

HORIZON

THE FUTURE OF TRANSPORTATION

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Public Funding vs. Private Financing

What Makes Sense and When?

Public Private Partnerships: Examining the Key Drivers of Value ::
The Public Versus Private Toll Road Choice in the United States ::
On the HORIZON—Dr. C. Michael Walton ::



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HORIZON

THE FUTURE OF TRANSPORTATION

Our traditional transportation revenue sources, the state and federal gas taxes, have served us well for the last five decades. But in recent years, they have lost their effectiveness due to escalating construction costs, alternative fuels, and improved fuel efficiency.

To stabilize our transportation finance system, maintain economic growth, and meet the demands of a growing population, transportation leaders must choose a funding solution from among a variety of potential revenue sources and finance options. The impacts of these decisions will be felt for years, thus there is considerable debate about how some of these options will affect motorists and the economy. While some may feel strongly that a particular option will help us reach our goals, there are others who disagree just as strongly.

In this issue, HORIZON presents two different perspectives on one such option: allowing private-sector investment in public infrastructure in exchange for the right to collect tolls or other charges, a strategy that reduces the need for public investment. First, Mark Florian and his colleagues at Goldman Sachs & Co. discuss why more public- and private-sector entities are exploring opportunities for public-private partnerships (PPPs) as a way to fund infrastructure projects and provide maximum value to the public. With an opposing view, Dennis Enright of NW Financial Group argues that government must be cautious when introducing private investment into the transportation system, particularly through PPPs, and must also ensure that the public interest is protected.

Also in this issue, On the HORIZON presents an interview with Dr. C. Michael Walton, who offers his perspectives on the state of transportation. Dr. Walton is a leading expert in the areas of transportation engineering and planning, intelligent transportation systems, and freight transport, having authored numerous articles and technical presentations in those areas.

We hope you enjoy this issue of HORIZON and we welcome your comments.

Sincerely,



Michael W. Behrens, P.E.
Executive Director
Texas Department of Transportation

Introduction

As many are well aware, traditional federal transportation funding alone is creating shortfalls for infrastructure maintenance and expansion nationwide. With most lawmakers avoiding calls for gas tax increases and state and federal officials shifting more responsibility to state and local governments, the future of transportation relies on exploring alternative funding options such as tolling and public-private partnerships (PPPs).

Historically, the private sector had an important role in the finance, construction, and operation of transportation infrastructure. Though this role declined during the 19th century, interest in once again including the private sector returned during the 1980s. In the years since then, support has grown for private-

sector proposals to build express toll lanes and enter into long-term leases to operate toll facilities.

But as more state and local governments consider entering into these partnerships, not everyone is convinced about their effectiveness, and PPPs have become a hotly debated topic within the transportation community.

Mark Florian, a managing director with Goldman Sachs and advocate of privatization, writes that through PPPs, governments can benefit from the profit-seeking motivations of the private sector. According to Florian, when private-sector resources and knowledge are applied, services can be provided at lower cost and the access to greater amounts of capital means faster completion of projects.

On the other side, Dennis Enright, infrastructure expert at NW Financial Group, challenges the argument that government cannot generate the same amount of capital as the private sector. Enright concedes that certain situations may be appropriate for a privatization strategy, but he believes that a better strategy is to keep the majority of transportation projects in the public sector and not rush into private concession arrangements.

PPPs are only a part of the financial toolbox, not a panacea to address the extensive needs of our state and local governments. However, informed public

discourse is a vital part of the decision-making process, so HORIZON presents both sides of the issue as a catalyst for further discussion.

We hope that you will find these articles thought-provoking and we encourage you to submit your thoughts and comments on either or both of these articles. We look forward to reading your feedback which we may publish in a future issue. Thank you for your interest and participation.

Please forward your remarks to: TxDOTHorizonEditor@dot.state.tx.us





Is the glass half full or half empty?

Public-Private Partnerships: Examining the Key Drivers of Value

By Mark Florian, Jeff Holt, and Jenn Frates
Goldman Sachs & Co.

As the state of Texas is acutely aware, one of the most complex and difficult sets of challenges facing state and local governments relates to the construction, financing and operation of much-needed transportation projects. Aging infrastructure, combined with continued population and economic growth, drives ever greater needs for the development of capital assets. At the same time that demand for government capital assets has increased, funding sources traditionally associated with many government capital programs have declined as a result of reduced federal funding levels and voter-initiated tax rollbacks. The increasingly difficult challenge for governments: How

to plan, construct, leverage and manage physical and financial assets to best meet the needs of their constituents?

During the past several years, the public-private partnership (PPP) approach has emerged in the U.S. as an alternative to the procurement, construction, financing, and operation approach traditionally used by state and local governments. Governmental authorities—rail, toll roads, transit systems, airports, ports, and lotteries—are actively reviewing the potential for use of the PPP approach. Several transactions have already been completed in the U.S. and a wide range of others are currently under consideration.



Concession amounts have been making headlines throughout the year.

Underpinning the PPP market is the recognition that the government and private sector each have different relative strengths and motivations. The government model is one that stresses service delivery and seeks to balance financial and non-financial measures of success. The private sector is growth- and efficiency-oriented with the goal of delivering superior customer service and maximizing shareholder value, so that private-sector interests are aligned with public-sector goals through market incentives or through the requirements of a concession agreement. Though many governmental asset types are being considered for PPP transactions,

this approach tends to work best where government assets and service intersect with a business type of environment.

RISE OF INFRASTRUCTURE AS AN ASSET CLASS

Recently, large global infrastructure funds have been willing to pay significant upfront amounts to governmental entities in such PPP transactions. These payments correspond to the private investors' evaluation of potential future net earnings (free cash flow) of the enterprise. The level of the upfront payments offered by the private sector on some of these concessions has become headline-grabbing and many municipal sponsors are considering transferring some or all of their operations to the private sector through long-term operating leases to take advantage of this "revaluation" of infrastructure assets.

...local municipalities...are capacity constrained and limited in the ways they can finance their assets.

Many institutional investors, particularly those with very long-term investment horizons such as pension funds, have significant pools of capital to invest. These investors control long-term capital and are looking to match their long-term liabilities (for instance, to retirees) in a long-term, relatively low-risk investment in a portion of their portfolio. For years, pension funds from Canada, Europe, and



Public infrastructure is a hot item to have in your pension fund.

Australia have been investing in public infrastructure for both a steady return and for the long-lived nature of these assets.

Lately, this investment direction has firmly taken root in the U.S. as well. Dr. Ryan Orr, executive director of the Collaboratory for Research on Global Projects at Stanford University, said, "In the past 18 months, there has been more than \$160 billion globally earmarked for infrastructure investments."¹ Fully leveraged, this represents over \$800 billion in proceeds potentially invested globally in infrastructure.

The managers of these funds understand that public infrastructure provides a more stable and less fundamentally risky investment than investments in

traditional corporate enterprise.

Revenue-generating infrastructure enterprises have the following characteristics that distinguish them as an asset class:

- Essentiality of purpose and broad-based public use
- Tangible assets
- Expectation of stable, long-term returns
- Barriers to entry through geographic conditions, operating/regulatory constraints, permitting requirements, or from the sheer size of the capital required to build a competing asset.

The infrastructure funds and the banks that lend to them are very focused on these characteristics when they analyze and value public infrastructure. It is these same characteristics that allow investors to accept both lower returns and a longer time horizon than investments in other asset classes.

COST OF CAPITAL COMPARISON: PUBLIC VS. PRIVATE

To more fully understand the emergence of public-private partnerships as a viable financing alternative, it is important to understand the different capital structures used by public- and private-sector owners. Most U.S. infrastructure has been financed using tax-exempt debt issued in the municipal bond market. The ability to use tax-exempt financing is an indirect federal subsidy created by the tax code to foster infrastructure

development. Because of the lower cost of borrowing that results from tax-exempt funding, private capital is often not competitive with the cost-of-capital provided in the tax-exempt market. On the other hand, the federal tax code also provides subsidies for privately financed assets in the form of depreciation and an interest deduction against income. In some situations, these tax provisions may substantially reduce the difference in debt costs between public and privately financed debt.

Public-sector financing has historically consisted of a combination of pay-as-you-go funding and tax-exempt debt (no equity). While it has been customary for state and local governments to finance the improvement and maintenance of their infrastructure, they are capacity constrained and limited in the ways they can finance their assets. Many states, cities, and local authorities have millions,

if not billions, of dollars of debt associated with each of their assets. In addition, the tax-exempt market, where these assets are traditionally financed, imposes strict limitations, including leverage limits, restrictive coverage requirements, and additional bond tests.

...the capital costs achievable in the private sector are more competitive than ever.

Private-sector funding for real assets has traditionally been a combination of debt and equity, with equity accounting for 20 percent to 30 percent of total investment. Given the higher risk and required returns associated with equity investment and the higher interest rate on taxable debt, the cost of funds for private investment has generally been higher than tax-exempt financing. However, the spread between taxable and tax-exempt debt has compressed significantly over the past few years. Combined with lower targeted equity returns, the capital costs achievable in the private sector are more competitive than ever. Depending on the specific

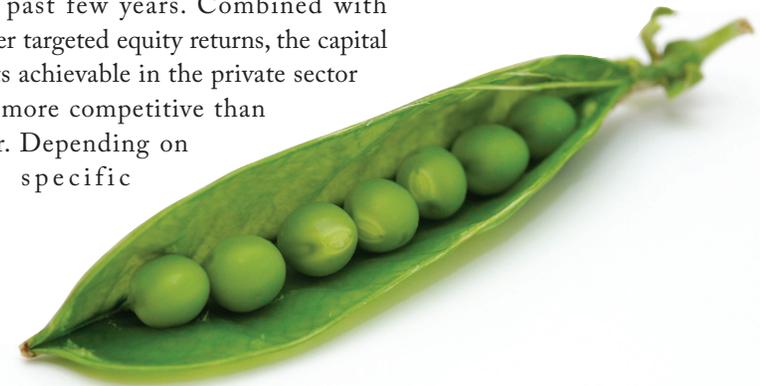
businesses involved, the tax package available to the private sector (interest deductions, accelerated depreciation, and other tax breaks) can go a long way toward bridging the gap between tax-exempt debt and private-sector financing costs.

OTHER KEY VALUE DRIVERS

Two other factors can also lead to increased realized value as a result of PPP methodology. One of these is the amount of operating efficiencies resulting from economies of scale often enjoyed by large private sector developers/operators, a key driver of private-sector value. Instead of operating just one or a limited number of assets, as is the case with most public enterprises, a private-sector concessionaire could place assets into a larger operating portfolio of similar assets. This provides for a number of potential advantages that increase the concessionaire's ability to



In recent years, the gap between tax-exempt financing and private sector capital costs has been closing.



PPPs allow the private sector to achieve economies of scale and group similar assets into large portfolios.

take on business risk, including creating operating efficiencies, competitive advantages, and asset diversification. Large infrastructure investors like Macquarie, Borealis, and Cintra have large portfolios diversified across regions and asset type and each is able to easily incorporate newly acquired assets.²

More aggressive growth assumption over a longer time horizon can also lead to increased realized value. Although the cash flows of the enterprise should be the same for both side, it is the private sector that is often willing to make more robust assumptions about regional and national economic growth and over a longer period of time. When the private sector is willing

to pay for an asset according to those more aggressive and long-term assumptions, the valuations assigned to these assets will increase. The private sector may be willing to pay large amounts upfront in order to control infrastructure assets based on projections that are far more aggressive than those used in traditional tax-exempt financing. In tax-exempt financing, the amount of debt that can be issued is based on conservative assumptions of future cash flows that are themselves based on historic revenues. The very high ratings of municipal bonds based on this conservative revenue growth assumption do result in low-cost borrowing, but this also limits the borrowing capacity of the governmental entity.

CHICAGO SKYWAY

Using the Chicago Skyway concession as an example, there was a significant difference between the projected cash flows received from the traffic consultant for the winning bidder compared to those received from the consultant for the City of Chicago. Using a 99-year time horizon and assumptions of traffic growth based on demographic and economic analysis, the private-sector bidder projected significantly higher revenues over time than did Chicago. The difference in net present value (NPV) between the bidder's projected cash flows versus those of Chicago through the year 2030 was approximately \$1.3 billion (using a 7 percent discount rate).³

In the Skyway concession, Chicago was able to shift risk and receive a substantial upfront payment:

- The city was paid upfront in full; the concessionaire alone bears the risk that these cash flow projections may not be realized.
- Through the concession structure, the city also received a substantial premium above its own valuation for the asset.

Private investors, on the other hand, will often look at potential revenues over a longer period and make more aggressive growth assumptions. Of course, different investors will make different assumptions about these factors, sometimes resulting in vastly different valuations for the same asset. The result is usually a higher valuation (or increased funding capacity) for governmental assets than a valuation from the traditional tax-exempt public finance model.

RISK TRANSFER

The private sector has other advantages that add to the equity and financing package it can assemble:

1. The ability to leverage substantially more than the public sector.
2. The length of such financial commitments, both from the debt providers as well as from the funds themselves, adds significant value.
3. The ability to monetize substantially 100 percent of the projected revenue, which can only be done in the equity arena.

These three components of risk assumption result in dramatic additions that allow the private-sector concessions to generate significant value relative to comparable alternatives using traditional tax-exempt structures.



Private investors are able to look over a longer time horizon and make more aggressive growth assumptions.

Concessionaires look ahead and forecast their estimate of future growth in all elements of a business: volume, labor cost, energy, etc. They model out the entire term of the concession and make projections and growth assumptions for each of these elements. Then they calculate a bid based on those assumptions. In most concession agreements, the private bidders pay the government a lump sum amount equivalent to the present value of the net income produced by the aggregate of those modeled assumptions. Just as important, the private concessionaire assumes all the risks of the business going forward, and if revenues or expenses differ from that initial forecast, or labor rates are lower or higher, the actual net profit may be higher or lower than what was

forecast. However, no matter the actual outcome, the government will be paid according to the original forecast.

...private investors and public entities are partnering to produce both needed infrastructure for citizens and acceptable returns for investors.

Public-private partnerships are an increasingly important approach to infrastructure delivery and operation worldwide. Across different industry sectors and using varying financial structures, private investors and public entities are partnering to produce needed infrastructure for citizens and acceptable returns to investors. Historically, most PPP activity has been outside of the U.S. Over the last five years, however, as public entities (state and local authorities) in the U.S. have been confronted with ever-growing infrastructure needs and declining public resources, interest in PPPs has gained momentum.

This awakening to the potential of PPPs to address U.S. infrastructure needs comes at a time when global investment funds are seeking the stable returns provided by infrastructure assets. Investors view infrastructure as a new and desirable asset class that provides the long-term, relatively low risk, and steady returns they seek. In particular, the return profile of infrastructure assets is well matched to the liabilities of the world's largest pension

funds. As these funds seek to diversify their infrastructure assets, they view the U.S. market as fertile new territory.

This confluence of capital availability from the private sector and capital needs in the public sector creates an opportunity for public entities seeking funding for infrastructure projects. Transportation has become the subject of intense global investor interest. The expectation of continued growth in major cities, coupled with the recent success of the Indiana Toll Road and the Chicago Skyway, have resulted in very high valuations for U.S. transportation assets, and the demand for such assets remains extremely strong.

WORKS CITED

Most of the article is sourced to proprietary Goldman Sachs analysis. Besides specific quotes, the other sources used for this article were the FHWA website on PPPs (<http://www.fhwa.dot.gov/PPP/>); P3 Americas/Information (www.p3americas.com); TollroadsNews (http://www.tollroadsnews.com); and the Reason Foundation.

- 1 Orr, Ryan J. "The Rise of Infra Funds." Global Infra Funds." Global Infrastructure Report, 2007.
- 2 <http://www.macquarie.com/com/index.htm>; <http://www.cintra.es/index.asp>; <http://www.borealisinfrastructure.com/>
- 3 Goldman Sachs calculations

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Jeff Holt is a vice president in the Public Sector and Infrastructure Banking Group at Goldman Sachs. Mr. Holt specializes in large surface transportation and infrastructure projects in the Western United States. In his 25-year public finance career, Mr. Holt has structured over \$30

billion in debt obligations, derivatives, and securities.

Jennifer Frates is an associate in the Public Sector and Infrastructure Banking Group at Goldman Sachs. Ms. Frates has been a member of the department's Infrastructure Advisory Group, which focuses on public-private partnerships, since its inception two years ago. Prior to that, Ms. Frates specialized in transportation financing.



The Public Versus Private Toll Road Choice in the United States

By Dennis J. Enright
Principal, NW Financial Group, LLC

"Realizing value from underutilized assets"

"New capital to solve the transportation funding crisis"

"Paying for the growth wedge"

"Ability to monetize future growth today"

These are but a few of the catchphrases that have been used to frame the issue of utilizing asset monetization through public-private partnerships (PPPs) to fund transportation projects in the United States. More recently, public policy makers have started to weigh their options, including both their relative economic values and the impact on government of ceding control of public

infrastructure assets for multi-decade time horizons. How should policy makers in the U.S. determine which structure—public or private—is in the best interests of the taxpayers and the toll payers whom they represent?

The current transportation funding crisis has been estimated at over \$1 trillion and growing. In the face of a lack of funding from traditional sources,



Voters prefer free roads instead of toll roads (even the new no-stop electronic tolls) which would mean an increase in the gas tax.

officials have looked to other financing solutions and particularly at PPPs as an alternative. Although the PPP concept is not new in transportation, its prior use has been focused more on project delivery through the outsourcing of elements of the design-build-operate-maintain process, but not a direct source of funding.

The real transportation problem to be solved in this country is not public versus private roads, but rather free roads versus toll roads.

Lately, the PPP moniker has been applied to projects that are actually asset sales under the guise of long-term lease agreements for as long as 99 years. The Chicago Skyway and Indiana Toll Road sales broke new ground by monetizing

the projected long-term cash flows of these roads for billions of dollars.

DEFINING THE PROBLEM

The real transportation problem to be solved in this country is *not* public versus private roads but rather *free* roads versus *toll* roads.

In America, our government has traditionally provided free roadways for travelers, particularly outside the northeastern part of the country. This free amenity was largely the result of the initiation of the Interstate Highway System in the 1950s and its establishment of the Highway Trust Fund that dedicated the federal gasoline tax to surface transportation. Over the years, the federal gas tax has provided a firm foundation for

highway funding; however, the lack of a gas tax increase since the early 1990s, improved vehicle fuel efficiency, and rising construction costs, have combined to cause a shortage of funds that would have allowed the public sector to keep building and maintaining free roads.

This problem has been driven by a lack of political will to raise the gas tax, despite the public's preference for free roads over toll roads. In 2005, the average U.S. driver traveled approximately 12,000 miles and the average fuel efficiency was 17 miles per gallon, which translates to 706 gallons of fuel purchased during the year. A one-cent gas tax increase would have cost the average driver just \$7.06 annually. This is likely the same amount that the driver would have paid on most toll roads to make three trips or less.

The transportation funding problem could be easily resolved by increasing the gas tax with little impact upon drivers' cost-per-mile-traveled to maintain free roads. At the state level, the highest gas tax in the country is in New York, at 42.4 cents per gallon, meaning the average New York driver pays only about \$300 per year to have free roads across the state. By any measure, the gas tax is the best taxpayer bargain created by government. But legislatures at both the federal and state levels have been stuck in a non-taxing mode for over a decade. The result is that the gas tax, though highly justifiable on a cost/benefit basis,

has not been measurably increased in most states or at the federal level.

The delay in addressing this funding shortfall left states in the position of canceling desired projects and prioritizing needed ones. Then suddenly, along came the Chicago Skyway and Indiana Toll Road deals. After the fever pitch of these two deals, other states began considering the private-sector solution as their savior.

Many elected officials have been persuaded that the private sector will overpay for infrastructure assets and produce an otherwise unavailable cash windfall to state governments.

Today, most of those states are now taking a more deliberate and thoughtful review of their options and finding that maybe public-private partnerships are not the optimal approach. Recently, this comparison came to a head in Texas over the State Highway 121 (SH 121) deal, where the public tolling authority was able to put a deal on the table worth significantly more than the private deal. However, the U.S. Department of Transportation is objecting to Texas accepting the public offer. Regardless of the outcome of this particular Texas road, the process has finally crystallized the reality that a public approach to asset monetization is likely to provide greater value than a private approach.

ROLE OF THE COST OF CAPITAL AND LEVERAGE

In valuing any asset, the cost of capital that the buyer carries is the dominant variable in determining asset value. An “all cash” buyer can theoretically decide to accept any cost of capital no matter how low if they truly want to own a particular asset. But in the world of toll road concessions, there is no incentive to accept below-market returns on an investment. Each toll road concession is established as a separate business entity and must be able to produce economic results that prove to outside investors that they will achieve the expected returns on their investment. Table A (below) outlines the cost of capital differences between public and private entities.

The key control on capital cost is the credit discipline imposed by the lending

community which provides the funding for 70 percent to 85 percent of the deal. These high-leverage ratios are extremely important to the cost of capital and effectively drive the valuation for the asset since the cost of equity is so high. In their 2006 valuation of the Illinois Tollway system, Credit Suisse indicated that the expected cost of equity for a toll concession deal would be 7.10 percent above the 10-year U.S. Treasury bond. Recently, Cintra revealed its expected equity return on the Texas SH 121 project at 12.5 percent, which was 7.87 percent above the ten year U.S. Treasury bond at the time. Debt funding for a private concession deal has been typically about 80 basis points above these 10-year bonds, or about 5.43 percent at the time of the SH 121 deal. Thus, it is fair to say that equity funding from the private sector is more than twice the price of debt funding. The key to lowering

	Weighted Average Cost of Capital	Tax Exempt Debt	Taxable Debt	Deferred Debt	Subordinated Debt	Equity
Public Tax Exempt						
		US Treasury plus -0.40%	US Treasury plus 0.80%	US Treasury plus 0.30%	US Treasury plus 0.35%	US Treasury plus N.A.
Percent of Funding	4.81% 100%	4.60% 70%	5.80% 0%	5.30% 30%	5.35% 0%	N.A. 0%
Private Taxable						
		US Treasury plus 0.00%	US Treasury plus 0.80%	US Treasury plus 1.90%	US Treasury plus 3.00%	US Treasury plus 7.10%
Percent of Funding	7.17% 100%	5.00%	5.8% 70%	6.90% 10%	8.00% 0%	12.10% 20%

Table A

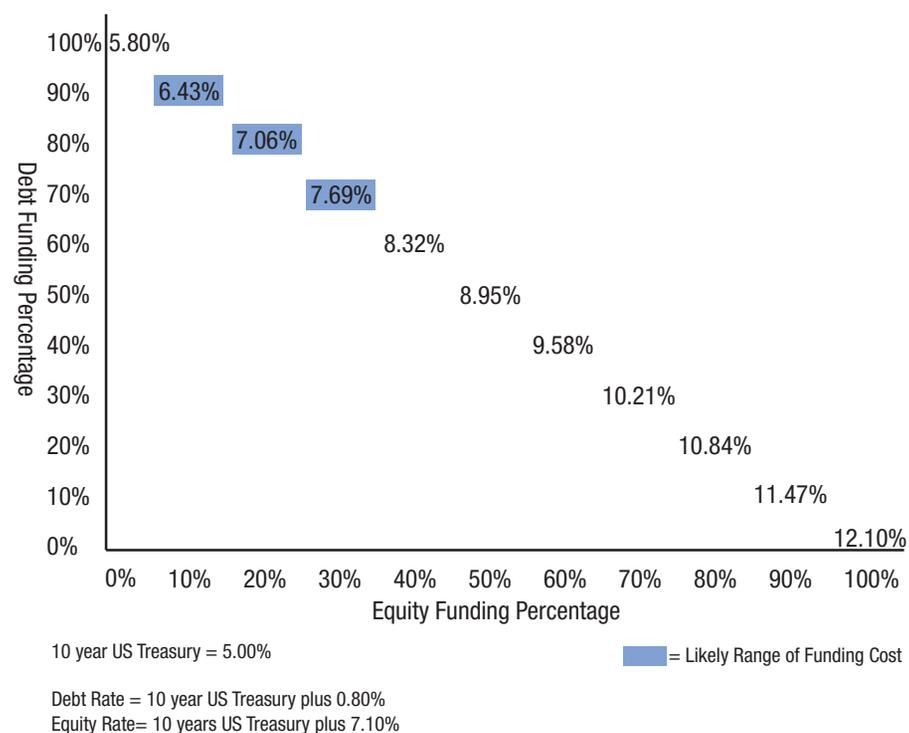


Table B: Impact of Leverage on the Cost of Capital—Private Concession Deal

a bidder’s cost of capital and thus being able to bid a higher price for an asset is to maximize the leverage employed. Table B (above) highlights the importance of leverage on the cost of capital.

In contrast to private concessions, public monetizations are capable of seeking the lowest cost of funds available: tax-exempt bond finance.

How powerful is the impact of the cost of capital upon valuation? Hypothetically, assume there are the three bidders for an

infrastructure asset with \$100 million per year of existing free cash flow for debt service/investment return with a 50 year concession period at a flat 3 percent annual toll increase. What could each bidder afford to pay? If traffic growth is modest and only able to absorb cost escalation, Table C (next page) illustrates the impacts for each bidder.

In contrast to private concessions, public monetizations are capable of seeking the lowest cost of funds available: tax-exempt bond finance. The ability of publicly

Bidder	Leverage	Cost of Capital	Bid Price in Billions	Differential vs High Price	Percentage Differential
1	90%	6.43%	\$2.35		
2	80%	7.06%	\$2.11	\$0.24	10.31%
3	70%	7.69%	\$1.90	\$0.45	19.02%

Table C

Bidder	Leverage	Cost of Capital	Bid Price in Billions	Differential vs Public Bid	Percentage Differential
Public Bid	100%	4.75%	\$3.25		
1	90%	6.43%	\$2.35	\$0.90	28%
2	80%	7.06%	\$2.11	\$1.15	35%
3	70%	7.69%	\$1.90	\$1.35	42%

Table D

owned projects to access this lower cost of funds allows for either higher valuations or the same valuation with lower toll rates. Public borrowers can also easily access fixed-rate, long-term debt and thus avoid the risk premium of loan rollovers that is embedded into the credit discipline applied to private bank loans. In today's market, the cost of funds for a public deal would be lower than a private concession deal. Table D (above) illustrates how a public deal compares to the three bidders in Table C.

I have labeled this increased dollar value associated with a public monetization the "public ownership dividend."

The recent competition for Texas SH 121 between a public and a private bidder highlights how much this "public ownership dividend" can produce in a real world setting. My analysis of this deal in Table E (below) provides a side-by-side comparison updated to reflect the current status of each of the three hypothetical bidders.

	Public Bid	Private Bid	Differential Bid	Percentage Differential
Concession Fee Up Front	\$2.500	\$2.100	\$0.40	19%
Cost of Road Construction	\$0.698	\$0.560	\$0.14	25%
Marketable Security Upfront	\$0.833	-	\$0.83	100%
Ongoing Payments (NPV)	\$1.300	\$0.700	\$0.60	86%
Total	\$5.331	\$3.360	\$1.97	59%

Table E: Texas SH 121 Bid Comparisons

HOW TO CHOOSE

The government's use of PPPs for project delivery in the transportation sector is already a well-known tool, but using these partnerships for ownership of roadways is not the optimal policy for several reasons:

1. The U.S. has a tool that is unique in the world: access to a massive debt market based on government bonds issued for public-purpose projects. This allows investors to earn interest free of federal taxes and reduces the cost of capital available to the public sector by approximately one-third.
2. The U.S. has a long history of experience in running public enterprise infrastructure with well-experienced professionals, particularly in the toll road sector.
3. Unlike other parts of the world, there is no shortage of U.S. capital to fund public infrastructure.
4. Toll road users are the ones paying for asset monetization; doing such a deal with non-public ownership will result in tolls 20 percent to 30 percent higher than a public deal of equal size.
5. Since government is not driven by a mission to maximize profits, tolls can be kept lower than expectations

if future traffic increases are above expectations. A private owner has no incentive to provide this benefit to toll road users.

6. Toll roads in the U.S. have long been a key to state economic development. Private ownership would require future negotiations to induce economic development missions as simple as adding a new exit.

On the other hand, there are situations where a privately owned toll road concession may be appropriate. I would suggest the following guidelines for decision makers when weighing the public versus private toll road choice:

- When a public toll road authority exists and the state wishes to monetize either an existing asset or a yet-to-be-built toll road, it is best to allow the public authority to develop a financing plan that meets the state's needs. This will result in either lower tolls or greater funding by a wide margin over a private concession model.
- The public toll road authority should be encouraged to use private partnership arrangements, particularly for project delivery and operations.
- In areas without an existing public toll road authority, using a private concession approach would be a logical alternative. Government officials must

realize, however, that they pay a price for this choice and should conduct an independent analysis of the cost before taking action.

- For newly proposed, higher risk toll roads, such as the Trans-Texas Corridor,¹ a private option is preferable and the ideal risk transfer choice for the public sector to unload.
- When a private concession is used, the state should set up a regulatory scheme similar to a regulated utility where equity returns are monitored and controlled to avoid windfall profits at the expense of future generations of toll road users.

SUMMARY

Transportation funding is a difficult public policy choice facing elected officials. On one hand, they can increase the broadly based and highly equitable gas tax at both the federal and state levels. This will assign the costs equally to all drivers depending upon the amount of gas they purchase and miles logged on the roadway network.

On the other hand, where raising the gas tax is not an option, they must prepare to convert free roads to toll roads and expect that new corridors will be built as toll roads.

The effective result of asset monetization



When considering all of the options for relieving congestion, we must always think of the motorists first.

for toll roads is to charge the users a toll that pays for the costs of maintaining free roads elsewhere in the state (or even non-transportation needs in some cases).

Any monetization, public or private, will require that decision makers consider the economic impacts of their decision in their own region. When deciding between imposing charges on a given corridor versus roadway users as a whole, they must evaluate the burden that their decision will impose on those who will ultimately pay the price—the motorists.

However, before the decision is made to rely on toll roads, these decision makers must understand that while PPPs may offer economic advantages in project delivery and even in operations, their use in the ownership of toll road assets will

actually increase costs and divert funds from the public transportation network.

WORK CITED

- 1 For information on the Trans-Texas Corridor, please visit www.KeepTexasMoving.com

Dennis Enright has over 25 years of experience as a public finance investment banker and has handled over \$30 billion in debt financing over a broad array of infrastructure financing needs, including transportation, public-private partnerships and project finance. He has spoken on the topic of toll roads at many national conferences and forums, including before Congress and state legislative committees. NW Financial Group, LLC serves both the private and public sectors of infrastructure finance and has been involved in over \$1 billion in public-private partnerships.



ON THE HORIZON

Earlier this year, Dr. C. Michael Walton sat for a brief interview with HORIZON shortly after meeting with U.S. Secretary of Transportation Mary Peters in Washington, D.C.

He is a professor of civil engineering and holds the Ernest H. Cockrell Centennial Chair in Engineering at The University of Texas at Austin. In addition, he holds a joint academic appointment in the Lyndon B. Johnson School of Public Affairs. He is also the 2007 chairman of the American Road and Transportation Builders Association (ARTBA).

Dr. Walton is a member of the National Academy of Engineering as well as the

Board of Governors of the Transportation and Development Institute of the American Society of Civil Engineers. He is also a founding member and a past chairman of the Intelligent Transportation Society (ITS) of America.

For more than 30 years, Dr. Walton has pursued a career in transport policy and engineering analysis. A native of Hampton, Virginia, he received a B.S. in civil engineering from the Virginia Military Institute. Following four years as an Army officer he returned to academia, where he earned both a Master's and a Ph.D. degree from North Carolina State University.

HORIZON: You recently met with Secretary of Transportation Mary Peters. How was that meeting?

Dr. Walton: Terrific, I regard her highly. She's a superb individual who represents the U.S. DOT and the national transportation interest very well. We had an excellent discussion about the reauthorization activity and about the commission (National Surface Transportation Policy and Revenue Study Commission). As secretary, she now chairs that body. We talked about some of the initiatives and some of the testimony that I gave at the New York commission hearing in 2006. Then she talked about some of her priorities, one of which is freight. We spent quite a bit of time talking about the freight program.



The movement of goods and people is always on the minds of transportation planners.

HORIZON: What sorts of topics did you discuss with her?

Dr. Walton: She was very much interested in a new initiative that is being promoted called Critical Commerce Corridors ("3C") Program that I was instrumental in developing. It's a concept aimed at improving U.S. freight movement and emergency response capabilities by identifying roadways and other surface transportation facilities in need of upgrading or expansion. Once identified, the federal government, state DOTs, as well as other local and regional government entities, would work together to begin funding the improvements necessary to these critical corridors to ease the flow of freight. I believe new user fees imposed on the shipment of freight

should fund this program. These would be separate from existing user fees in the current federal aid highway program. We talked about the importance of maintaining the core programs that the federal government has through the transportation bill, but also recognizing that the user fees for that program need to be sustained and increased.

This 3C program could include PPP (public-private partnerships) or other funding mechanisms, but it would basically be a "firewalled" dedicated revenue source of funds to the development of these designated freight corridors over the next 25 years. If we started in the new reauthorization, then by 2035, we would have the connectivity for the new surface freight program.

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HORIZON: It sounds like freight is a priority for her.

Dr. Walton: Yes, it is. Of course, congestion and safety are her top priorities, but freight is right up there. In talking about congestion, freight fits into that discussion because in metropolitan areas and in certain other locations,

congestion affects the freight carrier as much as it does the individual user. Congestion costs them time, money, and effort just as it does for automobile traffic. The freight community has indicated a willingness to support an initiative to help get them out of congestion and be able to move their freight more expeditiously.

HORIZON: What makes someone want to think full-time about transportation?

Dr. Walton: Well, it's an inevitable part of our everyday life and from my experience when I completed undergraduate school at Virginia Military Institute, I had a military commitment and I served in the U.S. Army as a regular Army officer in the U.S. Corps of Engineers and left the service after four years as a company commander of combat engineers. Seeing other parts of the world, I realized that transportation was an integral part of everything we do and I was very much interested in urban form, cities and transportation. At that time, the U.S. was having problems in our urban areas and while [I was] stationed in Washington, D.C. at the U.S. Army engineering school, we trained for managing urban riots. I was intrigued by opportunities of urban renewal, economic development, and revitalization of our urban spaces and found that transportation is at the heart of those goals. When I considered graduate programs, North Carolina State University had a program that linked both transportation and urban

planning. While I had planned to get a Master's degree in each, some of the faculty encouraged me to focus on a Ph.D program with a minor in city planning, economics, planning law, and public administration.

In graduate school, I did an internship in the office of the Secretary of the U.S. DOT, which was at the time still a fairly new entity, having been created only two years before. I was very much interested in transportation policy and after completing my Master's studies, I was just beginning work on my Ph.D. when I worked for the North Carolina State Highway Commission. My academic advisor turned out to be Bill Babcock, the former executive director of that agency who had returned to the university to resume teaching.

After graduation, I was invited to come to the University of Texas where I met and briefly shared an office with (former Texas Highway Department Executive Director) Dewitt C. Greer. He'd just retired as head of the department after 25 years or so and he was on campus as an adjunct professor at UT, so I was fortunate to get to spend time with him.

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HORIZON: Are you the first academic to head ARTBA? Do you feel your academic background sets you apart from your predecessors?

Dr. Walton: That's correct. I'm the first academic and the first resident Texan, which I'm very proud of. I did have some reservations about the position being the first academic, but as head or the chairman of several organizations like the executive committee at TRB (Transportation Research Board) and chairman of ITS America, I've been fortunate to have had experience working with private sector and government officials as well as other academics.

ARTBA is very much focused on advocacy in transportation and highly focused on the state of highway and transportation construction and materials. Though there is far more involvement by the private sector, there are public sector representatives and Texas has some key people in positions that are extremely important to the vitality of the organization and what is accomplished.

I got involved in ARTBA after ISTEA and TEA-21 legislation were passed because I realized that ARTBA had been at the table during those discussions but little emphasis was given to the importance of research. As an academic and someone who believes that the techniques and knowledge we use today were yesterday's research initiatives,

therefore the technology, procedures and tools we use tomorrow are today's research activities. The nation needs a strong and vital research program.



At the time, ARTBA was more focused on the traditional core programs—capital improvements, maintenance, and operations—but not research. I got involved with the idea that I would learn how the process worked so I could be assured that research interests were represented when policy decisions were being made.

HORIZON: What do you see as ARTBA's role in the national transportation debate?

Dr. Walton: The ARTBA membership is a cross-section of many different sectors and they are totally focused on the nation's transportation system. Our members have strong, positive relationships with members of Congress, but we are strictly bipartisan and show favoritism only to those who recognize the importance of a viable transportation system nationwide. One of my goals as chairman this year is to advance the transportation enterprise. We get criticized for the earmarking that goes on in the transportation program, but that's being done by Congress itself and advocated by us.

ARTBA has a very important role as an organization that can speak and be actively engaged at the federal level to make sure that transportation interests are represented. ARTBA is now working

with the U.S. Chamber of Commerce, American Association of State Highway Transportation Officials (AASHTO), the American Public Transportation Association (APTA), the American Trucking Association (ATA) and others to build a unified coalition for the next reauthorization that gets us all on the same page with a common vision.

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HORIZON: You teach an Urban Transportation class. As a professor, what are you teaching students now that you weren't teaching them 10 years ago?

Dr. Walton: It is a fascinating and dynamic issue. It continues to evolve in all aspects of the topic. The importance of interdisciplinary relationships is critical to the subject. For example, I've had a local newspaper reporter come in and talk to the students about how they can better understand the role of the media and how to communicate effectively with reporters and journalists. This is an example of a topic I would not have introduced when I first began offering the course 30 years ago.

We also bring in developers and have them talk about some of their major mixed-use projects in an urban area.

How they go about planning a project? With whom do they have to work? What are the transportation-related issues that concern them? I didn't do this when I first started. I focused more on the traditional approaches and concepts of urban transportation planning, but now I realize students need to know more. They develop strong skill sets in transportation planning, methodologies and techniques, but I'd like them to understand the implications of their decisions. I think they will be more effective.

My classes attract students from engineering, planning, and public affairs programs. We have these students from different disciplines participate in team exercises because I want them to understand team dynamics and working with those from other fields. They are required to prepare report briefs and to deliver presentations in their work.

Consultants have repeatedly told me that they can find people who are technically competent, but it is far more difficult to find those who understand implications of a plan and to effectively communicate it to others.

HORIZON: As toll tags become more common, what other emerging technology will change the mobility experience?

Dr. Walton: When I led ITS America, I convened a meeting between officials

at the US DOT and General Motors (GM) to talk about the future. It was GM's perspective that the vehicle should become the sensor of tomorrow's highway. Today, the communication technology and linkages between the vehicle and the highway infrastructure are readily available. There are several hundred sensors of various kinds on the average car today, collecting information that can be communicated to other vehicles, to the roadside and to other designated data management locations for a variety of uses.

The smart vehicles that are coming out today have in-vehicle navigational systems that are only beginning to demonstrate the future possibilities.

Auto manufacturers worldwide and various governments are participating in a program called Vehicle Infrastructure Interface ("VII") to develop a common vision for the future of transportation that the government and private sector can follow. The issue is the manufacturers want to keep making innovations but they also want a marketplace for these innovations. To do that, government must also be willing to invest in transportation infrastructure, thus the necessity of a common vision and a unified roadmap.

In the midst of that there are also safety-related technologies that are emerging. I'm excited about the possibilities. There's a general commitment in organizations like ITS America, members of AASHTO, and a variety of countries like Sweden



that have adopted an ultimate goal of zero highway fatalities. I think that's the future. There are vehicle prototypes today that cannot be crashed, that prohibit the driver from striking an object.

HORIZON: A lot of people turn to you for guidance, who do you turn to?

Dr. Walton: I've been fortunate to serve on a number of boards and have met many terrific people and I listen to them. I get ideas from everywhere—my students, colleagues, associates, and those with no knowledge of the business. I also travel quite extensively and I'll talk to local residents and people I visit in cities like London, Dubai, Nagoya, Dalian, Singapore and Beijing. As the chair of the Urban Transportation Commission in

Austin for 10 or so years, I found that taxi operators are a great resource. Whether I'm home or traveling, I talk to cabbies, if I can, about what they think is good and bad about the city's traffic and other traffic issues.

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HORIZON: Are there trends you think those in transportation are not paying attention to?



Dr. Walton: That's a very good question. I don't think there is enough recognition of how significant the movement of freight is to our international competitiveness. There is an economic vitality associated with freight issues. For example, if a freight-related event happens in the port in Los Angeles-Long Beach, California, then Texas feels the effects right away and vice versa.

There are institutional changes that I'm not certain we're monitoring as closely as we should. These are organizational changes that will affect both the private and public sector. One of those is the changing role of government and the expanding shift to more outsourcing. The privatization that we're seeing now has been going on in other parts of the world for some time. In 1995, I was part of a U.S. delegation that went abroad to study the changing role in transportation worldwide. We looked at countries that separated transportation policy development from delivery of services both nationally

and regionally. Governments were changing their transportation structure and privatizing a lot of the services. In the wake of bankruptcy, New Zealand essentially reformed their government and created a new structure and system. They outsourced or privatized initially all government maintenance, operations, and construction duties almost overnight. In Sweden, a parliamentary system, the government reorganized itself. The Swedes reduced the number of city and county governments, sold off government assets and privatized many government services. Some governmental units were given time to show they could compete otherwise they went out of business.

I don't think most people are aware of how much time we spend thinking about issues like these. I think TxDOT is one of the few state DOTs that is engaged, and its Government and Public Affairs Division was set up to think about issues like these, which I thought was a very good move. Other states aren't there yet.

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