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***Meeting the TEA-21 Reauthorization Challenge:
Will System Performance Continue To Be
“Gone With The Wind”?***

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**Meeting the TEA21 Reauthorization Challenge:
Will System Performance Continue To Be “Gone With The Wind”?**

Geoffrey S. Yaremaⁱ

INTRODUCTION

For the Second National Conference on Transportation Finance in Scottsdale, Arizona, August 20-23, 2000, the esteemed team of Brian Grote, Jeff Parker and David Seltzer prepared an excellent paper on reauthorization opportunities.ⁱⁱ As the touchstone for their examination, they looked to the madcap, though ultimately frustrating, comedy film “Planes, Trains and Automobiles,” seeing this comedy antic as representative of a haphazard U.S. transportation system in need of serious fixing.

In my singular effort to follow in their collective august footsteps, the movie theme I draw upon is the classic film “Gone With the Wind.” That triumph of cinematic effort left little room for comedy in portraying an economic system at a crossroads, flawed in its goals and struggling to rebuild a new economic base. At this point in the history of our surface transportation network, the United States may be at its own crossroads, struggling to maintain system condition and performance, with goals not clearly stated and needed resources yet to be identified.

This resource paper, intended to spur discussion for the Third National Conference on Transportation Finance, has gathered together material

generated from numerous Congressional hearings, from actual experience in project delivery at the state and local level and from important academic and economic analyses completed since the 2000 conference. The issues raised here include:

1. What should be the goal of reauthorization?
2. Has TEA-21 met the goal of maintaining system condition and performance?
3. What funding level will reauthorization need to establish to maintain condition and performance?
4. What measure can reasonably be taken to achieve the goal?

This background, together with the presentations and discussions the Conference will foster, hopefully will help conference participants come to a consensus on these issues and become effective advocates for the solutions.

1. WHAT SHOULD BE THE GOAL OF REAUTHORIZATION?

Prior to TEA-21, congressional funding decisions for the federal highway and mass transit programsⁱⁱⁱ were driven by the budget. Both programs were part of the domestic discretionary budget category and the annual investment level was set by what the overall domestic discretionary cap could afford. This approach left no link to the revenues coming into the Highway Trust Fund and no link to what the nation needed. As a result, into the early 1990s, road and bridge conditions in the United States deteriorated and traffic congestion grew worse.

Pete Ruane, the President of the American Road and Transportation Builders Association (“ARTBA”), reminded Congress this past summer that TEA-21 fundamentally improved on this process by assuring that all Highway Trust Fund revenues would be spent on transportation investment.^{iv} In effect, highway and mass transit investment levels under TEA-21 became revenue-driven. Thus, as Highway Trust Fund revenues grew during the late 1990s, federal transportation investment experienced strong growth. What TEA-21 did not achieve is the establishment of a direct correlation between need and investment levels.

That could well be the key challenge that TEA-21 reauthorization presents to Congress. What goal should drive the establishment of funding levels for surface transportation?

In March 2001, ARTBA published “A Blueprint For 2003 Reauthorization of the Federal-Aid Highway and Mass Transit Programs.”^v After over a year’s effort involving numerous committees, including one I co-chaired, ARTBA submitted for consideration the following goals for the 2004-2009 authorization program:

- First, cutting the number of deaths and injuries on America’s highways through targeted capital investments.
- Second, ensuring that traffic congestion for the American public and business community does not get materially worse.

- Third, ensuring that the structural condition of federal-aided highways, bridges and transit systems do not get materially worse.

It is important to note that these goals do not go so far as to seek improvement to the performance of the transportation network. They seek improved safety and maintenance of existing condition and performance.

Soon after ARTBA threw down this gauntlet, in August 2001, the AASHTO-AGC-ARTBA Joint Committee of which I was a member, held their annual meeting. An important cooperative effort since the 1920's, the Joint Committee offered its support for an increase in annual federal investment in highway and transit programs sufficient to maintain not only existing conditions, but system performance as well.^{vi}

I submit the ARTBA goals for the consideration of the Conference participants. Let us now examine the extent to which we are currently meeting these goals.

2. HAS TEA-21 MET THE GOALS OF MAINTAINING SYSTEM CONDITION AND PERFORMANCE AND IMPROVING SAFETY?

During the last week of September, 2002, the public got its first peek at two long-awaited assessments of U.S. transportation system condition and performance: the U.S. Department of Transportation's ("USDOT's") biennial Conditions and Performance Report; and the American Association of State

Highway and Transportation Official's ("AASHTO's") Bottom Line Report. While the USDOT report has not been actually released, Federal Highway Administrator Mary Peters offered a summary of its conclusions September 30, 2002 in testimony before the Senate Environment and Public Works Committee.^{vii} AASHTO issued its Bottom Line Report on September 26, 2002.^{viii} Both reports use virtually the same data and modeling techniques. The differences in their conclusions reflect only variations in base years, time spans and modeling assumptions.^{8A}

At the heart of the Conditions and Performance Report are three measures for highways and bridges: the cost to maintain in current condition; the cost to maintain at current performance levels; and the cost to improve to the point where investment would no longer be cost-effective, assuming available funds.

In her testimony, Administrator Peters reported that TEA-21 has achieved some notable successes. The period between FY 1998 and FY 2002 witnessed a whopping 48% increase in annual federal highway spending. With this influx of new federal dollars, state and local governments resisted the temptation to redirect their discretionary resources elsewhere and actually increased their transportation spending as well. In fact, the state share of highway capital investment from 1997 through 2000 increased to more than 60% of the total for the first time since 1959 and remained above that level through 2002. Thus, TEA-21 saw combined investment in highway infrastructure by all government

levels increase sharply – 14% in constant dollars between 1997 and 2000 and an even larger percent increase in pure capital spending on highways.

What has this money bought? As they have become leaner, meaner and more efficient, State DOTs directed their investments primarily toward maintenance of the existing system, possibly because system preservation projects frequently have shorter lead times and are often less controversial than system expansion projects.^{8B} This increase in system preservation investment, Administrator Peters notes, has had a profound effect on the overall physical condition of the nation's highway and bridge infrastructure. The federal-state partnership during TEA-21 has generally provided the resources necessary to meet the cost to maintain the system network. Similarly, the 2002 Conditions and Performance Report, Administrator Peters tells us, will document continued improvement in the area of highway safety. She reports that highways have become safer even as travel sharply increased, with the fatality rate per 100 million vehicle miles traveled decreasing from 3.3 in 1980 to 1.5 in 2000.

Despite these gains in system maintenance and highway safety, one of the three goals we have set forth above for discussion clearly has not been met. Operational performance of infrastructure has steadily deteriorated over the past decade.

While we have no statistical means of monitoring highway performance,^{8C} AASHTO recently testified that increasing congestion and declining performance

are common. The Texas Transportation Institute's 2002 Urban Mobility Report was published earlier this year.^{ix} The report examines congestion in 75 metropolitan areas and concludes that in all size metropolitan areas, congestion lasts for longer periods of time and affects more of the transportation network in 2000 than in 1982. During that period, average annual delay per peak road traveler climbed from 16 hours in 1982 to 62 hours in 2000. Delay over that period more than quadrupled in areas less than one million people.

Increasing congestion of this magnitude is not difficult to understand. At the same time, as states focused spending on the important job of condition maintenance, with little system expansion, the period between 1990 and 2000 saw vehicle miles traveled ("VMT") increase from 2.1 to 2.7 trillion. AASHTO predicts another 600 billion in VMT growth between 2000 and 2010.

Thus, we can and should credit the TEA-21 era with important, hard-fought gains - - maintained condition and improved safety. Yet, the third leg of the performance goal - - maintained performance - - remains even a more distant accomplishment. In fact, in Cape Canaveral, where I grew up as a child of the space program, we would respond to a situation like this by saying, "Houston, we have a problem."

3. WHAT FUNDING LEVEL WILL REAUTHORIZATION NEED TO ESTABLISH TO MAINTAIN CONDITION AND PERFORMANCE?

According to Administrator Peters, the forthcoming Conditions and Performance Report will project that covering the cost to maintain highways and bridges will require average annual investment levels at \$75.9 billion for the 2001-2020 period, a 17.5% increase over the \$64.6 billion of capital spending in 2000. AASHTO's Bottom Line Report, using the same data but with variances as mentioned earlier, projects the need for an annual capital investment of \$92 billion by all levels of government to cover the cost to maintain current condition and performance.

ARTBA believes Administrator Peters' \$75.9 billion investment figure is an understated target for three reasons.^x First, it points out that the figure is stated in year 2000 constant dollars and recommends that the report provide the estimate in inflation adjusted dollars. Second, the \$75.9 billion figure, while potentially covering the cost to maintain existing condition, will not cover the cost to maintain performance. Third, it explains that the report findings are based on an assumption that traffic growth will decline from 3% annually over the past 20 years to 2% annually over the next 20 years. Because less traffic means fewer highway and bridge repairs and less need for new capacity, understating travel growth is dangerous. ARTBA argues that every Conditions and Performance Report has underestimated travel growth and submits data suggesting that

traditional travel growth would increase annual investment needs almost 50% to \$120 billion per year.

AASHTO's Bottom Line Report does not assign a federal share to its estimate of \$92 billion required in annual capital investment over the next 20 years by all levels of government, nor does it factor in future price inflation. ARTBA points out in its recent testimony that, if one assumes the Federal share of total highway capital investment, FY 2004-09, will continue to be about 47% - - the average share of the past twenty years - - and that annual inflation will be 2.4% - - the estimate used in the President's FY 2003 budget - - the Bottom Line Report suggests that the Federal share of the investment needed "just to maintain" year 2000 safety, structural and traffic congestion conditions would be \$47.7 billion in FY 2004, rising to \$53.6 billion in FY 2009.

The current projections of the Congressional Budget Office say that the Highway Account of the Highway Trust Fund, which took in \$30.3 billion in FY 2000, will only support a program that spends \$35-36 billion annually. Moreover, Administrator Peters states that, if investment were to remain at an anticipated levels through 2003, recent trends observed in the condition and performance of the highway system would continue - - physical conditions and safety performance would improve, but the operational performance of the highway system would further deteriorate. Average speeds would decline, the amount of delay experienced by drivers would increase and the average length of congested periods on the nation's urban principal arteries would increase.

4. WHAT MEASURES CAN BE TAKEN TO ACHIEVE THE GOAL?

If we stick to the goals of covering the cost to maintain system condition and performance and improved safety, FHWA, AASHTO and ARTBA would all agree that maintained performance will not be reached without reauthorization funding at levels greater than TEA-21. Where might this money come from?

While there is no single panacea, this paper addresses three categories of revenue sources: enhancements to the fuel excise tax; tax credit bonds; alternative revenue sources; and tolling.

A. Enhancements to the Fuel Excise Tax

Currently, fuel taxes provide approximately 90% of the revenues deposited in the Federal Highway Trust Fund. Any moves to increase the gas tax are certainly fraught with political difficulty. Congress has raised the tax levels on motor fuels on five separate occasions, but in only two of those instances (1959 and 1982) was the need for more infrastructure the reason for the increase. So where are the "low-hanging fruit"? In a recent article, *Transportation Weekly* summarized three that have received significant attention in the run-up to reauthorization: (1) indexing the tax for inflation; (2) capturing interest on the Highway Trust Fund; and (3) changing the federal tax structure on gasohol sales.^{xi}

Indexing the tax to compensate for inflation would reverse its eroding buying power and eventually would provide significant revenue benefits. The tax writing committees are, however, famously hesitant to cede any of their revenue raising authority to some kind of automatic formula like a CPI-based cost index.

According to the General Accounting Office, the federal tax treatment on gasohol sales has lost the Highway Trust Fund \$6 billion during TEA-21, a loss that will grow to \$20 billion, if not fixed, over the next 10 years. Gasohol (gasoline mixed with ethanol) tax policy has two effects on the Highway Trust Fund: the tax rate on gasohol is lower than the tax on gas or diesel (up to 5.1 cents per gallon lower, depending upon how much ethanol is in the mix). As the article points out, this encourages consumers to purchase gasohol and keep corn growers happy. Also, of the remaining gasohol tax, 2.5 cents per gallon goes to the General Fund for deficit reduction (a hold-over from the 1990 budget summit). Highway advocates have sought the transfer of the 2.5 cents from the General Fund to the Highway Trust Fund for some time and implementing legislation (S-1306/HR-2808), unopposed by the corn growers, has been introduced in Congress. The issue of either eliminating the ethanol subsidy or requiring the General Fund to reimburse the Trust Fund for the subsidized amount is slightly more controversial. Recent legislation would mandate that at least five billion gallons of gasohol be sold in the United States each year, a number that would cause a significant reduction in Highway Trust Fund receipts if the subsidy is not eliminated or reimbursed.

So far as interest on the Highway Trust Fund is concerned, all federal trust fund accounts, other than the Highway Trust Fund, are credited with interest on their unexpended balances. The Highway Trust Fund, *Transportation Weekly* recalls, gave up its interest in 1998 as part of the deal to make sure that all of the monies actually get spent. If Congress were to begin crediting the Highway Trust Fund with interest again, this would add additional revenue to the Fund which, assuming RABA gets reenacted, would then get spent. That would, however, also move the program away from the principle of 100% user financing, since those interest payments, were they to be spent in the real world, would have to come from somewhere, probably the General Fund, creating a sort of General Fund subsidy for the Highway Program. The crediting of interest (along with RABA), would, however, still bring in real money and would be politically easier than a gas tax increase.

Senate Finance Chairman Max Baucus has prepared his MEGA Trust Account for reauthorizing the Highway Trust Fund next year. This legislation includes the above "low-hanging fruit" except for indexing. *Transportation Weekly* calculates that the measure, if enacted, would bring in about \$3 billion in FY 2004 and perhaps \$7 billion in FY 2009, recognizing that it is difficult to predict these numbers since the unobligated balance, on which interest would be predicated, is an enigma within a riddle.

Together, these measures would get us to between \$33 billion in 2004 and perhaps \$42 billion in 2009, still leaving a significant gap to be filled to meet

a \$50 billion target (to cover the cost to maintain condition) or the \$60 billion target (to meet the cost to maintain performance).

ARTBA and the American Society of Civil Engineers ("ASCE") propose to tackle this gap head-on, albeit in different ways. ARTBA became the first major group to advocate publicly a gas tax increase beyond indexing inflation. Its "Two Cents Makes Sense" plan incorporates all the "low hanging fruit" mentioned earlier and proposes other measures:

- Assessing six annual \$.02 increases in the fuel excise tax over the reauthorization period.
- Providing automatic adjustments in the fuels tax rate if the Highway Trust Fund experienced deficits during any fiscal year.
- Adopting true "pay as you go" funding which would replace TEA-21's current requirements that revenues be deposited in the Highway Trust Fund and "warehoused" a year before apportionment to the states.
- Including a "maintenance of effort" provision that would make state access to increased apportioned federal funds contingent on state investment levels consistent with prior investment.

ASCE recently joined ARTBA in calling for a fuel tax increase.^{xii} Its proposal recommends:

- Indexing the gas tax to the CPI.
- Raising the gas tax \$.06 per gallon at the onset of reauthorization.

- Decreasing the volatility of RABA adjustments.

Many discount even the possibility of even serious consideration, much less passage, of gas tax increases next year. Some would respond that, if President Reagan could support a significant gas tax increase in the economic environment of 1982, do we not have equivalent or better justification today? Moreover, the experience at the state level is a useful reference. Since 1997, 15 states increased their motor vehicles excise tax, with 10 legislatures expressly voting to raise their taxes (between 2.6 cents/gallon in Maine to 5 cents/gallon in Utah) and 5 states increasing their excise annually (through automatic indexing, without legislative action).

B. Tax Credit Bonds.

As John Horsley recently outlined for Congress,^{xiii} AASHTO is exploring the feasibility of leveraging new revenues through a Transportation Finance Corporation (“TFC”), which, among other things, would issue tax credit bonds. Under this proposal, the TFC would issue approximately \$60 billion in bonds between 2004 and 2009. From the bond proceeds, the TFC would distribute approximately \$35 billion to the highway program through FHWA according to an apportionment formula determined by Congress (perhaps similar to the current federal-aid highway funding formula); and approximately \$8.5 billion would be distributed to transit agencies on a basis to be determined. From the recipient’s perspective, these funds would essentially be indistinguishable from regular

federal-aid apportionments. The states would not in any way be liable for the repayment of the bonds.

The TFC would set aside at issuance and deposit into a sinking fund approximately \$17 billion of the bond proceeds, which would be invested in federal agency or other high grade instruments. At maturity, the sinking fund would have grown, according to Horsley, to be sufficient to repay the bond principal.

In lieu of interest, the bondholders would receive taxable tax credits that could be applied against the holder's federal income tax liability. Horsley suggests that a new net source of income be found to produce additional highway trust fund receipts which would reimburse the Treasury for the budgetary cost of the tax expenditures associated with the tax credits.

AASHTO is still carefully investigating the strengths and weaknesses of this proposal. Moreover, the General Accounting Office, at the request of the Senate Finance Committee and the Senate Committee on Environment and Public Works, is including the tax credit bond proposal in its examination of a range of proposed alternative financing approaches for surface transportation.^{13A} In the meantime, Senator Baucus is acting. On October 10, 2002, he introduced the MEGA Innovate Act allowing the Treasury to issue \$3 billion per year in tax credit bonds.

C. Alternative Revenue Sources

For the last several years there have been several papers and studies prepared on the potential for generating alternative sources of transportation

revenue to replace, over time, those revenues lost as the current method of tax revenues based on motor fuels declines or becomes obsolete. A thorough recitation of these alternatives is beyond the scope of this paper. Instead, I would refer you to NCHRP Report^{xiv} and two resource papers prepared for the Second National Conference on Transportation Finance.^{xv 15A} These analyses summarize numerous alternative revenue sources and evaluate them in accordance with a variety of criteria.

Based upon this work and the policy analysis of others, the Joint Committee of the Associated General Contractors, ARTBA and AASHTO, advocated the creation of a “blue ribbon” task force to recommend to Congress alternative motor vehicle fuels and new user fees to be levied to insure highway trust fund revenues are sufficient to maintain system performance. This conference is an opportunity to push this recommendation further toward reality during reauthorization.

D. Tolling.

Despite what may be excellent economic arguments in favor of increasing federal highway and transit program funding, if Congress fails to adopt maintaining system performance as a goal, state departments of transportation and regional transportation authorities may nevertheless pursue the resources they need to cover such costs. Recent years have seen a proliferation of new state and local sources of revenue for transportation. One of the key tools states

and localities have used, varying widely in acceptability from region to region, is the development of new capacity using toll revenues to cover at least a portion of the costs.

In both ISTEA and TEA-21, Congress opened the door to limited tolling of the interstate system. While a few states have placed a tentative toe in the water, most toll projects have focused on new bridge spans and greenfield projects off the interstate system, encountering varying acceptance of new toll road financing tools. In delivering these projects, sponsors have utilized a range of tools, discussed in more detail elsewhere,^{xvi} including:

- The franchise or concession financed with equity and taxable debt.
- The 63-20 non-profit corporation as the obligor on tax-exempt debt, with private involvement maximized under the IRS Management Contract Rules.
- A state or regional toll authority's issuance of tax-exempt revenue bonds, with award of a design-build or a design-build-maintain contract to manage project cost and schedule risk.
- A state agency's issuance of general obligation bonds to finance a new toll facility in effect retaining toll revenue risk.

Each of these approaches has strengths, weaknesses and suitability criteria. Examples of toll road developments since the second National Conference on Transportation Finance include:

- The Tacoma Narrows Toll Bridge, being developed through a design-build contract awarded to a Bechtel-Kiewit team and being financed by the State of Washington through the issuance of general obligation bonds.
- The Central Texas Turnpike Project, a network of new tollroads near Austin, being developed in part by an enhanced form of Design-Build-Maintain contract awarded to Fluor Daniel and Balfour Beatty,^{xvii} and being financing by a combination of tax exempt revenue bonds issued by the Texas Transportation Commission, general obligation bonds issued by localities, a TIFIA loan backed by toll revenues and gas tax funding commitments by the State.
- The Las Vegas Monorail, being developed by a DBOM contract awarded to a Granite/Bombardier team and being financed with farebox/advertising revenue bonds, interested party subordinate debt and private sector donations.^{xviii}
- Macquarie's purchase of CTV's private Caltrans franchise to develop and operate the SR-125 tollroad, with construction planned to be financed later this year through the placement of equity and taxable debt, supported by a TIFIA loan.
- Legislative approval for OCTA to acquire early in 2003 the already operating SR 91 Express Lanes, assuming the taxable non-recourse debt with a likely tax-exempt refinancing later in 2003.
- The Transportation Corridor Agencies' recently announced plan to combine the credit of the San Joaquin, Foothill and Eastern tollroads.

Any generalizations about trends these transactions suggest is dangerous, but allow me a little risk-taking. Absent any change in Federal law or policy, we might expect:

- Some jurisdictions will drive financing outcomes toward the lowest cost of money, even if that diminishes private sector innovation and risk shifting.
- TIFIA GARVEE bonds and state infrastructure banks have proven to be valuable tools in highway financings.^{xix}
- The requirement that all debt senior to TIFIA be investment grade inhibits the use of developer equity or subdebt, which of themselves are valuable tools in financial structuring.
- TIFIA's springing lien provision will drive projects into the hands of insolvency-proof borrowers (i.e., public agencies with significant tax revenues) and away from single purpose private or non-profit borrowers, which again are valuable structuring tools.
- The cost and schedule certainty that the Federal Transit Administration requires in full funding grant agreements for new-start transit projects, that rating agencies require for start-up toll bonds and that owners are requiring to avoid all-too-common "sticker shock" differences between estimated and actual construction costs^{xx} will continue to drive issuers toward Design-Build and Design-Build-Operate-Maintain contracts,^{xxi} important procurement tools which have gained wide commercial acceptance.

- Traffic and revenue consultants, rating agencies and bond insurers will continue trending toward more conservative projections.
- In many jurisdictions (Texas and Florida being notable exceptions) tolling will remain a tough sell for several reasons. First, where the need is greatest – rehabilitation and improvement of existing “free” facilities – there is little precedent nationally and indeed a broad public perception that they have already paid for the facilities once - - they shouldn't have to pay for them again. Second, localities, led by campaign promises of some candidates for local and state office, often wrongly believe there is plenty of money available and if they only push hard enough, they can out-politic their neighbors for gas tax allocations and avoid tolling. Third, as Grote, Parker and Seltzer have pointed out, communities generally underestimate the consequences of waiting for public funding, including construction cost escalation, costs of congestion and accidents and missed economic gain from early project completion. Fourth, where courageous leaders do crop up to campaign for tolls as the best means to grow the pie, federal policy offers little incentive to rebut local special interests with a stake in the status quo, anti-acceleration, “keep it in the slow pipeline” philosophy.
- The tax exempt credit markets have proven to be highly efficient at pricing project risk. The advantage to tollroad sponsors of this market, unique in the world, will continue to drive financing and project delivery structures away, with an exception here and there, from the taxable debt/private equity model.
- Few tolled facilities will produce borrowing capacity sufficient to cover all of their costs, driving finance plans for a single project quite logically and efficiently

toward combining state and federal gas taxes, local government contributions, revenue bonds and, if available, TIFIA.

Assuming these observations to be true, and assuming further that tolling would be a desirable outcome, what can we do to encourage more tolled capacity? I hope this conference can offer a concrete list of suggestions, but as food for thought:

- Tollroad financings would benefit from the combination of tax-exempt debt, private equity, and incentive-based service contracts, an end that can be accomplished by changes to the Internal Revenue Code. Legislation to do just that passed both houses since TEA-21, but President Clinton vetoed the larger bill for other reasons.
- While other states have struggled, we need to understand what Texas and Florida have done right in securing state leadership and local acceptance sufficient to “sell” tolling for new projects.
- We should not force policy-makers to choose between tax-exempt financing, on the one hand, or private sector innovation and equity, on the other hand. My partner, Karen J. Hedlund, has written an excellent piece,^{xxii} and will be speaking later in the conference, on this important issue.
- Federal policy should provide states and regional authorities a greater incentive to create new toll revenues than the existing toll credit mechanism, akin to the original State Infrastructure Bank program. Access to a small amount of

new grant funds will provide much needed support for making politically difficult decisions.

- TIFIA is worthy of reauthorization.^{xxiii} Nevertheless, existing and prospective borrowers have suggested a number of needed revisions and TIFIA supporters will need to respond thoughtfully to those resisting funding TIFIA "off the top" when it has proven difficult to estimate annual program demand.

CONCLUSION

While FHWA, AASHTO and ARTBA may quibble about how to calculate the exact cost of maintaining system condition and performance, they would all agree on certain key findings. Despite significant increases in funding at all levels of government since 1997, we are not covering the cost of maintaining system performance. As a result, congestion is increasing.

This conference has a unique opportunity to send a clear message - - that the goal of reauthorization must be to avoid this degradation in critical mobility for goods and people. Achieving this standard will require difficult decisions by elected and appointed officials at all levels of government – federal gas tax revenue enhancement, continued and wider use of innovative financing tools, and more extensive use of tolling and planning for alternative dedicated funding to supplement the gas tax by 2010, among many others.

The prospect of maintaining system performance may not yet be "gone with the wind," but it is certainly, in Bob Dylan's words, "blowing in the wind."

Endnotes follow:

¹ Partner and Chair, National Infrastructure Practice, Nossaman Guthner Knox & Elliott, LLP. The views expressed herein are solely those of the author and do not necessarily represent views of his colleagues, clients or the organizations with which he is affiliated. The author is a member of the Board of Directors of the American Road and Transportation Builders Association, Past President of its Public-Private Ventures Division and served as Co-Chair of the Federal Surface Transportation Financing Working Group which contributed to the *Blueprint for 2003 Reauthorization* which ARTBA published in March 2001.

¹ Grote, Parker and Seltzer, Planes Trains and Automobiles: Multimodal Reauthorization Opportunities, Report of the Second National Conference on Transportation Finance, Transportation Research Board, Conference Proceedings 24 (2000).

¹ This paper focuses primarily on highways and bridges and does not specifically address mass transit, except as noted. The analysis of cost to maintain condition and performance applies equally to transit, however.

¹ *Two Cents Make Sense*, Testimony of the American Road and Transportation Builders Association before the Subcommittee on Highways and Transit, House Committee on Transportation and Infrastructure (July 16, 2002).

¹ American Road and Transportation Builders Association, A Blueprint for 2003 Reauthorization of the Federal-Aid Highway and Mass Transit Programs (March 2001).

¹ Recommendations of the AASHTO-AGC-ARTBA Joint Committee (2001).

¹ Statement of Mary Peters, Federal Highway Administrator, before Subcommittee on Transportation Infrastructure and Nuclear Safety, Senate Committee on Environment and Public Works (September 30, 2002).

¹ American Association of State Highway and Transportation Officials, The Bottom Line Report (2002).

^{8A} General Accounting Office, U.S. Infrastructure: Federal Agencies' Approaches to Developing Investment Estimates Vary (July 2001).

^{8B} AASHTO, The Changing State DOT (1998).

^{8C} Testimony of Joseph Perkins, American Association of State and Highway Transportation Officials, before the Subcommittee on Transportation, Infrastructure and Nuclear Safety, Senate Committee on Environment and Public Works (September 30, 2002).

¹ Texas Transportation Institute, Urban Mobility Study (2002).

¹ Testimony of the American Road and Transportation Builders Association before the Subcommittee on Transportation, Infrastructure and Nuclear Safety, Senate Committee on Environment and Public Works (September 30, 2002).

¹ Legislative Services Group, *Transportation Weekly*, Volume 3, Issue 42 (August 19, 2002).

¹ Testimony of Thomas Jackson, American Society of Civil Engineers, before the Subcommittee on Transportation, Infrastructure and Nuclear Safety, Senate Committee on Environment and Public Works (September 30, 2002).

¹ Testimony of John Horsley, American Association of State Highway and Transportation Officials, before a Joint Hearing of the Senate Committee of Finance and Senate Committee on Environment and Public Works (September 25, 2002).

^{13A} Statement of Jayetta Hecker, General Accounting Office, before a joint hearing of the Senate Committee on Finance and the Senate Committee on Environmental and Public Works (September 25, 2002).

¹ Reno and Stowers, NCHRP Report 377: *Alternatives to Motor Fuel Taxes for Financing Surface Transportation Improvements* (1995).

¹ Clary, Hand, Creamer and Branagan, *Alternative Transportation Revenue Sources*, published in Report of the Second National Conference on Transportation Finance, Conference Proceedings 24 (2000).

^{15A} Bemis, *Expected Future Availability and Cost of California Gasoline and California Excise Tax Revenue Projections*, report of the Second National Conference on Transportation Finance, Conference Proceedings 24 (2000).

¹ For descriptions of the many forms public-private partnerships can take, see Hedlund, *Public-Private Partnerships – the Public Owner's Perspective*, Design-Build in the Public Sector, Aspen Law and Business (2002); Allison, Boock, Hedlund, Papernik, Smith and Yarema, *Surface Transportation: Tools in the Privatization Tool Box*, Privatizing Governmental Functions, Law Journal Press (2001); Yarema, *Transportation Project Delivery: Options, Public-Private Roles and Suitability Criteria*, AASHTO Project Finance Institute Proceedings (2002).

¹ Russell and Curren, *The Texas SH 130 Procurement*, Public Works Financing (October 2002).

¹ Testimony of Robert Broadbent, Las Vegas Monorail Company, before the Subcommittee on Housing and Transportation, Senate Committee on Banking, Housing and Urban Affairs (June 26, 2002).

¹ For summaries of how and the extent to which states have utilized the new TIFIA, Garvee Bonds and the State Infrastructure Bank programs, see U.S. Department of Transportation, Performance Review of USDOT Innovative Finance Initiatives (July 2002) and Statement of Phyllis Scheinberg, U.S. Department of Transportation, before a Joint Hearing of the Senate Committee on Environment and Public Works and the Senate Committee on Finance (September 25, 2002).

¹ Flyvbjerg, Holm and Buhl, *Underestimating Costs in Public Works Projects: Error or Lie?*, APA Journal (Summer 2002).

¹ For excellent discussions of design-build contracting, see Smith and Ryan, *Design-Build for Highways, Bridges, Rail, Mass Transit and Airports*, Design-Build in the Public Sector, Aspen Law & Business (2002); Boock, Papernik and Smith, *Design-Build Contracting and State and Local Agencies*, Design-Build Handbook, Aspen Law and Business (2001)

¹ Hedlund, The Case for Tax-Exempt Financing of Public-Private Partnerships, Reason Public Policy Institute (1998).

¹ U.S. Department of Transportation, Transportation Innovative Finance and Infrastructure Act: Report to Congress (2002).



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Sharon Greene, Principal, Sharon Greene and Associates

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Despite a number of recently developed tools and techniques for innovative financing of surface transportation projects, only relatively few such projects have experienced substantial acceleration in actual delivery to the public. New methods for leveraging traditional sources of funds have proliferated in utilization by states, municipalities and special purpose authorities, allowing in many cases the delivery of projects that likely would have waited impatiently for “pay-as-you-go” financing. However, the value of such innovation in the more rapid delivery of transportation projects is often lost, owing to factors that substantially inhibit their effective use.

The purpose of this resource paper is to encourage and stimulate discussion about methods by which more projects may be delivered more expediently. Not surprisingly, there are a host of non-financial factors that interact in project delivery and have the combined effect of reducing the positive value of new methods for generating and utilizing funds for capital project development. This paper will explore such factors and their relationship to innovative finance, with the principal objective to define more effective approaches for consideration in the “Next TEA” reauthorization process. Succinctly stated, the full value of innovation in financing methods for surface transport programs will only be realized when paired with companion innovations in the project definition, development, approval, and implementation processes.

The Innovative Finance Framework

According to the Federal Highway Administration (FHWA), “Innovative Finance” is a broadly defined term that refers to moving the traditional federal-aid transportation process from a single strategy of federal funding on a “grants reimbursement” basis to a diversified approach that includes innovative financing concepts developed both from the public and private sectors. As is well known to conference participants, the Federal Government has traditionally financed transportation infrastructure primarily through outright 80 percent grants. With

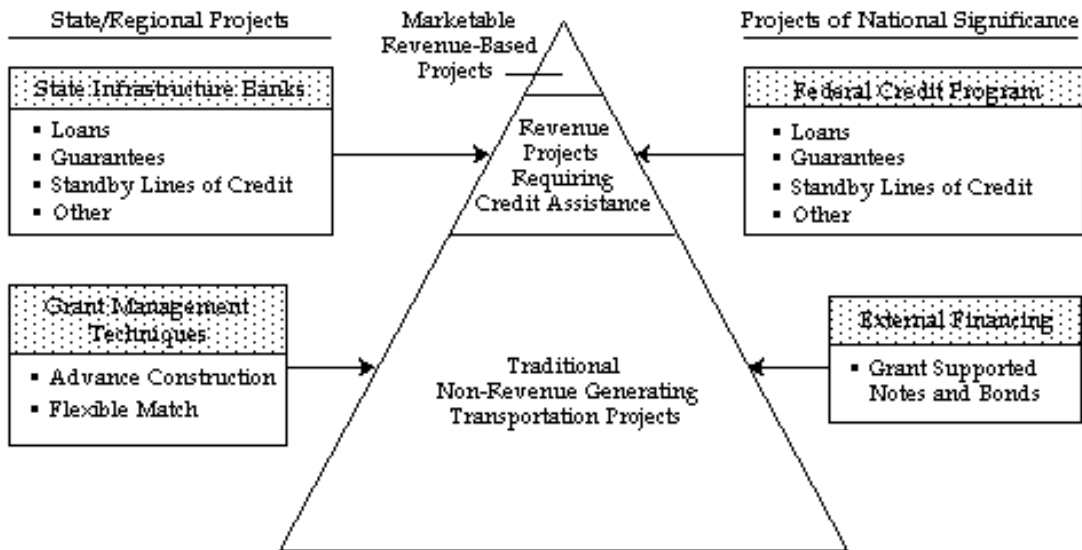
ISTEA, the NHS Act of 1995 and TEA-21, DOT began providing alternative or “innovative” forms of non-grant assistance, as well as means by which the traditional federal grants process could be made more flexible. This definition conveys a rather large playing field for innovation, encompassing virtually all programs that utilize borrowing, guarantees, and other means of leveraging funds. By this definition, a very significant number of transportation projects in the last 12-15 years have taken advantage of innovative financing. Many are now in operation, while others are in final stages of development, environmental clearance and preliminary and final design.

As paraphrased by the U.S. General Accounting Office in its September 25, 2002 testimony before the Committee on Finance and Committee on Environment and Public Works, the goals for the FHWA Innovative Finance Program are to: ¹

- Accelerate projects by reducing inefficient and unnecessary constraints on states’ management of federal highway funds;
- Expand investment by removing barriers to private investment;
- Encourage the introduction of new revenue streams, particularly for the purpose of retiring debt obligations; and
- Reduce financing and related costs, thus freeing up the savings for investments into the transportation system itself.

FHWA’s now familiar diagram summarizes the various federal innovative financing mechanisms and illustrates how these mechanisms fit with different types of transportation projects:

Innovative Finance: FHWA Perspective



Within this basic framework, the now state-of-the-art mechanisms in transportation finance continue to evolve. TEA-21 provided a number of important new mechanisms that have supported innovative solutions to fund transportation improvements. Many of these began as pilot programs which have been shaped into more formalized federal and state programs and an increasingly-common language of acronyms that includes TIFIA, SIB, and GARVEE. In preparation for the reauthorization of TEA-21, conferences such as this will provide significant input to further refine, broaden, and expand innovative finance concepts for the remainder of the decade and beyond.

Innovative Finance, the Broader Context

It is not the intention of this paper to review the frequently cited list of well-known projects throughout the United States and abroad that have achieved success and notoriety through their utilization of unique and innovative financial mechanisms. Indeed, the program for this conference focuses through its many sessions on just such specific examples and issues. The statistics are impressive: as of June 2002, 32 states with established State Infrastructure Bank programs with about \$4.06 billion in the dollar value of loan agreements; 6 states with \$2.3 billion in GARVEE bonds outstanding and more states with enabling legislation contemplated; 9 states under agreement for TIFIA credit assistance for 11 projects with \$15.4 billion in transportation investment.¹ And the list of successes continues to grow.

Rather than focus on the financial aspects, it is the objective of this paper to focus primarily on the non-financial aspects of these innovative projects, and promote dialogue throughout the various conference sessions on the plethora of developmental factors that must be also be improved through innovation, together with financing innovations. It is our contention that without supporting legislative, administrative and programmatic changes in the overall project development and delivery system, the financial innovations become far less compelling.

Reviewing projects that have been completed and are now in service reveals certain predictable patterns. First, it's clear that projects that do not require full environmental documentation, nor have jurisdictional opposition from local governments and/or special interest groups, can be brought on line significantly more rapidly than projects requiring full environmental clearance or having even modest political or public opposition. Secondly, projects that do not require direct use of federal funds or funding programs, and thereby avoid the federal EIS

process, generally can be completed several years sooner than otherwise. And finally, the morass of clearances and regulatory issues that must be considered as a prerequisite for project development add significantly to the average time necessary to bring a project on line.

While none of us here would advocate that environmental, permitting and public involvement processes should be eliminated in order to expedite project delivery, it is clear that the hurdles which must be circumnavigated in the public works delivery process today have become enormously complex, costly and in many cases virtually insurmountable. While sound planning clearly requires that political, institutional, environmental and financial factors all be taken into consideration together with technical factors in the project development process, many understandably believe that by so doing we have provided tools used solely and consciously to delay and inhibit the project delivery process.

In order to effectively make use of many of the financial engineering innovations that have been put into play, it would be highly advantageous to be able to more effectively estimate the time, cost, and degree of difficulty associated with the development process for specific projects. As a small but marginally influential industry, we should be willing to broaden our focus to aspects of project delivery not directly related to innovative finance, precisely in order to take greater advantage of the available funding and financing tools which have become available.

Impediments to Project Delivery

In addition to technology, cost, and financial capacity, the obstacles to expedient project delivery tend to fall generally into three broad categories:

- Environmental clearance and statutory requirements
- Political and institutional factors

- Community involvement and sustainability issues

There have been countless edicts, administrative orders, and academic research aimed at streamlining and increasing the effectiveness of the planning and development process. However, with the increased consciousness regarding the impacts and sustainability of the built environment, the sheer number of requirements and processes that must be incorporated has grown exponentially, making the term “streamlining” seem oxymoronic to many.

Particularly germane to our agenda at this conference is the irony that in order to take greatest advantage of many of the tools and techniques available in the financial sector to deliver projects faster, the capital markets seek increased *certainty*, at the same time that the project delivery process is experiencing increased *uncertainty*. This paradox is highly relevant, as the reauthorization process will almost certainly recommend methods for increased participation of the private sector and partnerships between government and business for transportation project development. For private enterprise to become integrally involved in the transportation project finance and development process, third party-related project development risk must be substantially eliminated. Even within the public sector, increasingly common project delivery systems, including design-build and “DBOM,” require reliance on principles of project finance that in turn demand greater certainty in the budgeting and scheduling of project development and delivery. However, the various requirements and “political correctness” measures associated with project delivery have the combined effect of moving the development process in exactly the opposite direction.

The dichotomy is evident. Solutions must evolve that meet the often competing, but equally legitimate objectives of prudent and sustainable project development and practical and expedient project delivery. This conference is the right setting to focus on the definition and recommendation of such solutions.

Environmental Clearance and Statutory Requirements

About a month ago, on September 18th, President Bush issued Executive Order 13274, entitled “Environmental Stewardship and Transportation Infrastructure Project Reviews”. Similar to the war powers resolution recently adopted by the Congress, this Executive Order presumably provides the administration with unfettered capability to declare war on environmental regulations and redundancies in project review. Among other provisions, the newest edict on Environmental Streamlining provides for the following: ¹

- Each agency required by law to conduct environmental reviews “...shall ensure completion of such reviews in a timely and environmentally responsible manner...”
- The DOT shall establish the “...interagency ‘*Transportation Infrastructure Streamlining Task Force*’ to (1) monitor and assist agencies....to expedite reviews, issue permits, or similar actions, as necessary; (2) identify and promote policies aimed at streamlining the process of approvals for transportation infrastructure projects; and (3) review a list of “*priority projects*” for addition or amendment at least quarterly...”
- The membership of the Task Force includes: the Secretaries of Agriculture, Commerce, Interior, Defense and Transportation (Task Force Chair); Administrator of the Environmental Protection Agency; and the Chairs of the Council on Environmental Quality and Advisory Council on Historic Preservation.

Perhaps most important with respect to expediting projects that make use of innovative financing, Section 2(a) of the Executive Order requires the Secretary of Transportation to “...*designate...a list of high priority transportation infrastructure projects that should receive expedited agency reviews.*”

and...amend such list from time to time as the Secretary deems appropriate". For projects on the Secretary's list, "...agencies shall to the maximum extent practicable expedite their reviews for relevant permits or other approvals, and take related actions as necessary, consistent with available resources and applicable laws..."¹

Over the last several years, many of us here have been working with various members of Congress and the Clinton and Bush Administrations to develop a process designating projects as high priority, particularly recognizing the importance of such prioritization with respect to projects in which development risk is shifted wholly or partially to the private sector, or in which financing is being arranged non-traditionally through project financing and/or a capital markets approach. Section 2(a) of the Executive Order would seem to respond to that body of requests, giving discretionary authority to the Secretary to designate projects of his choosing for such prioritization, with no particular criteria for "discretion" provided in the Executive Order. While the concept of streamlining the environmental approval process is certainly not new, the President's declaration is the first time that a special class of "environmentally expedited" projects has been provided for by law or executive order. One might imagine a typical question among attendees at next year's Transportation Finance Conference to be, "Where is your project on the 2(a) List?"

Despite the obvious intention of Executive Order 13274, it will remain to be seen how well certain of the federal resource agencies – notably EPA – will respond to the Order's intent, or whether such agencies will continue to do environmental business-as-usual, particularly in the review and approval process for projects designated "high priority" by the Secretary of Transportation. You may recall some years ago, Section 1309 of the TEA-21 legislation also called for significant environmental streamlining, and laid out an extensive process by which a "coordinated environmental review process" would expedite review of federal highway and transit projects. A detailed Memorandum of Understanding was

entered into by the transportation and resource agencies, and there was much excited talk about finally clearing the logjam from inhibiting the clearance process. After watching and actively participating in this new “cooperative spirit” among the agencies, I believe many of us fully understand why the Administration thought it necessary for an Executive Order to be issued. (*You can lead G-11s to water, but you can't make them drink...*)

Furthermore, an important issue to be resolved is the way in which the DOT modal administrations respond to the Presidential initiative to expedite high priority projects. It has been the experience of many here that FHWA and FTA staff typically bend over backwards to cooperate with the resource agencies, despite what sometimes seems like an intent by many mid-level staffers within these agencies to slow the environmental review process. Much of the delay encountered with respect to highway projects, in particular, results from deliberate inaction by resource agency staff, allowing project approvals to languish and then requesting “additional time” for review, or asking for lengthy written responses from project sponsors to non-pertinent or redundant questions.

The DOT policies must change to reflect a more proactive approach in dealing with sister agencies, despite the commendable efforts of many in FHWA and FTA to cooperate in inter-agency reviews and appropriate planning processes in accordance with the 1309 mandate. The good news is that many in the governmental sector appear to be gaining understanding of the critical differences in the degree of certainty and expediency necessary for projects which make use of financing mechanisms other than traditional federal grants and pay-as-you-go approaches. It will be our job to further this educational process if we are to continue to benefit from existing and new programs to better find and leverage sources of funds for transportation projects.

Over the next few months, the DOT will develop general guidelines, criteria and rules for projects to be designated in the “High Priority” list as provided in the Executive Order. This sounds like a marvelous opportunity for some modest lobbying by those of us within the innovative finance community.

Political and Institutional Factors

There is a clear and unequivocal rule of public works: Large-scale projects that are non-traditional in virtually any respect – technologically, institutionally, or financially – gain significant exposure in the political arena. (This could be considered the infrastructure corollary to Tip O’Neill’s long standing observation that “all politics is local...”) In some cases, of course, such exposure is helpful to project development, while in other cases political forces are highly destructive to infrastructure delivery. Often, however, infrastructure projects are delayed, maimed, and occasionally killed by political issues only tangentially related to the project’s actual attributes with respect to improving mobility and safety with minimum impact to the environment.

Political and institutional factors in infrastructure development often seem most acute for transportation projects, and stem, of course, from the very nature of transportation. Unlike most other public works programs, transportation projects generally transcend political and jurisdictional lines, often at multiple levels involving local governments, regional authorities, and state and federal districts. In those frequent cases when adjacent local governments or political districts differ with respect to any of a host of growth, development, and environmental issues, expediting the delivery of transportation infrastructure often bears the brunt of the debate.

Thus, regardless of the degree of innovation planned for funding and financing such projects, expediting them becomes futile – even if the financing scheme was brilliantly conceived and effectively communicated by people in this very

room. This combination of factors, coupled with the inability of most transportation projects to cover their costs through project-generated revenues, makes for an environment hostile to the encouragement of private sector investment. If privatization is sought, it is often with a “runt of the litter” mentality whereby low-risk, higher revenue-generating projects are kept (and sometimes brought back) within the public domain while the high-risk, low and/or uncertain revenue-generating runts are made available for private sector investment.

An excellent example of such difficulties created by political and institutional factors was recently demonstrated with the SR 91 Express Lanes Project – the only California AB 680 toll revenue project in operation of the four originally franchised by the State. While perhaps the best actual demonstration of the efficacy of the hot lane concept – where users pay variable tolls to use reserved lanes as congestion ebbs and wanes on the mainline facility – SR 91 bisects the Orange County-Riverside County line in Southern California. Orange County has jobs, wealth, and a vibrant economy; Riverside County has massive tracts of reasonably affordable homes occupied by young families struggling to make mortgage payments. Owing to the demographics, the SR 91 corridor experiences massive traffic demand and a classic peak hour directionality. However, it is the employees in Riverside County who pay the \$5.00+ one-way toll every day, not the employers in Orange County. Thus, the local politicians in Riverside County supported their constituents and sought a way to create free adjacent capacity. The private owners of the Express Lanes pointed to the “non-compete” clause in the Franchise Agreement that was necessary to assure private financing, initially by a bank consortium. Orange County political leadership was muted and ambivalent, as long as employees were willing to make the trek and punch their employers’ time clocks at appointed hours.

We all know the resolution of this classic political dilemma: the Orange County Transportation Authority has agreed to purchase to the SR 91 Express Lanes facility from its private owners, by repayment of equity to the Express Lanes’

owners and a take-out using tax-exempt bonds. In effect, to solve the political disagreement (at least perceptually, and perhaps only temporarily...), the taxpayers are paying additional costs by subsidizing tax-exempt bonds, and the users will still pay tolls to a newly-created public authority.

“Party politics” also plays an occasionally significant role in creating impediments to project delivery. Interestingly, it seems that there is often no real philosophical difference between Democrats and Republicans with respect to infrastructure development, but merely a contest to determine which party – and which party leadership – can appear to be more “in touch” with constituencies. Populism is in vogue, regardless of affiliation.

Indeed, one would expect, for example, that the Republican Party would typically be more prone than the Democratic Party to favor elements of privatization in the delivery and provision of public works projects. Many will recall, however, the Washington State program for “Transportation Partnerships,” which had positive acclaim and succeeded in encouraging the expenditure of millions of dollars by a number of engineering, construction and banking organizations in the pursuit of a series of projects of statewide significance. Unfortunately, infrastructure projects generally extend across the terms of elected representatives, and as the State Legislature turned from a Democratic majority (that clearly endorsed the program for utilization of private investment) to a Republican majority, the Legislature effectively vetoed the program. What remains of the multi-project program that would have brought billions of dollars of private capital into Washington State is the Tacoma Narrows Bridge, which will now be done as a tax-exempt project using certain financial innovations, but without the financial involvement of the private sector.

Unfortunately, there is no Executive Order in the works for “institutional streamlining.” Regional politics will need eventually to come to the realization that internecine conflict is not good for project delivery. Particularly in cases like

the SR 91, where each affected political subdivision recognizes and supports the immediate need for increased travel capacity, perhaps it would be advantageous to implement an ombudsman concept, where arbitration by neutral third parties could facilitate political compromise without local officials appearing to either “win” or “lose.” When infrastructure projects become the prize in a political test of wills, the ability to bring the stability necessary to accommodate financial innovation is often ephemeral.

Community Involvement and Sustainability

Closely linked with environmental permitting and local governance is the area of community and public involvement. It is virtually impossible in the United States today to enter into the planning and development of an infrastructure project of any significance without suitable and acceptable roles for community groups, special interest organizations, and the general public. The public participation process is provided for and facilitated by a huge body of federal and local legislation and statute. Advisory committees, public members of agency boards, and required responses to all input are but a few of the policies and programs that have promulgated the key role of citizens in the planning and approval process.

Has this role exceeded the bounds of practicality? Short of entering into an open-ended debate, there is little merit to attempting to answer the question. From a more cynical perspective, the more appropriate questions are:

- Have we conferred too much power (indeed, in many cases, a veto power) upon average citizens to affect or even stop the development of infrastructure that a coalition of informed elected representatives has sanctioned?
- Has our form of participatory democracy transferred too great a power of assent to non-representative groups or individual citizens, while at the

same time allowing duly elected officials to shirk their decision-making duty by chanting “let the public speak?”

- Have our federal environmental laws facilitated a process which encourages and facilitates capricious litigation by individuals and special interest groups, often simply aimed at delaying or eliminating infrastructure projects, rather than providing constructive input to project sponsors?
- Should federal law, like many of the state environmental laws, have a statute of limitations, which, after expiration, permits no suits, litigation, or other action by the public that could affect the project in ways potentially significant to the financial marketplace?

Expediting Project Delivery: A Challenge to the Transportation Finance Community

In our view, there are four keys to fully unlocking the plethora of innovative financial tools available for expediting transportation infrastructure projects:

- Stability
- Predictability
- Continuity
- Acceptability

Aside from forming a clever acronym, these four characteristics are the most relevant attributes for projects seeking innovative financing. Simply defined, the characteristics are:

- *Stability*: the ability to trust that multi-year funding commitments pledged for repayment of traditional and innovative financing instruments such as GARVEES, SIB loans, and TIFIA credit assistance will be met, with minimized revenue risk;

- *Predictability*: the ability to predict what a project will cost and when it will be implemented, thus minimizing cost risk and implementation risk;
- *Continuity*: the ability to trust that the political will to get a project done will continue across changes in political office; the ability to know that agency decisions made will be maintained over the project development process, thus minimizing political risk and its close relative – implementation risk; and
- *Acceptability*: the ability to streamline and hopefully expedite the process for achieving substantial effective consent (if not consensus) among involved agencies, and the ability to have lead agencies function as ombudsmen – or, in the language of the Executive Order, as Environmental Stewards - through the process.

To take best advantage of the Executive Order in creating the list of Priority Projects, both financial and non-financial aspects must be addressed to assure stability, predictability, continuity, and acceptability. During this period of reauthorization, it is important that we stand back and focus also on the required statutory changes and innovations in the non-financial aspects of projects that are companion to innovations in financing. Such statutory changes and innovations do not require by-passing the environmental and regulatory process, but rather managing the process to create a more SPCA-friendly environment within which projects can be built.

In determining the likelihood of expedited project delivery - whether using traditional or non-traditional financing methods – calculating the “SPCA Index” could be a valid indicator of potential success. This requires looking beyond innovative finance to focus energy on the political, institutional, and regulatory side of the project development process and allowing SPCA to take care of the

runts of the litter.

***3rd National Conference on Transportation
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***The Institutional Framework for Innovative
Transportation Finance***

**James T. Taylor II
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Introduction

One of the purposes of this resource paper is to stimulate discussion of the potential long-term implications of innovative transportation finance strategies. Are we creating financing mechanisms that will facilitate continued and timely investment in our nation's transportation infrastructure over the next 40 to 50 years or are we simply addressing our most pressing short-term capital needs? As a starting point, the following highlights some of the new financing vehicles and partnership structures developed under the umbrella of "innovative finance" and questions where they might be leading us.

The second half of the paper examines certain institutional factors that may have influenced the types of financing approaches taken to date or that could inhibit further innovation. By acknowledging and addressing some of the tensions within and among the key players, transportation policymakers may be able to craft more effective strategies for fostering collaboration and increasing the overall level of transportation investment.

Implications of Key Financing Initiatives

In the late 1980s, with the interstate highway system essentially completed, the focus of Federal surface transportation policy shifted from expanding the nation's highway network to developing a more efficient national transportation system with improved linkages between highways, rail, transit, ports, and airports. This broader mandate has been coupled with a concerted effort to develop new financing techniques to complement and enhance existing Federal grant reimbursement programs. These financing techniques can be grouped into four basic "innovative finance" strategies:

- modify rules and regulations governing Federal aid to allow states to make more efficient use of existing resources,
- facilitate debt financings that leverage future Federal-aid reimbursements,
- encourage development of new toll facilities and other revenue-generating assets, and
- provide state and Federal credit assistance to sponsors of eligible projects.

Innovative Management of Federal Funds

What is this strategy intended to accomplish?

The Federal government has traditionally supported the financing of the nation's highway network by providing grants to reimburse state governments for a portion of the monies they spend on certain types of projects. This basic approach was established in federal legislation enacted between 1912 and 1922 and reaffirmed in the landmark legislation that created the Highway Trust Fund in 1956. Over the years, a complex set of rules and regulations governing the distribution of the Federal aid has been established in order to provide for an equitable apportionment of the funds among the states, to ensure accountability, and to direct or to encourage certain expenditures desired by Congress.

Many of the innovative finance initiatives undertaken by the Federal government in recent years involve administrative or legislative changes to ease those restrictions. Some of the changes allow states to manage when and how Federal-aid reimbursements are obligated. Others broaden the range of options for meeting the non-Federal matching share requirements. Though the changes do not increase the total amount of Federal aid available to the states, they create opportunities to expedite certain projects and to better leverage state and local resources.

Where is this strategy leading us?

The federal funds management tools have been well received (most were actually requested by states under the TE-045 Innovative Finance Test and Evaluation Project) and are generally non-controversial because they do not create a bias toward or against any particular type of project. In addition, they are relatively easy to implement and usually do not require any legislative action at the state level.

The major issue with this approach is where to draw the line. If giving state and local officials greater authority and flexibility in funding transportation is such a good idea, why not reduce the scope of the Federal aid highway program and give the federal taxes on motor fuels back to the states? While that may seem extreme, bills supporting devolution have been introduced in Congress. A more likely scenario though, may be a continuing effort to reduce the federal influence in transportation development. Proposals that may be considered include increasing the minimum guaranteed apportionments to states, collapsing various funding categories into block grants, streamlining Federal environmental reviews, reducing or waiving state match requirements, and eliminating required set-asides for enhancement projects (bicycle and pedestrian facilities, historic preservation, landscape and beautification).

Debt Financings Payable from Federal Aid

What is this strategy intended to accomplish?

Debt is primarily used to accelerate construction of major projects. By expediting construction, states can avoid potential cost escalation due to inflation and realize the safety and economic benefits of projects sooner. In addition, bonding against future Federal-aid reimbursements spreads the cost of a facility over its expected useful life.

Though it is probably not fair to say that the Federal government is advocating debt financing, it has been a significant enabler. Since 1995, several changes have been made to the Federal aid highway program that facilitate bond financing by state departments of transportation and other recipients of Federal aid:

- Interest and certain costs associated with issuing debt were made eligible for Federal-aid reimbursement.
- Restrictions on the amount and timing of advance construction authorizations were eliminated.
- Title 23 of the United States Code was amended to clarify that a pledge of Federal aid as a source of repayment for a bond issue does not represent a federal guarantee of the debt.
- Funding guarantees and budgetary firewalls in TEA-21 enhanced investor confidence that future Federal-aid apportionments can be a reliable source of repayment for bond issues.

These changes have led to the creation of Grant Anticipation Revenue Vehicle (GARVEE) Bonds, securities that are backed primarily by future Federal highway grant reimbursements. Between 1998 and 2001, 10 states issued approximately \$5.2 billion of GARVEE-type debt to finance various highway and bridge projects and transit equipment. Several other states are actively considering bonding or seeking legislative authority to issue GARVEEs.

Where is this strategy leading us?

Leveraging future Federal aid increases reliance on a revenue stream that many argue will decline over time with the introduction of alternative fuels and technological advances in vehicle fuel mileage. To date, states legislatures (and rating agencies) have limited the amount and term of the GARVEE-type debt that has been issued. As highway travel demand and congestion increases however, the temptation to overleverage may be more difficult to resist. The challenge for

states is to use bonding in ways that complement other innovative finance initiatives, such as investing in revenue generating assets.

Development of Toll Facilities

What is this strategy intended to accomplish?

Interest in facilitating the development of toll facilities reflects a desire to create new revenue sources to support transportation investment by public and private entities. When the Federal-aid highway program was created in 1916, Congress explicitly prohibited the imposition of tolls on any facility that received federal funds. Exceptions to that policy have been established over the years, but nevertheless, today less than 4% of the National Highway System is tolled. In large part, that is because political opposition to tolling existing facilities remains a significant hurdle. No states, for example, have taken advantage of provisions established in TEA-21 that allow reconstructed or rehabilitated Interstate segments or bridges to be converted to toll facilities.

In addition to generating revenue, there is growing interest in using tolling to actively manage available highway capacity in congested corridors. In response to higher fees charged during periods of peak use, some users will shift to less congested routes or travel times. To support development of value pricing strategies, the Federal government established a Value Pricing Pilot Program in TEA-21 to provide up to \$51 million of support (80% federal share) for projects incorporating peak-period pricing and related concepts.

Where is this strategy leading us?

Successful development of start-up toll facilities requires a unique blend of public and private resources and expertise. To meet the challenge, new public-private partnership structures and financing vehicles were created to facilitate the allocation of risk and benefits. Regional toll authorities such as the Transportation Corridor Agencies in California and the E-470 and Northwest Parkway Public Highway Authorities in Colorado worked closely with private design-build teams to finance and develop their projects. Private non-profit corporations, created to facilitate access to the tax-exempt markets, secured funding for the Southern Connector project in South Carolina and the Route 895 Connector in Virginia.

Though efforts to promote private development of public infrastructure continue (including proposals to create a new class of tax-exempt private activity bonds for toll projects and certain multi-modal facilities), state and local governments are increasingly willing to take the lead themselves. As a result, it appears that many new toll facilities may be developed using an old model: state and local toll authorities. The Texas Turnpike Authority, for example, recently entered the bond markets to finance a \$2.9 billion Central Texas Turnpike system. Georgia,

Colorado, North Carolina, and Louisiana are considering using existing or new state toll authorities to develop and operate projects. Though the states will likely use some form of design-build, the amount of risk transfer to private entities may be limited.

State and Federal Credit Assistance

What is this strategy intended to accomplish?

By providing other forms of assistance besides grants, the Federal government and states can help project sponsors accelerate construction of certain projects and attract additional investment for transportation infrastructure from local and/or private entities. Federal credit assistance has the added benefit of being scored for federal budget purposes based on the anticipated cash disbursements that may not be repaid rather than the total amount committed.

The vehicle for providing credit assistance at the state level is the State Infrastructure Bank (SIB). SIBs can be structured in a variety of ways, but most are revolving loan funds. As of October 1, 2001, 32 states had entered into 245 loan agreements with a dollar value of nearly \$2.9 billion. The South Carolina Transportation Infrastructure Bank initiated approximately \$1.5 billion of the total loan activity. Capitalized primarily with state funds (including a share of the state gas tax and truck registration fees), it has facilitated the development of nearly \$2.4 billion of projects.

At the Federal level, credit assistance is provided under the Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA). It authorizes the Department of Transportation (USDOT) to provide up to \$10.6 billion of credit assistance to surface transportation projects of national or regional significance. As of August 2002, USDOT had committed nearly \$3.6 billion in assistance to 11 projects, primarily in the form of direct Federal loans. The total budgetary cost for providing that support, based on federal guidelines, was approximately \$200 million.

Where is this strategy leading us?

Most states have experimented with the SIB concept, but few have used it extensively. It is not clear that loan activity will increase if all states are allowed to capitalize their SIBs with Federal-aid funds (TEA-21 only authorized four states to do so), but the general consensus is that each state should at least be given the option.

It is too early to tell whether TIFIA can be more than a niche program. As noted in the Report to Congress on TIFIA, there are a limited number of projects that fit the TIFIA profile and they typically take five to ten years to secure necessary planning approvals and environmental clearances. There are proposals to lower

the minimum threshold for eligible costs from \$100 million to \$50 million, but sponsors of smaller projects are likely to wait for funding through traditional processes and/or to pursue a direct Congressional earmark.

INSTITUTIONAL FACTORS INHIBITING INNOVATION

The innovative finance strategies pursued to date have been constrained to some extent by the established roles and relationships among the various institutions involved in developing transportation infrastructure in the U.S. The parties (federal, state, local governments and the private sector) have significant experience working together to construct projects so the natural focus of their initial efforts to address transportation funding gaps is to enhance approaches to project delivery. Each party can bring something to the table (more flexible rules, design-build, non-recourse financing, etc.) and the outcome can be measured in terms of the number of projects advanced or the dollar amount of savings. The challenge facing the transportation community, however, is not how to build projects more quickly. Attention needs to be directed toward developing a sustainable source of funding for transportation investment and partnering with relevant stakeholders to address mobility issues. To that end, the following discussion attempts to highlight some of the institutional dynamics that may need to be addressed before more beneficial change can occur.

Federal Government does not develop projects.

With the exception of certain roads on Indian reservations, in national parks, and on other federal lands, the Federal government does not build, own or operate specific projects. Therefore, despite billions of investment, there are no federal transportation assets to sell or securitize. In addition, the Federal government does not initiate projects and it is not considered the logical sponsor for private transportation concessions. As a result, private companies interested in playing a significant role in U.S. transportation finance have to pursue opportunities in several states in order to find projects of sufficient scope and number to justify a major commitment of resources.

Potential strategy: Assign development responsibility for a “mega-project” of national significance, such as truck tollways or NAFTA superhighways, to the Federal government. USDOT could outsource most services and would work closely with state and local partners.

Federal transportation policy influenced by many competing interests.

Transportation issues affect every individual and business, so a number of entities effectively have standing when it comes to federal transportation policy, including the Departments of Treasury and Labor, the EPA, and OMB. As a result, some innovative transportation finance proposals are never fully considered. Issues that face continued resistance and debate include:

- increasing federal motor fuels taxes.
- issuing debt at the federal level for transportation purposes,
- using General Fund resources to fund transportation,
- allocating federal transportation funds based on need or the level of effort put forth by each state to finance its infrastructure,
- limiting the amount of Congressional earmarks for specific projects,
- easing requirements related to environmental, labor, and other social objectives.

Potential strategy: Build strategic coalitions with traditional opponents of innovative finance proposals and directly address their issues, such as double taxation and urban sprawl.

State DOTs caught in the middle.

Standards and performance measures for the traditional services provided by DOTs are well defined. In addition, a variety of processes have been established to ensure accountability, such as competitive bidding and program audits. As the missions of DOTs expand and new services are added (innovative finance, ITS, etc.), similar “institutionalization” needs to occur. Issues related to transportation finance include:

- negotiating the appropriate level of public subsidy for project financings,
- managing non-compete provisions and other policies designed to facilitate private development of infrastructure,
- developing standards for “best value” procurements,
- designing projects to maximize revenue,
- selecting which projects are developed in-house and which can/should be done privately,
- managing various intermediaries (consultants, bankers, lawyers, etc) involved in project financings,

- building public involvement/support for innovative finance initiatives, and
- facilitating the sale/purchase of public infrastructure projects.

Potential strategy: Create a standing advisory committee with broad representation from various transportation interests to help identify and evaluate relevant policy issues.

Local resistance to innovative finance initiatives

It is difficult for local communities to evaluate and build consensus on whether a tolled project delivered in three years is better than a toll-free facility in 10 years. Similarly, there is no incentive for localities to understand or accept that transportation resources may need to be distributed unequally in order to effectively address mobility issues in different areas of a state.

Potential strategy: Create financial incentives that reward locally developed transportation solutions.

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Finance and the Visible Hand of Technology

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Finance is about more than just money. This is not an easy sentence to say with a straight face, nor one that many people necessarily would believe. Obviously, money itself is very important, since how much we have determines how much we can build and how well we can manage the assets we have.

The general consensus is that money will be harder to find for TEA-3 than for TEA-21, a result of improving fuel economy, slower economic growth, higher oil prices, a tighter federal budget and perhaps some resentment over the success achieved six years ago. This implies we need ideas that involve more than changes to our current financial toolbox. Such changes, in turn, may open the door for approaches that go beyond the traditional broad-based user fees, with or without some leveraging. My discussion today will not solve any immediate problem, but it could help with the next big piece of legislation – TEA-4?

Background

How we raise money affects what we do and how well we do it. Here I am not just talking about TIFIA versus federal apportionments or one flavor of GARVEE bonds versus another. Rather, the issue relates to the fundamental economic linkages between prices and service quality. Put another way, in the best of all worlds we should be able to generate funds in ways that encourage better service and operating efficiency as well as providing an adequate level of funds.

This sounds a lot like what a successful private sector business does – simply provide a useful service, control costs, and generate enough money to cover capital and operating costs as well as a return for the future. Finance is really about prices. In the private sector, prices reflect the quality of the product sold or the value of the service provided. That is, the amount of revenue a firm books relates directly to the quality of the service that it provides relative to that of its competition.

Feedback between quality and the amount of business a firm receives can be rapid, particularly in businesses that deal directly with the retail customer. This is often very personal. We all have been asked by our waiter or waitress about the quality of our meal – and may even have had an entrée dropped from the bill if we expressed dis-satisfaction. How often has the Secretary of Transportation or District Engineer asked us if we were satisfied with our daily commute, let alone offer a refund as a sign of their commitment to improve?

This process is part of what Adam Smith termed “the invisible hand” that shapes the economy. While highway finance has long relied on a set of broad user fees or benefit taxes, these reflect long-term values rather than near-term service quality. As long as the level of highway revenues bears at best an indirect linkage to the quality of service received by the public, we will be forced to work with a very “visible hand.” ITS and telematics technologies may offer a way to make the idea of a “visible hand” practical.

In sum, I believe there is an interaction among finance, technology, customer service, and the management of DOTs. If we look at just finance alone, we risk continued frustration – and a transportation system that fails to meet our economic and social needs. If we work to improve management alone, we miss using one of the more effective tools for efficiency and customer satisfaction.

To set the stage for this argument, I will address two trends that are broader than finance itself. First is the move by Secretaries of Transportation and many other transport administrators to emphasize their role as managers of a business. Second, are changes in technology that make it possible to measure highway performance directly.

Management

To date, the most imaginative DOT leaders think and act like they are running a business – indeed, most state Secretary's of Transportation now call themselves CEOs rather than CAOs or Chief Administrative Officers. This has generated interest in a host of new management techniques and approaches. For example, asset management is now a hot topic, albeit one that remains dominated by engineering-based techniques and measures, rather than financial measures and economic efficiency.

Asset management offers promise, but few systems have yet to be implemented that examine assets the way a private enterprise would. One reason is simply that our surface transportation systems do not operate in a free market. Our ability to generate a real breakthrough in this regard could take one of two paths:

1. Direct competition. To be effective, this needs to be more than transit versus highways since it is tough to have competition when one entity has 95 percent of the market and its competitor five percent. Thus, despite the ideological appeal of public-private partnerships, we are unlikely to have more one DOT per state.
2. True Measures of Performance. If real competition is unlikely, then at least we can try to improve our measurement of service. Once we measure the performance of the highway system on a consistent and routine basis, then we can start to develop a pricing system.

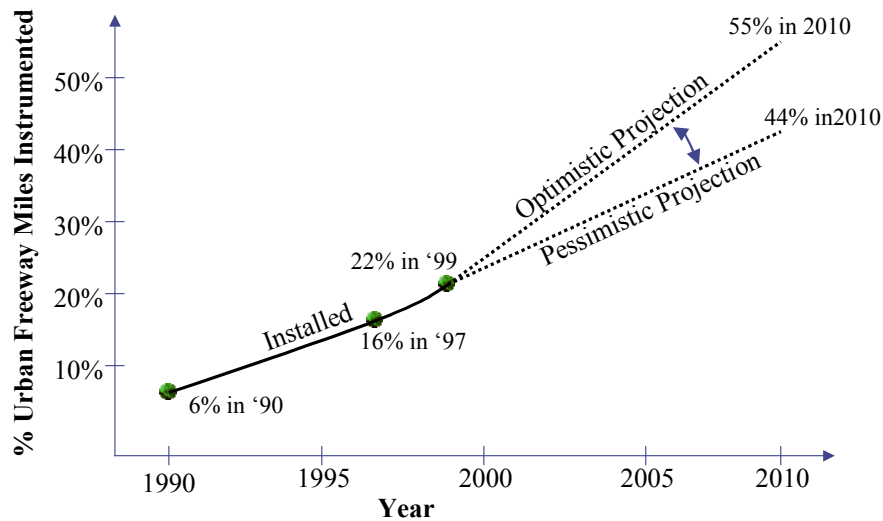
Because there is no true competition for local highways and transit, there is no incentive to develop true measures of customer satisfaction or system performance. How do we do this without the invisible hand of the market place? Perhaps we can make a much smarter visible hand.

Transportation depends on assets, but this emphasis ignores the routine economic and social values that it provides. For example, while volume/capacity

ratios and levels of service provide one measure of congestion, the consumer of transportation services probably relies on a much more basic measure: Did I get where I want to go on time? Or more broadly, what fraction of peak-hour trips arrived on time this morning? What fraction of supply chain shipments arrived on time? This is similar to measures used by the airline industry today. Again, this requires a direct and personal measure of highway performance – something that a vehicle-oriented technology might provide.

Technology

Technology offers a possible way to measure direct performance. Certainly one dream of the ITS community has been roadway sensors that make it possible to know traffic speeds on all roadways, all the time. Such information could then be used both to manage the system better as well as to provide information to the traveling public. In reality, the pace of deployment has been glacial, with only 22 percent of urban expressways having sensors of any kind by 1999 and less than 10 percent of major arterials (see Figure).¹ In recent years the rate of growth has rocketed to 3 percent a year – meaning the problem will not be solved in my lifetime.



As Phil Tarnoff from the University of Maryland points out,¹ advances have been made that include:

- Sophisticated side-fire radar detectors capable of providing traffic flow data by lane
- Video imaging that can now provide reliable measurements of traffic speeds, counts and queues
- Cellular geolocation technology with the capability of tracking individual vehicles in order to measure their speeds and travel times, has been successfully demonstrated
- Tracking of vehicles with toll tags to measure speeds and travel times is currently in operation
- Tracking of vehicles through the use of license plate readers that measure speeds and travel times is also currently in use
- Systems of instrumented probe vehicles using GPS for positioning and other sensors to measure travel speed, weather and pavement conditions are also under development

Frustration with the slow pace of deployment despite the range of technical solutions has led to some new approaches. US DOT's INFOstructure plan, for example, calls for a nationwide network of traffic sensors and video monitors. This is ambitious and also offers benefits for Homeland Security. On the other hand, the cost is very high (\$5 billion has been mentioned) and it faces a problematic future in our new world of growing budget deficits. It also represents a continuation of existing technologies, just with a fixed schedule and more funds to back them.

Technology, however, can also develop along non-linear or divergent paths. These types of changes are hard to foresee, in part because many fail or remain dormant until the time is right. When they do occur, they can create a chain-reaction of changes well beyond the immediate area of focus. Examples abound in our daily lives, with the most obvious coming from the internet, wireless communication, and the personal computer. Examples from previous generations include the automobile, jet aircraft, the US Interstate Highway System, and so on. While progress continues, transportation technology has yet to see such a breakthrough.

Within the world of traffic sensors, we may be on the verge of a non-linear shift. This revolution will be based on vehicle-based sensors, rather than those that report from specific points along the highway infrastructure. Floating car data and vehicle probes appear more powerful and cost-effective options than fixed, infrastructure-based sensors. The technology to do this also opens the door to a host of financial initiatives from refunds for poor service to performance based pricing, to true management incentives.

Vehicles offer several advantages:

- they provide a direct measure of performance as seen by the roadway customer, rather than measures inferred from volume-capacity ratios;
- they can do this across all roads in all parts of the country at the same time;
- they can provide measures that are consistent from road to road and from city to city and
- they provide geographic detail that can be reshaped to meet a variety of specific purposes.

Such data, in turn, will support most traditional traffic management activities. Because of the direct link with roadway performance, they also provide the foundation for a profound shift in transportation management. This has implications for activities from day-to-day management to financing to emergency support. The same data provide the long-sought information needed by the traveler information portion of the telematics industry. It may even be possible for more than one of these firms to make money!

Vehicle-based sensors are well along the development path. Floating car data systems exist on small scales in Europe. OnStar in the US has units in some three million vehicles. These represent more than one percent of the nation's fleet – this should be enough to estimate travel speeds by roadway link. Of course, a number of communication and financial issues need to be resolved, before this becomes commercial reality. Other systems propose the use cell phones as data probes to provide location, speed, and acceleration information. At the same time, some 600,000 commercial vehicles already have tracking equipment as part of the fleet management industry, with Qualcomm the leader.

As one example, ITIS Holdings has deployed a floating vehicle system that converts high-mileage vehicles into probes and provides regular reports on more than 8,000 miles of motorway and major arterials in the UK. Their commercial customers include the British AA, BMW, and OnStar. Other than this, no vehicle-based system has been deployed on a significant scale. All have one or more problems to resolve, most finance-related.

But the time is right for a new way to collect traffic data. The technology exists and several commercial enterprises have begun to deploy their networks. Vehicle-based systems will support activities and businesses well beyond traditional traffic problems. How might the public sector play a role in this movement and, what implications might this have for how we manage and fund transportation?

Implications

If through some bizarre twist of fate, I were named benevolent transportation czar, I would want to manage and fund my transportation system a bit differently. I would take a lesson from the best of the private firms and set a big hairy objective. Why not work so that all important trips are completed on time – or at least better than the airline industry. Such an objective would have implications for a very different transportation system, both in how it is managed and how it is funded. What might such a transport system look like:

- Part of this would involve having information on system reliability that could be communicated to travelers in advance so that they could manage their own travel. I am not naive enough to believe that this would cause people to shift modes, but they could:
 - change the time they travel
 - shift routes to take full advantage of available capacity and
 - call ahead to minimize disruption.
- Part of this would mean that I would manage my system to a pre-set performance standard:
 - average speeds better than 50 miles per hour for example,
 - all routine maintenance and construction work in off-peak hours,
 - all incidents cleared in X minutes, and so forth.
- Part might involve a more personal relationship with the traveler. I would even go so far as to provide rebates if performance standard were not met. Again, technology in the form of transponders offers a direct way to implement a “money back guarantee.”
- Part would also involve knowing the relative value of a timely trip completion (just in time inventories provide a direct example for freight).
- Part would also involve a direct cooperation with certain major transportation customers, ranging from sporting events, to job locations, to individual industries. This knowledge would provide a source of money (increase variable tolls is one way to ensure a given quality level). It would also require a direct cooperation between the transportation provider and its customers
- Part would involve a very different set of internal standards for district engineers. For example, knowing that it was possible to measure the average speed for the morning or afternoon commute, would change the incentives for the district engineers. The British highway authority already does this when they outsource maintenance work, with part of the compensation dependent on the lack of congestion as measured by the amount of time that design speeds are met.

In closing, let me return to the finance question. Today, highway travelers in the US pay a low average rate – only pennies per mile traveled (NEED ACTUAL NUMBER). This is much less than the 35 cents per mile that it costs to own and operate their vehicle. Today, financing is based on the long-term average cost of

highways, with a correspondingly average quality of service. The ability to provide a high quality service begins with the ability to measure performance, but it allows a price that more closely reflects the value of the completed trip.

We are talking about large sums here. About a decade ago, the State of Washington issued an RFP for private transportation systems. Thirteen bids were received and six were accepted by the DOT – one remains alive, the construction of a new Tacoma Narrows bridge. One of the proposals approved by the DOT was by United Infrastructure (a partnership between Bechtel and Kiewit) that called for private operation of the Seattle expressway system. UI would fund and build all the remaining HOV lanes in the metropolitan area and then use a system of variable electronic tolls that would guarantee a level of service of 40 miles per hour. This corresponds roughly to the system in use along I-91 in Southern California and on the San Diego HOT lane.

Preliminary estimate showed that in addition to providing economic benefits from a guaranteed level of service, enough funds would be generated to eliminate the motor fuel tax, to fully fund the planned regional transit system, and to provide subsidies for low-income travelers. Even more surprising, this was even approved by the local MPO. Eventually, it was too ambitious and the state turned to more traditional projects such as a new toll bridge.