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Financing Intermodal Transportation

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“Show me the Money” was an operative line for many “things” in the United States during the 1990s, including transportation as ISTEA and TEA-21 provided either new federal revenues or reallocated federal revenues to transportation. For transportation in the public sector, the operative phrase today would be “Find Me the Money.” For 10 years the United States has struggled with the issue of how to finance its transportation system. There is near unanimous agreement that there are insufficient funds to meet the public investment needs for surface transportation at the national or state/local levels; and, there is similar agreement that the “motor fuel tax” is either insufficient or not a viable way to raise the level of funding to meet the financial challenges facing the public sector’s transportation investments.

What to do? Congress in SAFETEA-LU has established 2 new commissions to tackle the issue of transportation finance. As the Commissions begin their work, states, cities and the private sector are approaching the issue of transportation financing from several directions. Meetings and conferences all over the United States are thriving as debate on the future of public transportation funding and finance becomes more critical. Unfortunately, these discussions and debates are about funding a transportation mode, as opposed to financing a transportation system.

Two key US transportation finance issues are emerging: finding a funding source capable of providing a sustainable federal transportation program; and, defining the role of the private sector and/or a private sector public sector relationship in financing and running transportation. These are not mutually exclusive issues. Other than highways the federal transportation system has been wrestling with the differences and opportunities for decades. Only on the highway side has this become a critical issue; and is only surfacing because of the shortfalls in financing new highway capacity.

Unfortunately the two dominate finance issues are not seeking to finance a transportation system, but transportation modes and projects. This paper is intended to explore several of the proposed financing ideas, particularly the emerging privatization of public infrastructure, and to propose a radical new approach and justification for a new federal transportation system revenue source to replace not just the motor fuel taxes for surface transportation, but all “user fee” taxes in the modes to truly finance a national transportation system. Before doing so, let me provide some context on how and why we have gotten ourselves into the funding problem; and, why I am skeptical about the current public sector’s modal approaches for solutions.

Context:

Funding for transportation in the United States, be it public or private sectors, is anchored in the concept of “User Fees¹.” The federal “user fee = user benefit” philosophy has

¹ Historically Canadians have not embraced the user fee concept as the means of financing transport. In Canada, the gas tax is part of the general revenue fund; and it is the general revenue fund that finances transport. User tolls are not as prevalent in Canada and are only emerging in transport projects such as 407. There is also a law that requires a tolled facility to have a free alternative. This would cause havoc in the US.

spawned a public policy and transportation structure that is fragmented, inconsistent and unnecessarily competitive. This philosophy and the resultant transportation fragmentation create the underlying tension and context for discussing the public funding for transportation system investments. Since “user fee = user benefit” philosophy underpins transportation funding in the United States and the philosophy is modally driven, then the policies and structures to fund transportation and these types of projects are also modal. The results are fragmentation of the federal transportation structure. This fragmentation exists at several levels, both public and private, and occurs both from within and between the public and the private sector. In short, we fund transportation modes and not a transportation system.

This is a flawed public policy that wastes resources (financial, time, the environment, energy and human). It also conflicts with other national policy priorities and produces federal/state revenue sources such as the gas tax, as the best case for a user fee to finance surface transportation. The result of this public policy is that every head of a DOT in the United States wants their citizens to drive a Hummer a thousand miles a week in order to get the yield from the gas taxes. Is it good energy policy? No! Is it a good environmental policy? No! Is it good transportation management or policy? No! Is it good for raising revenues today? Historically, Yes, but only in the short run! It is the revenues that drive transportation investment decisions. Each mode has its own financing source (see Table 1) and federal administration.

Table 1: Revenue Sources by Mode

Surface Transportation (Taxes and fees)	Aviation (Taxes and fees)	Rail (Taxes and fees)	Other Revenue Sources
Motor fuel taxes (federal and state) Motor vehicle registration fees License fees Property taxes Vehicle sales taxes Weight distance Federal heavy vehicle user fee State transaction fees Truck tires and tubes taxes Tire and tire disposal fees Vehicle import fees Pavement damage fees Traffic impact fees Emission fees Parking fees Value added taxes on autos and trucks; <i>Ad valorem</i> fees Dedicated “local option transportation taxes” ² Sales taxes Property taxes Value capture taxes on the transportation investments Emission fees Benefit based fees	Passenger facility charges (PFC) Cargo Waybill tax Jet fuel and avgas taxes Passenger Ticket tax Passenger Flight Segmentation tax Passenger Security surcharge International Departure tax International Arrival tax INS user fee Custom user fee APHIS Passenger fee Frequent Flyer tax APHIS Aircraft fee LUST Fuel tax Airport Carrier Security fee	RR Diesel Fuel taxes (put into the general fund)	Hot lanes Fare boxes General Fund appropriations at both the state and local levels Tolls Airport parking Airport rent/lease of gates and retailers Charter bus earnings Congestion/Value Pricing Rural public transportation (fees/contributions from federal funds for social services, e.g. Medicare.) Advertisement Concessions Sale/lease back transactions Rentals and/or leases Regional sales taxes Food and beverages Value captures agreements Stock issues Bond Proceeds

² An excellent summary of local transportation taxes throughout the country is found in T. Goldman, S. Corbett and M. Wachs, *Local Option Transportation Taxes in the United States (Part One: Issues and Trends)*, Institute of Transportation Studies,” University of California Berkeley, March 2001.

Historically the “user fee” concept has been married since the early 1950s to a “pay as you go” philosophy. The gas tax would provide the revenues to build transportation investments. The “pay as you go” philosophy is changing and the “innovative financing” approaches from ISTEA and TEA 21 have moved public transportation finance towards bond/debt financing. Innovative financing options in ISTEA and TEA 21 are primarily debt instruments or policies, such as GARVEES, Transportation Infrastructure Financing Innovations Act (TIFIA), and State Infrastructure Banks (SIBs). SAFETEA-LU built upon these debt instruments with Private Activity Bonds (PABS).

Change in Public Transportation Financing Philosophy:

Debt:

As the cost and demands of restoring and maintaining the existing transportation infrastructure have ballooned to equal or exceed current resources, states have begun to realize that they need new revenue sources to undertake new capacity projects. Increasing gas taxes in an era of “tax cuts” is a politically risky undertaking. However, 32 states since ISTEA have done so; but only Wyoming has raised their gas tax level to equal inflation. The inability to raise gas taxes sufficient to keep pace with inflation also underscores public mistrust of “public” officials and DOTs in particular. If the public trusted its DOTs there would be no need for another other “innovative” financing schemes. With public discontent with increased taxes³, the use of debt is very attractive. Some of the reasons and results are:

Debt allows Governors and DOTs to believe that “bond proceeds” are revenue and to spend them as such. Immediate gratification is achieved by debt. Spend now and someone else will pay for it later. In New Jersey, this strategy has resulted in total debt payments being more than the initial projects; and, the New Jersey Transportation Trust Fund have been on the verge of bankruptcy three times in the last six years, only to be saved by the refinancing of the debt, yet again.

Debt can help political supporters by having them as bankers and bond counsels for the bonds. Debt can help cut or maintain tax levels, and in some cases support general revenue tax cuts.

Debt provides the capability to do new capacity projects. The companion argument for debt is that by doing the project now the public sector pays less for the project than it would by deferring the decision to a later more inflationary period.

Debt has also resulted in a reconsideration of “tolls” as a viable means for paying for highway and transit projects.

³ Last year when the price of gas reached \$3.00 a gallon, congressional officials were calling for the suspension of the gas tax and Governors were contemplating lowering or suspending the gas tax in their states. This pattern is similar to the outcry 6 years ago.

Tolls:

In a society that called its major roadways “freeways,” the idea of “tolls” is anathema. This is the “old way” that built the Pennsylvania and Ohio Turnpikes. Our motor fuel taxes would build the “new way” of a national Interstate System. This philosophy begins to change with ISTEA and TEA 21 when debt service becomes eligible for federal reimbursement and tolls are allowed on the Interstate for reconstruction or replacement. SAFETEA-LU allows for some experimentation for Interstate tolls but only for the life of the debt. At the moment, the existing Interstate system cannot be tolled.

The emergence of better technology and of the necessity for funding new highway capacity or major highway reconstruction/replacement has led to a renaissance in tolling as a pricing mechanism; and it has increased the possibilities for private ventures or partnerships. Pricing capacity and timesaving have given rise to the idea of “Hot Lanes.” Technology is also capable of addressing environmental problems of air pollution and congestion at toll barriers, as well as improving safety by removing tollbooths.

These are all to the good. However, political attitude lags behind on the idea of tolls. SR 91’s “Hot Lanes” were a complete success. This congested highway got increased capacity for those who were willing to pay for the new capacity. Capacity and time sensitive pricing worked as people paid up to \$4.50 for a 20-minute timesaving. The private sector built the “Hot Lanes.” The problem arose when the politicians in Riverside, California had serious issues with the private sector making a profit from a congested roadway.⁴ They wanted the roadway back under public control. The public sector bought out the private sector at considerable cost. The tolls are still there and more costly, but now the public sector owns them. The issue of the public’s views on profits is an important issue that appears to be driving many financing decisions.

Both the Chicago Skyway and the Indiana Tollway deals further represent the public’s distrust of their public transportation providers. The Skyway and the Tollway are public toll roads unable to raise tolls because of the public’s opposition. Indiana had not raised its toll in 16 years. The sale of the Skyway netted Chicago \$1.8 billion and 87% of the toll payers are from Indiana-- people who do not vote in Illinois. It is unlikely that a toll policy that could increase the \$2.00 toll to \$60.00 per trip over the life of the transaction⁵ would have been accepted by the public if proposed by the public. However, it will become acceptable from the private sector. The failure of public support for public authority toll increases has resulted not only in automatic toll increases by the private sector, but at a rate to sustain a private sector profit. This deal would not have happened if the public trusted their DOTs to use tolls wisely. The ability to toll and use federal funds to pay for debt costs has made public-private-partnerships (P3) possible. Texas has

⁴ The official reason for the public buy-out was the non-compete clause in the agreement. Talking with state and private sector decision makers it is clear that the clause could have been acceptably modified, and that the only reason was the public’s opposition to the private sector’s profit from the “Hot Lanes.”

⁵ “... With an allowance for initial rate increases averaging 12.50% per year for a total of 150% in a twelve year period and ongoing increases of 2% to &5 or over the life of the franchise that will drive the beginning \$2.00 toll up to over \$60.00 per passage if rates increase at 3.00% per annum increases.” “The Chicago Skyway Sale: An Analytical Review”, NW Financial Group, LLC, May 1, 2006, page 1

adopted toll and other financing elements to be the primary financing for all new highways, such as the Trans Texas Corridor project.

P3:

P3s have had rough start in the United States. The early '90s witnessed efforts by the states to unload major projects that they were unable to do under the rubric of P3. The state of Washington, for example, was one of the early and active leaders in the P3 concept. The Legislature even passed significant founding legislation. Then, when the public began to reject the notion of new user fees for facilities that they thought should be free, or made it clear they did not want the transportation project, the Legislature withdrew their support- leaving the private sector with millions in investments, no projects and no returns on investment. In Virginia the private sector moved to build the Dulles Greenway as a private toll facility. The public objected and the state built a parallel highway to compete with the facility.

The early concept of P3 was a contract to try and get projects that were experiencing significant problems underway quickly. In light of the earlier problems, the concept of P3 did not move forward aggressively as the private sector was wary and the public sector was hearing concerns from their construction industry that the work would go to outside contractors and the dollars would not stay in the state. The contractors' concerns are still an issue, but the concept of P3 has evolved into concession/franchise agreements and these two agreements have changed interest in P3 and should change for the better the public's approach to their transportation assets.

A more robust version of P3 is emerging today-the design, build, finance and operate version. The federal receptivity to tolls and the enactment of Private Activity Bonds (PABs) in SAFETEA-LU are two important factors changing the landscape for P3. The other significant change is the concession/franchise agreements.

We discussed tolling earlier. PABs should change the whole relationship between the public and private sectors in negotiating P3s. Prior to PABs the private sector argued effectively and correctly that they should not be expected to upfront capital for a public project, because they would have to issue taxable debt and that the interest costs would significantly add to the cost⁶. States/communities, on the other hand, could issue tax-exempt bonds and, thereby, lower the overall costs of the project. PABs provide the private sector with the ability to invest tax-free bonds in the start of project, thereby putting the private sector at risk from the beginning. States can now negotiate on a more even playing field with the private sector. PABs also provide communities with another benefit of not being counted in the debt ceiling for their communities.

⁶ Earlier efforts to modify the US Tax Code had only limited success in this matter. It is only when PABs are created that the private sector can truly bring funding to the start up of a project without increasing the cost of the projects.

Concessions/franchises are all the rage in the US transportation financing community. The 2005 Chicago Skyway lease of its .8-mile toll road to a private consortium in return for an up-front cash payment of \$1.82 billion started the current interest. This was followed by Indiana's 75-year lease of \$3.85 billion to two private firms for the Indiana Toll Road. These two deals have provided considerable discussion at various conferences. Ironically, the type of projects or existing infrastructure that would attract concessions/franchises is between 4-7 percent of the US transportation system. It is however commanding most of the attention and for good reasons. The two key reasons are the ability of the public sector to retain future public policy flexibility⁷ and the ability of the public sector to determine the value of its assets.

The loss of future public policy flexibility is a serious concern. The public infrastructure plays a critical role in America's economic vitality. What role an asset such as the Indiana Tollway or the Chicago Skyway plays in the future is uncertain? The public's ability to protect its options to use these facilities to advance its own agenda is lost in the two deals, unless they buy out the private sector. Fifteen years ago we were not talking about NAFTA Trade Corridors. Today we are. We didn't know then which transportation assets would be needed to meet NAFTA demands. This year we are celebrating the 50th anniversary of the Interstate System. No one could imagine how that system has changed transportation in the United States and the world. What would have happened if we had given up public flexibility? What transportation facilities will be needed to address the economic and mobility needs in the next 15 or 99 years? If we remove the public sector from using its key transportation investments, we will lose opportunities.

While the current approach to concessions and public flexibility is for the public sector to buy out the value of the private sector, it can be very costly as the SR 91 project demonstrated. Several states Texas' Trans Texas Corridor, Virginia's Pocahontas Parkway and Florida's Port of Miami Tunnel are attempting to avoid the buy out approach and are putting in language to preserve some public flexibility, but the effort is too limiting because the approach is not one between partners but is simply a limited contract.

There is another way to address this issue and to preserve the opportunity for concessions and public future needs. It is obvious that the transportation facility has economic value or the concessions would not be there. If the investment has value, then the public sector approaches P3 as a public-private-equity partnership⁸. This is a true partnership where

⁷ This was a key reason why British Columbia chose not to move in this direction for the "Golden Ears Bridge."

⁸ The development of a real P3 "equity partnership" approach is an opportunity to change the past. The equity approach views the public and private sectors as real partners in the project. Both share in the risks and the profits of the project over the long haul. Each brings to the project its strengths. For example, the public sector has the best resources to do the up-front, high-risk work of project development, environmental assessment, community outreach, and condemnation. The private sector's contribution is efficiency, quality and the ability to generate revenues. Under this equity approach, the public sector doesn't have to worry about overhead rates, quality control, inferior materials, cutting corners, or assembling all of the money to do the project. It is in the private sector's interest to ensure quality and efficiency. Thus, public sector overhead costs can be lowered, thereby lowering the overall cost of the

the participants each share in risk and awards depending on the junior or senior position of the partnership. In most concessions the public sector can take a junior partnership position with a “springing seniority” clause. The “springing seniority” clause is based on pre-negotiated terms that allow the public sector to protect its future interests in the asset. If the state believes that the asset is critical to advancing state or regional or national interests, and the senior partner is opposed to using the asset for the public’s interest, then public’s junior position springs forward to a senior position. If the state’s actions result in a financial loss to the other senior partner, then the public sector makes the harmed party financially whole. In this way both parties will be protected for meeting the challenges and uncertainties of the future.⁹

The concession/franchise approach should also be a wakeup call to the public sector about the value of our transportation assets. The public sector’s traditional approach to valuing its assets is the cost to build and maintain the asset and its finance costs. Governor Mitch Daniels was hoping for \$2 billion for the Indiana Tollway. The offer was \$3.85 billion. The difference was in the valuation of the facility over the long term and not simply the costs. If the public is intent on moving in the direction of concessions, then they need to reassess the value of its assets first. They need to recognize that the transportation asset is more than itself; it is part of a system that is tied to economic opportunities in and around the asset. When the public sector begins to understand these dynamics, they can better assess the value of the transportation asset and better negotiate with the private sector.

P3s or concessions are not a way to finance transportation systems. The way P3s and concessions are being pursued in the US is to finance discrete projects or to lease a public asset and generate an immediate cash flow for the public sector. In one sense concessions are another form of borrowing/debt. One possible exception to the project concession/P3 approach is Professor Giglio’s “SAVING THE NATION’S SURFACE TRANSPORTATION SYSTEM” where he proposes a “Third Way” to approach P3 by creating “Regional Mobility Consortiums” that maintain significant public interest in P3 arrangements. However, Joe Giglio’s approach is tied to specific user fees and does finance a national transportation system.

If P3s and concessions are politically and financially limited, then how can we fund our transportation investments and system? The following are several “new” ways to achieve new revenues, including a radical approach.

Another User Fee Approach to Transportation Finance:

The technology exists to price transportation based on the vehicle miles traveled (VMT). Indeed, the state of Oregon, who first gave us the gas tax in 1913, is experimenting with a

project. P3 requires a change in attitude whereby the public sector shares in risk and shares in the project’s profitability, which is especially relevant when the public sector takes the up-front risks.

⁹ Term negotiations for what triggers the “springing seniority” and the value of the senior partner’s loss will be intense.

VMT. For many this is an ideal tax that captures consumer usage and better equates it to direct customer benefits. This approach in theory is doable across the country. It can be tied into “Hot Lanes” and other transportation values to price transportation based on the value of consumption.

There are problems with this approach. Putting aside for the purposes of this discussion the privacy issues, one of the formable issues in this approach is “selfishness.” The current debate on donor/donee for federal funds is based on the “donor” states belief that they should receive back all or almost all of the federal gas taxes collected in their state. This is a very prevalent and major position that has become a serious issue in transportation reauthorizations bills; and the law is now guaranteeing almost 95% return to “donor” states. Imagine a scenario where we price based on the mileage over roadways. Users will argue that the money generated on their roads should and must be spent on their roads not only at the local/state level but on the national level as well so much for a national transportation system.

Another critical problem of modal user fees is the failure to understand that the United States has a transportation system. The VMT approach continues the modal funding option and not a transportation system option. The right choice may not be to increase mileage on our roads with single occupant vehicles. The right choice might be transit. The right choice may not be to add new highway capacity from Boston to New York City, despite the ability to recoup the costs by mileage and “Hot Lane” fees. The better choice might be to use real express passenger rail. As long as we use a financing source tied to a mode, the argument will be to use the funds to support that mode.

Other revenue producing ideas being discussed are: a “Value Added Tax” (VAT) on freight; a cargo/container surcharge; national vehicle registration tax; national transportation sales tax; or tax credit bonds (AASHTO’s pre SAFETEA-LU proposal). They will all generate funds but with the exception of the national sales tax they remain modal driven. The national sales tax would be regressive.

To break from this cycle we need a transportation funding source that is not modally dependent, funds a transportation system and can be tied to a viable performance measure. In other words, a radical new approach to federal transportation financing is needed.

Radical Approach: The ultimate “user fee = user benefit” for transportation is the federal income tax:

When Oregon first introduced the concept and practice of the motor fuel tax as a user fee, there were clearly defined and specific beneficiaries. The emphasis was on the user side of the equation, “user fee = user benefits.” Another approach is to publicly finance a national and regional transportation system that is independent of modal user sources and keeps the same premise of “user fee = user benefits.” However, it is based not on the user side but on the benefit side. The beneficiaries of our transportation investments are the

vitality of our national economy, the quality of our lives, transportation and resource efficiency, and our collective mobility that is unprecedented in the world.

If we start with a simple question: “Who benefits from our transportation system?” The answer is very simple and unequivocal: “every person and business in varying degrees, benefits from our transportation system.” No person, organization or business is exempt from the benefits of our transportation system. If all benefit, then all should pay.

If we accept this premise, then how do we quantify the benefits of transportation, and therefore the costs and who pays? The Gross National Product of the United States, for goods and services, is the quantifiable means of determining the benefit. GNP was more than \$10 trillion in 2000. The current funding system, as shown in Table 1, is unwieldy, administratively expensive, unfair – in that some beneficiaries do not pay and some pay disproportionately, and the amounts are insufficient to meet the modal and intermodal needs. The cost allocation studies of the current approach have demonstrated the true internal subsidies of the system and the political forces that keep the costs from being converted to revenues.

How do we fairly assess the financial derivative of transportation’s value to fund the transportation system? This can be determined as a percentage of the GNP; and the income tax system for business and individuals can be the means to collect the GNP value. The tax production value is the current federal transportation funding levels. This is a floor. The amount would then be adjusted upwards to conform to benefits and needs. All the current federal user fees funding the two trust funds would be rescinded in favor of the income tax.

Allocations to states, cities and local government, transit providers, airports, ports, intercity passenger and freight providers, etc. would be determined by historic shares, the transportation system needs of the states/cities and the region, and their performance in achieving the new federal transportation goals and policies – such as investing in regional and national corridors necessary for trade and national economic vitality.

The income tax revenues would then be collected into a federal Transportation Trust Fund. The Transportation Trust Fund would have similar features to the existing trust funds, such as contract authority, fire walls, etc. The existing federal transportation trust funds would be absorbed into the new fund and their intermodal funding restrictions dissolved. With one transportation trust fund, the need to fracture federal transportation policy into modes is removed. The modal administrations would continue as the operators and research elements to the transportation system, but a new set of transportation policies and goals based on national/regional transportation system performance, such as safety, efficiency, effectiveness, achieving other federal policy goals, such as the environment, energy and connectivity would be used to appropriate funding. Additionally, the federal role would be crafted to maximize market forces in investment decisions to balance the institutional decisions, so that a transportation system could be developed, maintained, and operated.

Allocations to states, cities and local government, transit providers, airports, ports, intercity passenger and freight providers, etc. could be determined by historic shares, and the transportation system needs of the states/cities and the region. They could also be determined by their performance in achieving the new federal transportation goals and policies.

Pros:

- Saves tens of billions in collection and administrative costs compared to the existing system. Savings that could go directly into the transportation system. (The single tax would eliminate all the other federal taxes.)
- Redefines the federal role as strategic with a national and regional focus, policy developer, researcher, and performance driver for a transportation system.
- Removes the friction between modes, by removing the funding competition between the modes in Congress.
- Diminishes the donor/donee argument that is based on the mistaken notion that the benefits of the nation's transportation system are solely derived from the states giving more than they get.
- Allows for intermodal investments.
- Removes the distinction between operating and capital dollars.
- Ties funding to the economic performance of the country and market forces.
- Preserves the states, local governments, airports, transit providers and ports ability to fund transportation as long as the investments meet the new performance goals and policies.
- Focuses on the system – the seamless and safe movement from point to point.
- Fair, those with higher incomes are achieving greater benefits and should pay more. Everyone would be paying for transportation, not just fliers and drivers, because everyone uses it, whether they use bike lanes and paths, highways, or trains.
- Structured so it could be part of more sizeable national infrastructure investment strategy, i.e. rebuilding the electric grid.
- Parenthetically, raising the income tax to respond to increasing needs or unanticipated changes in priority, such as transportation security after 9-11, would probably be easier than raising the gas tax, which has only been raised four times since 1932.

Cons:

- There is no current political support for any new taxes.

- This is not a user fee. It is a general tax, like the “sales tax” that is financing considerable parts of our local transportation investments throughout the country. User fees are explicit to the beneficiary.
- Would it really end the modal fights or simply shift them to the state/local levels?
- There would still be donor/donee fights between states like Connecticut that pay more in federal income taxes than they receive back in federal funds and states like Mississippi that are the antithesis.
- Creating a Transportation Trust Fund out of the income tax would be politically difficult due to budget policies and rules, and the competition between the social service side and transportation – “kids versus roads.”
- Should not the amount paid by each reflect, to some extent, the level of benefits received? For example, the transportation benefits in New York City are more extensive than in rural America; and the same income level does not purchase the same benefits.
- The Senate is unlikely to give up their modal committees and power.
- Won’t states raise their gas taxes to replace the forsaken federal level?

Conclusion:

There is a principle in science called Ockham’s razor.¹⁰ The principle states that if there are two or more competing theories or explanations and one is more complicated, then one should choose the simpler theory or explanation. Transportation policy and financing, particularly with respect financing a transportation system, is obviously not a science. We have not chosen the simpler approach. “Table I: Revenue Source by Mode” reveals a complex effort to incrementally finance transportation by mode. At best, our policies and financing are a process of compromise to make it work. At worst it is a house of cards ready to implode.

Simply because it works is not a reason to continue holding a position. Ptolemaic astronomy, that the earth is the center of the universe, can work for many things; it can even get you to the moon if one is able to do all the permutations and calculations. But these permutations and calculations are not needed if one starts with the premise that the earth is not the center of the universe and that the earth revolves around the sun. Our approach to transportation policy and financing has multiple permutations and calculations of modes with their own funds and rules that any believer in Ptolemy would appreciate.

The problem for Ptolemy was that his theory became more and more complex in order to explain events. Modal institutional structures and financing require increasing

¹⁰ William Ockham (1280-1349) his famous formula, called Ockham’s razor, was if everything else is equal, “what can be explained on fewer principles is explained needlessly by more.”

complexities to account for and fund multi-modal transportation connections. Intermodal transportation policy and interconnectivity are in part the undoing of the current transportation public policy, just as the moons of Jupiter were to Ptolemy. Trying to fit modal connectivity and transportation systems into the current national funding system causes disconnect with the “user fee = user benefit” concept that has moved public transportation policy and finance for almost a century.

This paper has attempted to array several ways we can finance a national transportation system. The current model is functionally deficient. We can cobble together a combination of new taxes/fees such as VATs on cargo or charges on the boxes/containers/packages, or VMT assessments or new national motor vehicle registration fees, national sales tax or other fees. We can make them more compatible with other public policies and we can layer them onto existing taxes and fees, particularly the federal motor fuel tax. We can index the motor fuel tax; or leverage it so there is a rush of cash upfront. We can change the laws to allow for greater flexibility in funding between the modes; or reallocate existing resources to meet new transportation needs. We can finance major projects by P3s or concessions.

We can do all of it or some of it; and we can make it work! But what have we accomplished? We have accomplished nothing other than to create more lines for the boxes in Table 1.

There is a better way to finance a transportation system in this country. It is a way that Ockham would approve. Accept the “user fee = user benefit” philosophy, but emphasize the benefit side of the equation. The beneficiaries of today’s transportation system are every person and company in the country. No one is immune. If this is true, then the users, which we are, are also the beneficiaries. Assessing the value of the transportation system can be correlated to the GNP of this country.

The transportation percentage of the GNP becomes the base for assessing the rate of taxation. The tax collection instrument is the federal income tax. All other federal transportation taxes and fees would be eliminated and the only federal funding source would be income tax funding a Transportation Trust Fund.

Is it possible? The answer is yes. Will it happen? The answer is unclear. The current political environment against new taxes, the institutional barriers and fear of the unknown all militate against it. However, we can begin to move in the direction of a transportation system that also finances intermodal investments and connectivity. We can set a target of 10 years from now to move to a better, simpler and fairer transportation financing process that is consistent with other public policies as well. In ten years the inability and inappropriateness of the motor fuel tax to generate sufficient funding without huge tax increases will be fully demonstrated. The conflict with and inconsistency of the motor fuel tax with our other national energy and environmental goals are apparent today.

Add to the Transportation Trust Fund the ability to enter into “Equity P3” arrangement to maximize the value of federal dollars. Add the “springing seniority” to the “Equity P3”

agreements and we protect the public's future interests. Together we can finance a national transportation system.

Allow the states and communities to keep the various state modal taxes for their transportation purposes; or let them use their state income tax. Remember we are financing a transportation system, not a mode. It is the transportation system that has provided the economic value to our country. It is the connectivity gaps in our intermodal system created by modal funding restrictions that further threatens our efficient and effective transportation system. Therefore, we must fund the transportation system.