000,000
I-80 56th – Waverly (6-lane)	\$35,000,000
Hwy 133 (Omaha to Blair)	\$20,000,000

Source: Author’s construct, based on 2009 NDOR data.

In addition, significant growth is expected to occur in Omaha and Lincoln in coming decades, making those cities another natural place to start exploring the possibility of utilizing PPPs for new, high-demand capacity. However, Nebraska’s relatively lower population/lower density urban areas may limit traffic volumes and toll revenues—and thus the number of 100 percent toll-viable road projects, relative to higher growth/higher population metropolitan areas like Washington, D.C., Miami, Austin and Dallas, all of which currently have major, \$1+ billion PPP toll projects in development. Hence, it may be the case that some blending of private equity and public funds may be necessary to advance many PPP candidate projects in Nebraska. In fact, that’s generally the situation faced by most states—“cash cow” toll road project opportunities

are rare, a few roads may be 100 percent toll-viable, but even more would be viable through blended public and private dollars.

Alternatively, the state could take on the revenue risk in a toll project by collecting the tolls itself while committing to a fixed-cost annual payment to the concessionaire, and making up any shortfall if toll revenues are insufficient to cover the entire annual payment. The trade-off of retaining that revenue risk may be worth it to the state if it facilitates getting needed capacity built that the state otherwise couldn't fund without private investors bringing the upfront project capital. In addition, in credit markets that still have not recovered from the 2008/9 financial crisis, these types of arrangements where the private sector does not bear revenue risk require less upfront equity invested, so they may be easier to finance in today's market, relative to full concessions.

The I-595 Express Lanes project in Fort Lauderdale, Florida offers an example of this approach. This \$1.6 billion project will add express toll lanes to a congested stretch of I-595 and reached commercial and financial close in 2009. This is an example of an "availability payment" concession in which the concessionaire will finance, design, build, operate and maintain the lanes and will be repaid over 35 years through "availability payments" (or payments from the state based on delivering the lanes and keeping them "available" for users). The state—not the concessionaire—will actually collect the tolls in this project, so the state takes on the revenue risk of the project.

However, Nebraska also has the option of pursuing non-toll PPP projects through another type of availability payment concession in which the state makes annual payments to the concessionaire over the life of the concession term out of appropriated state revenues, based in part on the condition and “availability” of the lanes to handle traffic. In a PPP where toll revenues are not collected, the private sector is not “expanding the pie” by bringing net new revenues to the table, as it would in a PPP toll concession. Instead, this approach effectively becomes an alternative to bonding that still involves the state committing (via contract) to a stream of payments over a multi-decadal term.

The Port of Miami Tunnel PPP is an example of this approach. In mid-October 2009, the state of Florida reached financial close with a concessionaire on a non-toll availability payment concession project to deliver a long-sought, \$1 billion pair of 3,900-foot tunnels to link Miami's seaport to I-395 and I-95 on the mainland, improving goods movement and eliminating major current chokepoints in the city. The Florida Department of Transportation (FDOT) will make availability payments to the concessionaire that begins once the tunnel opens for use and will continue over the 30 years of the concession agreement. The PPP structure will transfer substantial risk for construction overruns and the long-term cost of operations and maintenance to the concessionaire (but not traffic and revenue risks). The concessionaire will be paid for performance by FDOT over the life of the PPP rather than upfront. If the concessionaire underperforms, FDOT will be able to reduce the payment. This will align the interests of FDOT and of the concessionaire in being efficient and providing high-quality construction, upkeep and user service.

This may be an approach that would be well suited to major reconstructions of Interstate 80 and numerous state expressways when they reach their design life. These will be costly projects for which "pay as you go" funding is ill suited, but for which a non-toll PPP might be a viable means of financing and accelerating the projects, while transferring important risks and ensuring proper operations and maintenance over the long term.

In addition to developing new roads, PPPs can be used to deliver expanded capacity of existing roads. In 1988, Reason Foundation first introduced the concept that the private sector could build supplemental congestion-relief lanes, using electronic toll collection to charge market prices so as to keep the lanes free flowing even at the busiest of rush hours.<sup>16</sup> The first such lanes were developed in Orange County, California under a private franchise awarded in 1991 under California's Assembly Bill 680's PPP legislation. Opened to traffic in December 1995 in the median of SR-91, the "91 Express Lanes" was the first project to demonstrate that electronic variable pricing works well to keep

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<sup>16</sup> Robert Poole, *Private Tollways: Resolving Gridlock in Southern California*, Reason Foundation, 1988.

traffic flowing smoothly, as it still does today. And the toll revenues have proved sufficient to pay for the debt service and operations and maintenance of the new lanes.

Because the 91 Express Lanes were built where high-occupancy vehicle (HOV) lanes<sup>17</sup> had originally been planned, the concession agreement required that the concessionaire permit three person carpools to use the lanes at no charge. The concept of limited-access lanes to which one could gain access either by meeting an occupancy requirement or by paying a toll was dubbed High Occupancy Toll (HOT) lanes in a 1993 Reason paper.<sup>18</sup> HOT lanes can be created either via new construction or by converting existing, underutilized HOV lanes into HOT lanes. The next three HOT lane projects to emerge in the 1990s—on I-15 in San Diego and on I-10 and US-290 in Houston—were all HOV conversions. A private firm was hired to manage the I-15 Express Lanes, illustrating another role for the private sector.

The early years of the 21st Century have seen a proliferation of proposals for more congestion relief lanes in heavily-populated urban areas. The Virginia DOT announced in September 2007 that the I-495 HOT lane project is moving forward as a PPP with a private sector team financing approximately 75 percent of the \$1.7 billion project—the first expansion of the Capital Beltway since its original construction, which will add new, dynamically priced lanes. The concessionaire will also be undertaking extensive repairs of the existing roadway as part of the project, benefitting toll payers and non-toll payers alike. Indeed, the toll lanes currently being under construction on I-495 rescued a traditional road widening project collapsing under a barrage of local opposition. The concessionaire came up with a proposal that nearly eliminated the need to acquire extra right of way for the road, saving hundreds of homes from eminent domain condemnations and reducing the project cost by approximately one-third. This vital project has not gone unnoticed in neighboring Maryland, where the State Highway Authority has requested a private sector assessment of the feasibility of similar partnerships to add Express Toll Lanes to the Maryland portion of the Capital Beltway (I-495), the Baltimore Beltway (I-695), and several other major highways in the area.

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<sup>17</sup> Nebraska does not currently allow high-occupancy vehicle lanes, but they should certainly be a consideration as Nebraska changes the way it funds, operates and maintains transportation. All options should be available to NDOR to best address Nebraska's needs.

<sup>18</sup> Fielding and Klein, "High Occupancy Toll Lanes: Phasing in Congestion Pricing a Lane at a Time"

The Dallas area has two similar express toll lane megaprojects in procurement. The I-635 managed lanes project is a blockbuster, \$4 billion, 52-year concession project that will deliver a technically complex mix of new "free" (untolled) lanes and managed express toll lanes to a 13-mile stretch of the I-635 corridor in Dallas County. Construction is expected to begin by mid-2011 and open to traffic in late 2016. Motorists will have a choice of either using the managed toll lanes or remaining on the improved and rebuilt free main lanes. The new LBJ highway will feature 8 rebuilt free main lanes, additional shoulders on the outside of the main lanes, continuous frontage roads (two or three lanes wide), and 6 barrier-separated managed toll lanes located between or below all frontage roads. The state is contributing \$445 million in public funds, while the concessionaire will bring the remainder of the financing to the table. The project reached commercial close in 2009, and financial close is anticipated before summer 2010. Interestingly, the Dallas Police & Fire Pension System is on the investor team, making them the first public pension fund to be direct equity investors in toll road projects in the U.S.

The second North Texas express toll lane PPP concession, the North Tarrant Express, is a \$2 billion, 52-year concession project to deliver a combination of dynamically priced managed lanes and untolled lanes on a 13 mile stretch of Northeast Loop Interstate 820 and State Highway 121/183 in Tarrant County. For a state investment of approximately \$570 million, these improvements will provide \$2 billion of needed infrastructure to the Fort Worth area, as well as operations and maintenance over the next 52 years, valued at \$450 million. The project reached commercial close earlier this year, and financial close is anticipated by early 2010. Like the I-635 managed lanes project, the Dallas Police & Fire Pension System is one of the direct equity investors.<sup>19</sup>

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<sup>19</sup> These two Dallas-Fort Worth area projects will ultimately total roughly \$6 billion in infrastructure investment to eliminate some of the most congested bottlenecks in the region (and state), and the state will only be contributing roughly \$1 billion of that. Adding in the state's other toll concession—State Highway 130 segments 5 & 6, where the private sector is delivering all of the financing for the \$1.3 billion, 40-mile toll road project—the state is paying about \$1 billion to get over \$7 billion in investment. By contrast, Texas received less than half of that (about \$2.5 billion) for highway improvements from the American Recovery and Reinvestment Act of 2009.

Further, this model can benefit bus transit riders as well. Indeed, there can be real synergy between HOT or express toll lanes and bus rapid transit (BRT). The BRT concept has attracted much recent attention as a way of achieving service quality akin to that of rail transit, but at much lower capital cost thanks to the ability of buses to use already existing infrastructure. Kansas City has effectively used BRT in its transit system, and that is one of the reasons KCATA has until now done such a good job of holding down costs. However, for the long-haul portions of express bus service, BRT proponents much prefer exclusive busways, in order to guarantee reliable high-speed service (giving BRT a speed advantage over driving). But except in very rare cases (where one or two buses per minute can be justified), an exclusive busway is enormously wasteful of the costly exclusive right of way. Some time saving can be achieved by operating express buses in HOV lanes (as in Houston and on the El Monte Busway in Los Angeles), but since successful HOV lanes fill up with traffic, the speed and reliability gains for buses are not sustainable long term.

A much better solution is to operate BRT service on HOT lanes, as proposed in a 2003 Reason Foundation report.<sup>20</sup> Electronic market pricing can ensure that the number of vehicles per lane per hour is limited to an amount compatible with free-flow conditions (typically no more than 1,700 vehicles/ lane/hour). Hence, the HOT lane becomes a “virtual exclusive busway”—from the transit operator’s perspective, it obtains the service quality of an exclusive busway, but does not have to pay for it, thanks to the premium tolls paid by the automobiles that share the use of these lanes.

A number of metro areas are currently studying the possible creation of a network of such managed lanes, serving as both congestion-relievers for drivers and as BRT infrastructure. They include Dallas, Houston, Miami, Atlanta, San Francisco and the greater Washington, DC area. All the states involved have PPP laws in place, which would permit such projects to be done under their auspices. Before moving forward with any such innovative ideas, Nebraska laws would have to be changed to allow various types of HOT or HOV lanes on the state highway system.

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<sup>20</sup> Poole and Orski, “HOT Networks: A New Plan for Congestion Relief and Better Transit”

## **B. Toll Truckways**

Another type of specialized toll project well suited to PPPs that Nebraska policymakers should consider are new lanes designed for exclusive use by trucks. Such lanes would be designed with heavy-duty, longer-lived pavement, less-steep grades, etc. to better match the physical features of heavy trucks. They would also be separated from general-purpose lanes by concrete barriers, increasing highway safety by reducing the likelihood of often deadly car-truck collisions. Historically, the trucking industry has staunchly opposed tolls and toll roads, considering it “double taxation” to pay both tolls and fuel taxes on the same highway. But one concept of toll truckway has won significant support in trucking circles. Reason has proposed that long double- and triple-trailer rigs be allowed to operate on such barrier-separated lanes in states where they are otherwise forbidden by federal law.<sup>21</sup> These larger rigs can in many cases allow a rig to haul double the payload at very little increase in operating cost, making it worth the operator’s while to pay a fairly hefty toll to gain these savings.

Truckway projects planned in California appear to have trucking industry support. The Southern California Association of Governments has included in their new 2030 long-range plan a \$16 billion system of toll truckways to link the ports of Los Angeles and Long Beach with the Inland Empire and Barstow. Its financing plan is based on the high toll rates justified by the operation of double and triple-trailer rigs.

Further, some interesting projects are emerging on this front that will be of particular interest to Nebraska. First, as a result of revenue shortfalls, in 2008 the Wyoming legislature asked the Wyoming Department of Transportation (WyDOT) to study the feasibility of tolling trucks on Interstate 80, including the possibility of adding lanes to Interstate 80 across its more than 400+ miles in southern Wyoming. In 2009, the legislature asked that the study be continued.

That study was completed and seven public outreach meetings were held in June 2009. According to WyDOT’s website, “Currently, a typical section of I-80 in Wyoming has a traffic count of about 13,000 vehicles per day, with heavy trucks making up about half

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<sup>21</sup> Poole and Samuel, “Corridors for Toll Truckways”

of the traffic. During the next three decades, traffic is expected to double, with truck traffic increasing at an even faster rate than passenger vehicle traffic. (By 2037, heavy truck volume alone is projected to approach nearly 16,000 per day.) Meanwhile, estimates show maintaining I-80 in its present condition over the next 30 years would cost more than \$6.4 billion, after adjusting for inflation, exceeding the total of revenue expected to be available for maintenance of the entire state highway system, much less I-80.”

With the meetings completed the project costs are being refined for adding lanes and reconstructing bridges and including right of way acquisition and utility relocation. The financial aspects of the project are also being developed including toll diversion (estimating amount of traffic that would use alternate routes to avoid paying a toll), the impact on local businesses, and the potential for issuing bonds for the project. Technical aspects of the project such as tolling technology, number of toll booths or points, etc are also being considered. Strategies are also being considered regarding the opportunities to gain Federal approval for environmental studies and for tolling the Interstate. Legislation from the Wyoming legislature will also be needed for a toll authority should Wyoming move forward.

Another goal of the Wyoming study is looking at outreach to other states and the pros and cons of forming a multi-state coalition to support tolling in the I-80 corridor. Nebraska may want to consider cooperation with Wyoming in exploring this opportunity.

The Missouri Department of Transportation is also advancing dedicated truck lanes as a centerpiece of its plan to reconstruct and add capacity to I-70. In 1999, Missouri embarked on a major, decade long initiative with the Federal Highway Administration (FHWA) on how best to improve I-70 along its 200-mile corridor. After several iterations of federally-required environmental studies, in August 2009 the FHWA approved the Missouri Department of Transportation’s recommendation of truck-only lanes as the preferred alternative for the reconstruction and expansion of the I-70 Cor-

ridor (in comparison to the previous decision to widen existing I-70 to six lanes). However, no funds are available for this project at this time, so the focus has primarily been on planning.

The truck-only lanes strategy would provide travelers a minimum of two truck-only lanes on the inside and two general-purpose lanes on the outside for both eastbound and westbound travelers. The study team evaluated variations of the truck-only lanes alternative for urban, rural and environmentally sensitive parts of the corridor, depending on traffic conditions and corridor constraints. In addition, they evaluated various funding options for the project, but did not select a preferred funding option. Finally, the study team developed a construction cost estimate for the project of \$3.9 billion. The truck-only lanes strategy compared more favorably to general-purpose lane expansion in the key areas of freight efficiency, safety, constructability and maintenance of traffic during construction.

At the same time, Missouri filed a grant application under the 2009 stimulus funding to further study truck toll lanes across the state on I-70. According to Missouri Secretary of Transportation Pete Rahn, “Rebuilding I-70 with truck-only lanes is one of MoDOT’s five highest priorities.” And given the transportation funding shortfalls currently faced in Missouri, it is likely that tolls and PPPs will be among the mix of potential finance and project delivery options.

### **C. Highway Maintenance/Asset Management**

At least 22 states, including Nebraska, contract for highway maintenance at some level.<sup>22</sup> Traditional contracts for road and highway maintenance are unit- or work-order oriented. Contracting companies are paid for the amount of work they do—not on the quality of work that is provided. These contracts are usually limited to one year with two option years. While traditional road maintenance contracting offers significant cost savings over in-house government provision, there is little or no flexibility in determining work methods, as the contracting agency typically defines the work proc-

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<sup>22</sup>Transportation Research Board, “State DOT Outsourcing”

esses. In effect the private contractor mimics the agency's processes and thus by definition, severely restricts innovation and limits the potential benefits.

Current best-practice techniques in outsourcing rely on longer-term performance-based maintenance contracts, essentially a maintenance PPP. Under this type of arrangement, the contracting agency defines an end outcome goal (e.g., high quality roads) and the contractor decides how best to achieve the desired outcome. The contract creates clearly defined performance measures, clearly defined outcomes and timetables, and allows for new and innovative methods, opportunities for value engineering, and improved efficiencies.

The most common form of performance-based contracts in road and highway maintenance is total asset management, or "fence-to-fence" contracts. These contracts cover every part of the road or highway and include all maintenance managing the "total asset." The contracts specify minimum performance standards and a desired end outcome. Payment is based on achievement at different milestones, rewarding contractors for high or exceptional performance with bonus payments and penalizing them for poor performance with fines, and risks are transferred to the contractor.

Performance-based total asset management contracts are longer term than traditional contracts—typically five or more years with extension options at the end—which fosters a good relationship that will add to the value and quality of the work. Cost savings and efficiencies will not be immediate, but this approach sets the stage for predictability (fixed-costs) in the maintenance budget and transfer of significant risks.

This approach was pioneered in Australia and New Zealand. Virginia's Department of Transportation became the first in the U.S to do so in 1996, outsourcing over 250 miles of Interstate maintenance to one contractor in a fixed-cost total asset management contract. The initial contract was for six years with a value of \$131.6 million covering 251 miles of interstate, including state highways in urban Richmond, rural western Virginia, and the southwest part of the state. The contractor is responsible for determining how they will maintain the road, i.e., what type of materials, techniques, and pro-

cedures they will use. An annual audit is conducted and a report card is issued describing the contractor's progress toward the contract goals. In 2000, Virginia Tech conducted an independent assessment for VDOT. They found cost savings between \$16 million to \$23 million over the five-year period.<sup>23</sup> Virginia's experience with contract maintenance has been so successful that the Virginia General Assembly passed legislation in 2006 requiring the state Department of Transportation to contract out all highway maintenance.

Florida's DOT took the ball from Virginia and has run with it. The state currently has 32 total asset management contracts, covering all manner of road typologies and geographies—i.e., specific Interstate segments, entire stretches of Interstate, entire FDOT districts, bundles of highway segments, toll roads, etc. For 28 of those contracts, FDOT estimates savings over in-house provision at 16%, and savings over traditional short-term maintenance contracting of 10%. It's likely that the true savings are even higher. Those 28 contracts would have been 980 contracts had they been issued through traditional short-term maintenance contracting. Instead of the 348 invoices they process annually under the 28 contracts, the state would have processed over 11,000 annually under traditional contracting approaches.

#### **D. Bridge Rehabilitation and Maintenance**

The tragic collapse of the I-35W bridge in Minneapolis in 2007 has focused nationwide attention on the conditions of infrastructure, particularly aging, deficient bridges. Though PPPs have been used in the U.S. Canada and elsewhere to deliver new bridge projects, Missouri has come closer than any state to implementing a cutting-edge bridge rehabilitation and maintenance PPP. The Missouri DOT's Safe and Sound Bridge program, which is now being undertaken at a smaller scale as a public sector project, originally started as an innovative PPP project in which a private sector team would finance, design, build/upgrade, and maintain 802 of the worst state bridges over a 30 year period. The private team would finance the half-billion dollar project upfront and then maintain these bridges over a 25-year term. The state would have paid nothing during the five years of construction work, followed by 25 years or more of annual

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<sup>23</sup> Cline, Virginia DOT

payments (essentially a non-toll availability payment) that the state would have treated as an operating expense using a portion of its federal bridge funds.

Though a concessionaire was selected for this project (Zachry American Infrastructure) the PPP project ultimately failed to reach commercial close. However, a bridge maintenance program along the lines of Missouri's originally-proposed Safe and Sound Bridge Program—essentially a hybrid of a PPP concession and a long-term maintenance contract—is an opportunity worth exploring in Nebraska. The Missouri project's failure to advance as a PPP shouldn't be seen as an indication that the model they were pursuing was unviable—close observers report that institutional and bureaucratic inertia were the cause of that deal not coming to fruition, not a flaw in the concept or financial model.

## E. Design and Engineering

A 1991 study published in *Professional Services Management Journal* showed that states that contract out 50 percent to 70 percent of their engineering services have the lowest overall cost of engineering; whereas those with less than 10 percent have the highest cost of engineering.<sup>24</sup> Like in Nebraska, private contractors currently perform the majority of the Florida's Department of Transportation activities. Many functions within the FDOT tend to be commercial in nature, making them readily available for competition. Indeed, in March 2001, Florida's Office of Program Policy Analysis and Government Accountability (OPPAGA) suggested that private contractors “can handle additional work” and called for the expedited contracting of toll collection operations.<sup>25</sup>

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<sup>24</sup> Transportation Research Board

<sup>25</sup> Ibid

## **VI. BEST PRACTICES & GUIDELINES FOR PPPS**

Not all PPPs are created the same. PPPs can be crafted and implemented well and they can be crafted and implemented poorly. This is true of each type of PPP from simple operational contracts to concession agreements for new roadway or bridge assets. Fortunately, while these arrangements may be new to Nebraska, they are not new to the rest of the world. A long history has established partnerships best practices and guidelines to ensure that quality is delivered and that taxpayers are protected.

The public sector's key role is setting the agenda—outlining expectations, goals, and desired outcomes. In an operational contract, the public entity establishes the standards and performance requirements. Once a private partner has been selected through a competitive, open process and a contract is signed, the role of the public sector shifts from planning to that of oversight and evaluation. The public entity does not sign a contract and walk away. Rather, strong reporting, evaluation, and auditing components must be put in place to strictly monitor the contract and performance.

For new PPP transportation projects, the public sector is typically responsible for defining the route and the nature of the project, land acquisition, the environmental review process, and preliminary design. Of course, the oversight and evaluation component remains as well.

While there are general guidelines as to how these deals are completed, it is important to note that each is unique in its own way. Indeed, one of the undervalued benefits of PPPs and concession arrangements is that they are customizable to fit the needs, goals, and desired outcomes of a community or a state. In addition, the concession should be structured to mitigate any concerns, and adequate protections for the public interest must be incorporated into the binding terms of the concession agreement.

There are many components of a concession agreement—length of concession, toll schedule, and performance requirements, to name a few. Depending on the goals or

needs of the public interest, the public entity can increase or decrease the value of the contract to both the public and the private contractor. One way to view this is that each component of the contract—length of agreement, toll schedule, performance requirements, etc.—is an individual dial that can be adjusted up or down. For example, “dialing down” the length of the concession term will lower the concession price while “dialing up” the ability of the concessionaire to raise tolls will increase the price. The governing body will have to balance its need for raising revenue with the needs and rights of users. The public sector will be responsible for identifying and specifying the best mix of outcomes—and adjusting the dials accordingly—to satisfy the public interest and assure appropriate protections for users and taxpayers. Clearly, the governing body has tremendous control and power to set the terms of the agreement.

### **A. Concession Length**

To put it simply, the longer the term the higher the bids are likely to be, increasing the size of the upfront payout (all other things being equal, of course). Generally speaking, the minimum term to make most investments worthy is approximately 35 years. Recently, the global trend has been toward longer terms. Chicago signed a 99-year lease for the Skyway and Indiana choose a 75-year lease for the Indiana Toll Road. The State of Texas has focused on 50-year terms for many projects in their pipeline. None of the PPP toll concessions in the United States have had lease terms lower than 30 years. Terms of this length and nature are similar to investor-owned utilities in the United States where franchises are granted for similar periods of time. The concession term must realistically be considered against other competing goals. In fact, the interests of the State of Nebraska may be best served by asking for bids that consider multiple terms—35-years, 50-years, 75-years, or 99-years, for example—to make a more fully informed decision on what term presents the best value to the taxpayers of Nebraska.

### **B. Tolling Schedule**

The ability for the concessionaire to set and/or raise tolls has a significant impact on

the price investors are willing to offer. Most concession agreements allow increased toll rates on an annual basis according to inflation.<sup>26</sup> Many European toll concessions use a formula with a maximum toll rate. Again, dialing this component up or down will reveal the trade-offs that must be considered. While it is contrary to free market theory to use a concession agreement to control toll rates, politically speaking it is a necessary component. The greater the flexibility and/or ability for the concessionaire to set toll rates, and increase them over time, the greater the initial payout will be. “Dialing down” or limiting the ability of concessionaires to raise tolls will likely result in smaller bid prices. The goals and needs of the state will have to be weighed in this context, as well as reasonable incentives for the concessionaire to have the capital to continue investing in the infrastructure.

### **C. Revenue Sharing**

Revenue sharing provisions are also something to consider. Essentially, these provisions state that the concessionaire would share profits with the state beyond a certain rate of return. The South Bay Expressway under construction in the San Diego area has this provision.<sup>27</sup> More recently, the 99-year lease of the Pocahontas Parkway in Richmond, Virginia included a profit-sharing mechanism. In fact, rather than receiving an upfront concession fee, the state of Virginia will receive 40 percent of gross revenues once the road becomes profitable. That number increases to 80 percent at higher rates of return. Thus, the deal could potentially add millions in revenue to state coffers over its 99-year life. Texas is using a similar approach for its three toll concessions currently in development, and the higher the rate of return, the higher the proportion of revenues shared with the state.

### **D. Maintenance and Performance Requirements**

The agreement should, of course, require any proposed facility to be kept in good and safe physical condition throughout the term of the concession. However, the concession agreement presents a unique opportunity to establish standards and performance requirements as specific conditions in the contract. Failure to meet these contract provisions should result in significant consequences for the private partners.

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<sup>26</sup> Peter Samuel, “Should States Sell Their Toll Roads”

<sup>27</sup> Ibid

The Indiana Toll Road lease, for example, is governed by a detailed 263-page concession agreement which is designed to protect the public's interests. The contract details many "what if" scenarios and establishes well-defined performance levels the contractor is legally required to meet or face penalty. Dead animals in the roadway, for example, need to be cleared within eight hours, and potholes must be filled within 24 hours. Many of the standards in the contract exceed the standards applied to the roads under the control of the Indiana Department of Transportation. Most important of all, the State of Indiana can revoke the contract at any time in the event of a breach of contract. The concession agreement sets the conditions for the state to cancel the contract and resume operations of the road should the contractor fail to perform. In any event, the state would keep the \$3.85 billion upfront payment, meaning that the contractor has assumed all the risk, not the taxpayers.

#### **E. Maximizing and Protecting New Transportation Funds**

Some PPPs can be designed to deliver an upfront payment to the public partner. The prospect of millions or billions of dollars arriving in a "windfall" for the state can present problems for public officials who all believe they could best spend the new money. This could happen in Nebraska if a private company were to pay an upfront payment for opportunity to build a new, tolled highway, for example. The following are some useful guidelines for consideration in how to maximize these potential new transportation funds:

- The majority of the corpus should be placed in a trust fund that would provide annual interest payments to fund ongoing maintenance and operations.
- Any debt on existing assets should be paid off—which in the long run, will create a stream of future benefits because of a smaller debt service.
- Monies should be dedicated toward one-time capital expenses in need of immediate attention. For example, NDOR has identified many structurally deficient bridges that need repair, which would be an excellent use of such resources.

## **VII. ANSWERS TO COMMON CONCERNS ABOUT PPPS**

Despite the increased utilization of PPPs in various states in recent years, a wave of new state PPP enabling legislation (in 2009 alone, Arizona, California, Massachusetts and Puerto Rico all passed transportation PPP legislation) and the enormous benefits to taxpayers and the public sector, reasonable concerns about PPPs have been expressed by policymakers, economists and the general public. This section explores some of the most commonly-voiced concerns.

### **A. Infrastructure Investment in the Wake of the Financial Crisis**

In the wake of the fall 2008 financial crisis, some observers have wondered whether the turmoil on the financial markets would dampen private investors' enthusiasm for PPPs and infrastructure asset leases. Broadly speaking, the answer is a definite no. As the global financial markets experience a massive credit crunch, one of the few categories in which there appears to be increasing interest among investors is revenue-producing infrastructure. There is a general consensus in the finance community that infrastructure remains a very attractive investment in the "flight to quality" seen in the markets more generally (capital flowing to solid, safe, and tangible investments with steadier returns and relatively lower risk profiles).

Despite economic ups and downs, people are still going to drive, fly and consume goods. That means roads, airports, water systems and other types of brick and mortar assets remain good investment prospects over the long term. Industry analysts expect that while debt is going to be more expensive and more conservatively invested, it will definitely be available for good projects. What is likely to change is the leverage in these deals. Instead of debt/equity ratios of 80/20 or 70/30 (as seen prior to the crisis), in the future we are likely to see much larger percentages of equity, at least in the near term.

There is strong evidence that the major providers of equity—infrastructure investment funds, insurance companies, and pension funds—continue to be strongly interested in infrastructure. Probitas Research reported in early 2009 that there were over 70 new infrastructure equity funds in or coming to market that calendar year, seeking over \$92 billion in new equity capital. Swiss financial services giant UBS announced in November 2008 that its new International Infrastructure Fund had raised an unexpectedly high \$1.5 billion in committed capital, and the company was considering launching another similar fund in 2009.

The proof is in the pudding though, and perhaps the most significant indicator of PPP market conditions in 2009 is that several high-dollar PPP deals have reached commercial and/or financial close, including:

- **I-595 Express Lanes project (Fort Lauderdale area, Florida):** This \$1.6 billion project to add express toll lanes to I-595 reached both commercial and financial close in 2009. This is an example of an "availability payment" concession in which the concessionaire will finance, design, build, operate and maintain the lanes and will be repaid over 35 years through "availability payments" (or payments from the state based on delivering the lanes and keeping them "available" for users).
- **Port of Miami Tunnel (Miami, Florida):** In mid-October 2009, the state of Florida reached financial close with the Miami Access Tunnel Consortium on another availability payment concession project to deliver a long-sought, \$1 billion pair of 3,900-foot tunnels to provide a direct link between Miami's seaport and I-395 and I-95 on the mainland, improving goods movement and eliminating major current chokepoints in the city.
- **North Tarrant Express (Metroplex area, Texas):** This \$2 billion, 52-year concession project involves a combination of dynamically priced managed lanes & untolled lanes. The state is contributing \$570 million in public funds; the concessionaire will bring the remainder of the financing. The project reached commercial close earlier this year, and financial close is anticipated by early 2010.

- **I-635 managed lanes project** (Metroplex area, Texas): Like the North Tarrant Express, this \$4 billion, 52 year toll road concession project will deliver a technically complex mix of new "free" (untolled) lanes and managed express toll lanes. The state is contributing \$445 million in public funds, while the concessionaire will bring the remainder of the financing to the table. The project reached commercial close earlier this year, and financial close is anticipated before summer 2010.
- **Chicago Parking Meter System lease:** In February 2009, the City of Chicago reached financial close with Morgan Stanley/LAZ Parking on a \$1.1 billion, 75-year lease of its downtown parking meter system.

### **B. "Sale" vs. "Lease"**

PPPs do not involve the sale of any facilities. Some partnerships involve short-term contracts to design, build, and possibly finance a road or bridge. The most dramatic form—the long-term toll concession—still involves only a long-term lease, not a sale. The government remains the owner at all times, with the private sector partner carrying out only the tasks spelled out within the concession agreement and according to the terms set by the state. Done properly, these deals are truly partnerships, in which the state does what it does best (right of way, environmental permitting, policymaking, contract monitoring and enforcement, etc.) and the concession company does what it does best (design, finance, construction, operation, marketing, customer service, etc.).

### **C. Foreign Companies**

A common concern about any PPP is the likelihood that a foreign company will become the state's partner in operating a toll road, bridge or mass transit system. The potential is high that a foreign company would win the bid because foreign companies have the most experience with PPPs. Roads in Australia, New Zealand, France, Italy, and Spain have utilized PPPs for years. Therefore, it is not surprising that the private-sector role in the provision of transportation services is more developed and mature outside of the United States.

In the early years of U.S. adaptation of the concession model, states want to deal with firms that have extensive experience as toll road providers. The simple fact is that the United States has no such industry yet, because we have used only public-sector agencies to build and operate toll roads. Meanwhile, European and Australian companies have decades of experience as world-class toll road providers. Thus, a responsible state government, wanting to ensure that the toll road is in experienced, professional hands, will weight prior experience very heavily in its selection criteria.

However, a domestic market is rapidly emerging in America. Investment firms including Goldman Sachs and the Carlyle Group have created their own infrastructure investment groups. In a recent PPP proposal in Colorado, several of the bids were from domestic firms. When Pennsylvania requested bids for a PPP to lease the Pennsylvania Turnpike, 14 teams representing 32 different financial and engineering companies responded with heavy international, Canadian and U.S. representation.<sup>28</sup>

In addition, U.S. union pensions are attracted to investing in infrastructure because those investments create jobs for union members. Unions have already contributed to investment funds run by firms like the Australia-based Macquarie, blurring the line between foreign and domestic interests. Further, in 2009 the Dallas Police and Fire Pension System became the first public pension fund to serve as a direct equity partner with a private concessionaire in two concession megaprojects in the Dallas area valued at over \$6 billion total.

Regardless, it would be unwise to ignore foreign operators—and their experience and expertise—simply because they are foreign. Nebraskans should not be too concerned if a foreign company from Australia or Spain (like the consortium currently operating the Indiana Toll Road) wins the bid to build a new, privately-operated highway in Nebraska. First, any potential roads would remain the property of the State of Nebraska. Second, the terms and conditions of the contract would empower the state to seize control of the road should the company violate their contractual agreements. Third, a road is a fixed, nonmoveable asset. It is not as if a foreign company will be able to

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<sup>28</sup> <http://www.tollroadsnews.com/node/3159>, article by Peter Samuel

pack up this asset and ship it overseas. Finally, many foreign companies are part of the pension portfolios of many Nebraskans (including labor unions), so any attempt to limit the participation of international firms in state PPPs would be counterproductive to many workers right here at home.

Furthermore, it is important to remember that even deals that involve 100 percent non-U.S. companies are very good for our economy. Attracting billions of dollars in global capital (and expertise) to modernize vital highway infrastructure is a large net gain for this country. Rather than investments and jobs going overseas, foreign entities are willing to invest their money domestically, creating jobs here in the United States. The further build-out and investment in our transportation infrastructure only makes the U.S. more competitive in the global marketplace.

In effect, foreign investment in our nation's infrastructure represents the reverse of outsourcing—it's more properly viewed as "insourcing." The opportunity to "insource" significant amounts of foreign investment into Nebraska should be embraced rather than avoided.

#### **D. "Uncontrolled" Toll Increases**

There are concerns that PPPs deals will lead to sky-high toll rates in future years, leaving the impression that tolls are uncontrolled. However, this is not the case. Most concession agreements to date have incorporated annual caps on the amount that toll rates can be increased, using various inflation indices. Put simply, future toll rates are a *policy decision* and are determined by state officials upfront before a concession agreement is signed. In fact, those pre-determined toll rate caps are generally established very early in the procurement process, as they are a critical input to potential bidders' financial models.

It is important to note that those caps are ceilings; the actual rates a company will charge depend on market conditions. Before entering into any toll road project, a company (or a toll agency) undertakes detailed and costly traffic and revenue studies. A

major goal of such studies is to determine how many vehicles would use the toll road at what price; too high a toll rate means fewer choose to use the toll road, which generally means lower total revenue. So the toll road must select the rate that maximizes total revenue. That rate may well be lower than the caps provided in the concession agreement.

There are some cases, such as high-occupancy toll (HOT) lanes or express toll lanes, where the main purpose of value-priced tolling is to manage traffic flow. In those cases, pre-defined limits on toll rates defeat the purpose. Those rates must be allowed to vary, as needed, to keep traffic flowing freely at the performance level specified. When such value-priced lanes are operated under a concession agreement, instead of limiting the toll rates, the agreement should limit the rate of return the company is allowed to make, with any surplus revenues going into a state highway or transportation fund. That is how California's original pilot program for long-term concessions dealt with the issue, and similar deals have been done in Texas, Florida and Virginia.

#### **E. Bankruptcy**

What if the concessionaire goes bankrupt? In the event of a corporate bankruptcy on the part of a private sector investor-operator, the asset would revert back to the state, which could re-lease it again. Should the concessionaire need to sell, get out of, or modify the contract for any reason during the lease term, final approval would rest with the state.

#### **F. "Non-Compete" Clauses**

Whether public or privately-owned, bond investors will not buy bonds for assets with unregulated competition from entities with the power to tax, and build competing facilities. Contractual clauses designed to protect toll road operators from the construction of new, parallel "free" roads have evolved over the years. The approach has changed from an outright ban on competing facilities to a wider definition of what the state may build—generally, everything in its current long-range transportation plan—without compensating the toll road developer/operator. And for new roadways the

state builds that are not in its existing plan and which do fall within a narrowly-defined competition zone, the current approach is to spell out a compensation formula. The idea is to achieve a balance between, on one hand, limiting the risk to toll road finance providers (of potentially unlimited competition from taxpayer-provided “free” roads) and, on the other hand, the public interest.

Two recent long-term lease transactions provide a useful illustration. For the Chicago Skyway concession, there were no protections for the private-sector lessee. Given that the roadway is located in a highly-developed area of Chicago, it is highly unlikely that any competing, parallel freeways will be developed in the future. In the case of the Indiana Toll Road lease, the concession agreement set up a narrow competition zone alongside the toll road. The state may add short, limited-access parallel roads (e.g., local freeways), but if it builds a long-distance, freeway / expressway-standard road greater than 20 miles long within a 10-mile competition zone, there’s a formula for compensating the private sector for lost toll revenue if the concessionaire can prove the new road is causing a financial loss.

## **G. Losing Public Sector Control of Assets**

One of the prevalent myths about PPPs is that somehow government would be "losing control" of the asset as part of the deal. This really involves a fundamental misunderstanding of the nature of PPPs—namely, that their entire legal foundation is a strong, performance-based contract that spells out all of the responsibilities and performance expectations that the government partner will require of the contractor. And the failure to meet any of thousands of performance standards specified in the contract exposes the contractor to financial penalties, and in the worst-case scenario, termination of the contract (with government keeping any upfront payment the contractor may have paid).

PPP contracts are often several hundred pages long and may incorporate a number of other documents (e.g., detailed performance standards) by reference. The public interest is protected by incorporating enforceable, detailed provisions and requirements

into the contract to cover such things as:

- Who pays for future expansions, repairs and maintenance;
- How decisions on the scope and timing of those projects will be reached;
- What performance will be required of the private company (i.e., operating standards, safety, maintenance, electrical and mechanical systems, and many other requirements);
- How the contract can be amended without unfairness to either party;
- How to deal with failures to comply with the agreement;
- Provisions for early termination of the agreement; and
- What limits on user fees/rates or company rate of return there will be.

So government never loses control—in fact, it can actually *gain more control* of outcomes—in well-crafted PPP arrangements. For example, state officials in Indiana have testified that they were able to require higher standards of performance from the concessionaire operating the Indiana Toll Road than the state itself could even provide, precisely because they specified the standards they wanted in the contract and can now hold the concessionaire financially accountable for meeting them.

#### **H. Use of Upfront Proceeds**

Nebraska likely has few, if any, potential PPP projects that would generate a significant upfront payment from private investors (above and beyond the project's actual delivery costs). However, such projects may emerge over time, and policymakers should be prepared to consider the potential uses of such proceeds. The prospect of a multi-billion dollar “windfall” to government can present problems for public officials with divergent ideas on how the new money should best be spent. There are several acceptable uses of proceeds from privatization:

- *Interest earning trust fund:* Lump-sum payments can be invested in a dedicated trust fund, either through a financial institution or within a public pension system, which would provide annual interest payments to cover ongoing infrastructure operation and maintenance needs. For example, Indiana received an upfront \$3.8 billion payment for its 75-year lease of the Indiana Toll Road in 2006. The entire payment was placed in an interest bearing account—earning over \$300 million in interest alone in the first 1.5 years, prior to the onset of the recession in 2008—and dedicated that fund entirely to transportation infrastructure. In fact, the proceeds from the privatization deal allowed the state to launch a 10-year road construction program called Major Moves, which is delivering hundreds of needed road projects that the state simply couldn't have afforded otherwise.
- *Invest in infrastructure:* In Nebraska as in many other states, the gap between projected transportation revenues and projected needs is expected to continue to grow over the coming decades, so opportunities to “expand the pie” through the use of PPPs should be seriously considered by policymakers. The state could invest any upfront proceeds from PPP transactions back into other road and highway projects to address immediate needs, relieve congestion and improve long term economic competitiveness. Again, the Indiana Toll Road lease is emblematic of this approach—leveraging existing assets to help pay for the new ones that have no other viable funding source.
- *Pay down existing debt:* States and local governments pay billions in interest every year on their bonded debt. Paying this debt off early reduces both the total interest paid and the amount of debt serviced, improving the government's fiscal health. The choices could be understood as public debt for everyone or private capital investment and private risk for assets owned by the public. In fact, it's very accurate to say that asset leases can offer governments a very attractive choice: earning interest, rather than paying it.

- *Pension fund modernization:* Unfunded pension and retiree health care liabilities represent a large and looming threat to the majority of states, and taxpayers as a whole benefit when governments find creative ways to shore up these funding gaps without resorting to dramatic service cuts or tax increases. Upfront proceeds from PPP transactions could be used to fund a shift in the public pension system from defined-benefit to defined-contribution programs.

## **VIII. CONCLUSION**

Business as usual will not deliver the infrastructure Nebraska needs to meet the mobility and goods movement needs of the 21st Century economy. Nebraska policymakers should embrace the considerable potential of the emerging PPP paradigm for highway funding and operations. PPPs have proven to be valuable tools in leveraging private capital, improving efficiencies, and managing and developing the transportation infrastructure and services that are the foundation of our economy. Thus far, Nebraska has failed to utilize the power of PPPs to help solve its transportation problems, as states like Florida, Virginia and Texas are doing. The choice for Nebraskans now is clear: higher taxes and fees, or partnerships with the private sector.

Policymakers are no longer forced to choose between increasing costs to taxpayers or reducing services to motorists. PPPs, when implemented properly and carefully, can benefit both the State and its citizens. This new paradigm is emerging, and Nebraska's leadership must choose whether or not to utilize it. Opportunities for PPPs exist in Nebraska in many important facets of transportation, including constructing new highways, building new bridges, and competitive contracting for additional local and state road maintenance and operations. In fact, PPPs may offer a viable means of financing some of the state's large-scale capital improvement projects that currently lack a funding source, such as the \$175 million Highway 2/Lincoln South Beltway project and the \$145 million Highway 34/75 Missouri River Crossing.

Embracing PPPs would represent a new way of thinking for Nebraska and can help the state address its looming transportation funding shortfall in order to keep people and goods—and ultimately the state economy—moving forward.

## About the Authors

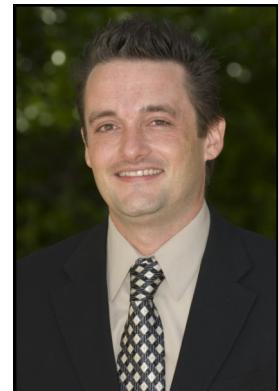
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Ybarra authored Virginia's Public-Private Transportation Act of 1995, considered the model PPP legislation in the United States. In 2001, Ybarra received the American Road and Transportation Builders Association's "Public-Private Ventures Entrepreneur of the Year Award" for her leadership in designing innovative infrastructure financing. She holds a Master's degree in Economics and a Bachelor's degree in Business Administration from the University of Nebraska, Lincoln.

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