



RECONNECTINGAMERICA

# Financing Intermodal Transportation

William D. Ankner, Ph.D  
September 2003



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*Reconnecting America's Transportation Networks is a project to redefine national policies for intercity travel in order to integrate our separately functioning aviation, passenger rail and highway systems into a more convenient, secure, financially viable and sustainable network. The project is a joint effort of the Center for Neighborhood Technology and Reconnecting America. The project is funded by the MacArthur Foundation, the Surdna Foundation, the Turner Foundation and the Packard Foundation.*

Copies of the report are available at <http://www.reconnectingamerica.org> or <http://www.cnt.org>. To learn more about the project go to <http://www.reconnectingamerica.org/html/RATN/index.htm>.

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# FOREWORD

By Hank Dittmar and Scott Bernstein  
Co-Directors, Reconnecting America's Transportation Networks

Government finances transportation because it reduces the friction of distance, and that makes the economy go. For most of the last century the great challenge was to find the funding to knit our country together, to extract resources and get them to market, and to respond to rapid technological advance by building new national systems. From the canal network to the railroads, and from the highways to the airways, our approach has tended to focus on building each system serially, and financing it individually.

William Ankner's analysis of intermodal finance traces the development of each of the individual mechanisms for financing the transportation modes, and it describes the limitations each mechanism faces at the present time. He also addresses the problem of the current day: moving from our present mechanism of modally based funding to one that can fund the linkages of the systems regardless of funding source.

While we may have vanquished distance, we are losing the battle of exchange. Each of the national systems breaks down as it intersects with the great metropolitan interchange points, and as it is necessary to make the transition from port to rail, or truck, from air to rail, or from truck to rail. Both the lack of adequate connections between the networks and the effect of congestion at these key interchanges threatens the continuing reliability of the transportation system.

William Ankner's paper focuses upon one of the key barriers to networking our transportation systems: the organization of transportation financing. Each mode has its own history and its own financing arrangements, along with its

own set of defenders against interlopers from other modes. Creating financing sources that do not inject biases into the planning process is clearly one of the key challenges, and this paper proposes a menu of financing alternatives.

Financing an intermodal project at this time is possible; it merely requires persistent genius and clever exceptionalism. With our key freight and passenger bottlenecks now located in our major metropolitan hubs, it is now time to both create a specific funding program dedicated to making intermodal connections, as well as to make it easier to finance these connections with traditional modal sources of funding. That's why Reconnecting America has called for the creation of a "Last-Mile Intermodal Connections Fund," "to make freight and passenger connections between ports and railroads and highways, between airports and passenger rail and intercity bus, and between railroad yards and trucking distribution centers. William Ankner's idea of a Value Added Tax on cargo is a bold one, which merits consideration for two reasons: it begins to address the impact on publicly financed transportation infrastructure from just-in-time logistics, and it offers a mechanism for dealing with both infrastructure investment needs and security costs.

Mr. Ankner also does the transportation community a service by reviewing present trends toward debt financing. Debt financing is clearly an important tool for funding long-lived capital projects, but as Ankner's review shows, it is not a substitute for revenue. The brutal fact is that all the transportation industries are heavily burdened by debt, and that if the present trend to leverage the vast majority of assets and incoming revenue with debt continues,

perturbations in the economy will wreak havoc on the nation's transportation services. At the same time, we threaten the very assets we are leveraging if debt service consumes the funding needed to maintain and rehabilitate capital assets. That is why the trend toward creative financing must be viewed as a tool in the kit, not as a substitute for the politically difficult job of raising revenues, particularly at the state and federal levels.

With three transportation reauthorizations up in this session of Congress, it will be tempting to go the creative financing route without raising additional funding. That would be a mistake. It would also be a mistake if we merely funded additional single mode enhancements without considering the economic synergy that can be derived from investing in connecting our transportation networks together. The reliability of the transportation system would be enhanced, and the network effect might lead to an overall enhancement in transportation productivity, which is no small gain in our global, just-in-time economy. Financing is at the heart of this challenge, and William Ankner's paper begins to suggest a way out of the dilemma in which our transportation industry has found itself.

Unnecessary congestion or impedance in inter-city transportation networks is a hidden tax on the economy. At Reconnecting America, we believe that the best way to improve the flow of traffic is to improve the quality of the connections at major hubs such as airports, freight yards, passenger stations, and even parking facilities.

For example, since there is no inherent speed advantage in traveling under 400 miles by airline as opposed to passenger train, building air-rail and air-bus connections within airports makes transportation and economic sense, as we see from investments in such connections all over Europe. It could happen faster here if we follow Dr. Ankner's recommendation to make current funding sources for aviation and highways more flexible.

The paper we are releasing today by William Ankner is an important step forward -- it lays out

the barriers, and at a time when too many professionals believe that we've run out of ways to finance major transportation investments, identifies dozens of opportunities that can be explored. Over the next year, the policy frameworks that authorize federal investments in and regulation of aviation, passenger rail and surface transportation will be reauthorized, and as a nation we have a once in a lifetime opportunity to cohere, align and leverage these resources to add value to our transportation networks, productivity to our economic engine, and benefits to the traveling and shipping publics. Done properly, this isn't a cost; it's an investment that should produce returns for many decades to come.

# EXECUTIVE SUMMARY

Funding for transportation in the United States is anchored in the concept of “User Fees.” The federal “user fee = user benefit” philosophy has 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 funding for intermodal and connectivity investments. Before undertaking an analysis and discussion of intermodal and transportation connectivity financing options, it is important to understand some of the policy, legislative and management context and barriers to such transportation financing. This paper discusses these topics, then arrays the various transportation financing options and practices in use today. Finally, a set of financing options is proposed for Reconnecting America’s transportation system.

Since “user fee = user benefit” philosophy underpins funding and the philosophy is modal, then the policies and structures to fund transportation and these types of projects are also modal. The results are fragmentation of the federal structure, funding, the state/local structure, and the private sector. This fragmentation exists at several levels, both public and private, and occurs both from within and between the public and the private sector.

Fragmentation of the transportation industry, at all levels, feeds upon itself and creates **modal competition** that intensifies problems for effective transportation system investments. So ingrained is this philosophy that government often finances a mode to enhance its competitiveness over the other modes, irrespective of whether this modal solution makes the most sense for the public. For example, federal funds underwrite the ability of the Boston-New York air shuttle market. This is in spite of the facts of over subscribed air space between the two markets and an under utilized

rail system, the Northeast Corridor, which can provide the same service.

This is a flawed public policy that wastes resources (financial, time, the environment and human energy) and often conflicts with other national policy priorities

## Revenues

Transportation in the United States is primarily funded through modal user fees. According to the FHWA, approximately \$133 billion dollars in revenue for highway spending came from federal and state gas taxes in 2001.<sup>1</sup> The federal gasoline tax is 18.4 cents per gallon. The primary federal highway user fees are: gas tax, vehicle taxes and fees, heavy vehicle use, tires, truck and trailers, diesel and other special motor fuels and gasohol.

On the aviation side, jet fuel and avgas taxes, passenger facility charges (PFC) and air freight way taxes generate the bulk of the revenue, but federal general fund revenues pay a substantial part of the air traffic control system and administration.

The primary ways of paying for transportation are: debt financing, public-private partnerships, and “pay-as-you-go.” Since the passage of ISTEA, there are numerous financing tools for surface transportation. They are contained in the ISTEA “innovative financing” section, which allows for federal fund participation in ways not permitted prior to ISTEA, such as using federal funds to support state issued debt. Additional tools and refinements were made in the successor legislation, TEA 21. For the most part the “innovative finance” tools are primarily debt instruments. Debt financing has grown

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<sup>1</sup> Office of Highway Policy Information, *Highway Statistics*, US Department of Transportation, Federal Highway Administration, 2002.



considerably. According to the Surface Transportation Policy Project from 1995 to 1999, state transportation borrowing using federal funds increased 92.3%, from \$4.3 billion in 1995 to \$8.3 billion in 1999.<sup>2</sup>

## A New Paradigm for Transportation Funding

The federal motor fuel tax is not keeping up with surface transportation needs. This tax financed the construction of the interstate system, but it cannot finance the systems' reconstruction or the modernization. Neither, can it finance an integrated and connected *transportation system*. Fuel efficiency and energy prices will continue to erode the financial capabilities of the motor fuel tax. In fact, the yield of the federal gasoline tax has declined. The current yield is around \$1.0 billion per penny, compared to \$1.13 billion per penny in both 1998 and 2000. The federal motor fuel tax needs to be supplemented and/or we need a totally new concept. This paper explores five new funding approaches:

- A Value Added Tax on Cargo
- A National Vehicle Miles Traveled Fee
- National Vehicle Registration Tax
- Tax Credit Bonds
- Shift Away from Modal Funding to the Income Tax

In addition, there are a number of incremental funding adjustments that could be made to create a "Last Mile Fund" for Intermodal Connections. They include:

- Gas Tax Increases
- Expanded Use of Tolls
- Dedication of Railroad Fuel Taxes to Intermodal Transportation

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<sup>2</sup> Surface Transportation Policy Project, "Measuring Up: The Trend Toward Voter Approved Transportation Funding", 2002.

- Expanded Use of Passenger Facility Charges for Airport Intermodal Connections
- Redirection of Air Freight Waybill

The report also reviews a number of other financing alternatives.

## Recommendations

To begin with, we keep the same premise of "user fee = user benefits." Today, 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 all benefit, then all should pay.

The conflict with and inconsistency of the motor fuel tax with our other national energy and environmental goals are apparent today. Over the next ten years the inability to finance intermodal regional solutions will be recognized as a hidden cost to the movement of people and goods in this country.

**Flexible Financing:** Improvements in the way intermodal and transportation connectivity projects are financed are needed now. Starting with the assumption that for the next two years there will be no new taxes/fees for transportation, the eligibility of existing funding sources in TEA 21 and AIR 21 must be redefined to allow them to encompass intermodal projects. The reauthorization of aviation and surface transportation provide an opportunity to accomplish this. Aviation law can be modified to reallocate AIP funds that are lost when an airport imposes a PFC. These lost funds can be kept within an airport's region and redistributed for intermodal projects related to the regional airports.

**Other Policy Changes:** Parity is needed between transit and highway projects, with respect to Full Funding Grant Agreements, Major Investment Studies and local match, so that the best transportation choices are made. Additionally, we can adopt the matching

flexibility elements of the Section 18 program for all the transportation elements. The entry level for TIFIA should be reduced to \$50 million; and HIPPP or private activity bonds should be written to incorporate intermodal projects. Both efforts and actions will increase public-private partnership opportunities, which will be needed to undertake large regional transportation and/or intermodal connectivity projects.

Other near term changes include allowing states to engage in public-private partnerships as an equity partner capable of making profits from investments which would finance other transportation projects; or to see the broader potential of electronic toll collection for collecting parking fees, drive through window charges, and other transactions. The goal is to encourage and allow the public sector to capture the value of the public's transportation investments, which can be reinvested back into the system.

**Value Added Tax on Cargo for Intermodal Infrastructure/Security:** The use of value added taxes (VAT) on freight and/or a national tax on motor vehicles or vehicle miles of travel (VMT) assessment could provide sufficient funding to meet intermodal and connectivity needs. A VAT on all cargo in the country is preferred in that it would cut across all modes as contributors and would generate about \$10 billion per annum.

A word of caution about debt is necessary. The issuance of debt needs to be more strategic and limited. While debt is an important tool, it does not substitute for adequate funding. "Pay-as-you-go" is not a wrong-headed approach. The future demands that we be prudent and live within our means.

If we move in these directions, we will begin to see that intermodal and connectivity investments are not a bane to our mobility. Indeed they are critical to it.

# INTRODUCTION

Funding for transportation in the United States is anchored in the concept of “User Fees.” Most of the first roads and bridges in this country were private toll facilities. Oregon enacted the first gas tax in 1919 and today all states have a gas tax ranging from Georgia’s low of 7.5 cents per gallon to Rhode Island’s high of 31 cents per gallon. User fees, or user-based taxes, are the basis for the major federal transportation programs. Motor vehicle and aviation fuel taxes are two examples of federal user-based taxes.

User-based taxes by definition create a “user benefit” expectation that correlates the dollars raised from the user with transportation investments. Since the source for user fees is primarily modal, transportation investment is often modal. So ingrained is this linkage that many states, e.g. Ohio, constitutionally prohibit the use of gas tax revenues for any transportation purpose other than highways. In total, 36 states restrict motor fuel tax revenues to highway purposes only. This concept was essentially practiced in the federal highway program until the enactment of the *Intermodal Surface Transportation Efficiency Act* of 1991 (ISTEA), which created some flexibility in transferring funding from highways to other transportation programs. But the historic “user fee = user benefit” concept is still true for aviation.

The federal “user fee = user benefit” philosophy has 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 funding for intermodal and connectivity investments. Policies often restrict transportation investment decisions to local and state interests and not to regional and intercity interests, thereby, severely limiting decision and investment capabilities to address multi-state transportation issues.

The philosophy has also spawned a long history of cost allocation studies to base revenues on cost. Those studies documented at least two things. First, the true internal subsidies of the system; and, second the political forces that kept the costs from being converted to revenues. Given these systemic, policy and structural problems of the current approach to financing transportation, this paper takes a very different approach and looks to “benefits” as a base for financing transportation.

Before undertaking an analysis and discussion of intermodal and transportation connectivity financing options, it is important to understand some of the policy, legislative and management context and barriers to such transportation financing. This paper will first discuss these topics, then array the various transportation financing options and practices in use today. Finally, a set of financing options will be proposed for Reconnecting America’s transportation system.

# I. TRANSPORTATION POLICY: FRAGMENTATION

Transportation policy and funding are not clean, clear or consistent. The policies and structures, as well as its sacred cows, have emerged over time through the political process in response to perceived needs, interest groups, etc. As noted above “user fee” is the dominant transportation funding mantra. Since “user fee = user benefit” philosophy underpins funding and the philosophy is modal, then the policies and structures to fund transportation and these types of projects are also modal. The results are fragmentation of the federal structure, funding, the state/local structure, and the private sector. This fragmentation exists at several levels, both public and private, and occurs both from within and between the public and the private sector. What is also left out at the federal level is a regional and intercity decision making capability to address multi-state transportation issues.

## A. Public Sector Fragmentation

### 1. The federal level:

The United States Department of Transportation (US DOT) is composed of five modal administrations (highways, transit, aviation, rail and freight). The US DOT’s mission calls for one DOT. However, each Administrator is primarily responsible for their mode, constituents and political structure. (Note: Significantly, the USDOT position of Deputy Assistant Secretary for Intermodal Transportation remains unfilled and unfunded.)

Congress itself is also fragmented. For example, there are three different and powerful United States Senate committees responsible for transportation. They are: Environment and Public Works- for highways, Banking- for transit, and Commerce- for aviation, Amtrak, trucking, rail freight and ports. Each Committee

is protective of its mode and fosters modal competition.

There are two primary federal transportation trust funds, one for highways and some transit, the other for aviation. “User fees” created the funds and link specific taxes/fees to specific projects or programs. This is why advocates of the Highway Trust Fund strongly resisted the use of Trust Fund dollars for transit arguing that public transit reduces trust fund revenues by removing people from cars to trains and buses. (The *Surface Transportation Act of 1982* authorized one cent of the five-cent increase for transit.) Not until ISTEA could FHWA funding be flexed to transit, thereby increasing transit’s use of Highway Trust Fund dollars. Highway Trust Fund dollars for transit are still limited, unless flexed by a state. Even so, Highway Trust Fund dollars, while no longer just for roads, cannot be used to finance intercity rail passenger service; and, therefore, the General Fund revenues must still augment transit funding. Except for the use of Congestion Mitigation and Air Quality (CMAQ) and/or State Infrastructure Bank (SIB) funds, Trust Fund dollars cannot finance facilities for private intermodal connections or rail freight. Pennsylvania’s funding to increase the bridge clearances for double stack trains to help the Port of Philadelphia is an example of the use of CMAQ and private sector funds where regular Highway Trust Fund dollars were not permissible. The Airport and Airway Trust Fund expenditures are also restricted. They can only be used on airport property and direct aviation benefits only.

### 2. The state and local government level:

Policy and investment decisions for transportation systems at the state and local levels are often fragmented in two different ways: either into state/local jurisdictions and/or



quasi-public agencies, which are often accountable only to themselves. For example, New Jersey transportation funding decisions are controlled by several entities: the state, three MPOs, two in-state transportation toll authorities, four bi-state transportation toll authorities, a statewide transit corporation, local governments (county, city and town) and the private sector (bus, ferries, trucking, ships, terminal operators, two class one railroads, airlines, Amtrak, a handful of short line operators, and a private bridge toll operator.) This situation is not unique to New Jersey.

This causes state transportation laws and regulations that are siloed, inhibiting regional mobility, and making long-term intermodal and regional decisions difficult and sometimes impossible. For example, until recently an oversized truck going from the Pennsylvania/New Jersey border to Long Island New York had 20 minutes to make the trip, because each controlling entity (NJ, NY, NYC and the PANYNJ) had different regulations for oversized travel, and only overlapped for 20 minutes. It was impossible to make the trip in 20 minutes. The result was that shippers either went around the problem through Connecticut or took a day to get across.

## **B. Private Sector Fragmentation**

The private transportation sector is not immune to fragmentation. Rail freight and trucking communities periodically wage policy wars with each other. The aviation community's decisions are based on competitive advantages resulting from infrastructure investments. The aviation community opposes the use of "their" funds for any investment that does not directly and fully benefit them; just as the trucking industry opposes any gas tax dollars being used for rail freight.

The make up of the intermodal freight business is different from the passenger transport business. "Intermodal freight infrastructure projects are characterized by a mix of participating parties- both public and private.

...The prevailing ownership structure in the freight industry is for the mode (trucking companies, shipping lines, railroads, airlines, pipeline companies and integrated organizations that operate a range of modes of transportation) to be privately owned but the connection points (ports and terminals) and supporting infrastructure (roads, bridges, and utilities) to be publicly owned. The exception is the rail industry."<sup>3</sup>

Conflict between the private and public sectors also exists, particularly in the goods movement and intercity passenger travel businesses. The public sector's historic role in these areas is as a regulator of the private sector industry. Only in a crisis, such as the Penn Central bankruptcy, does the public sector intervene with the creation of quasi-public entities like Conrail and Amtrak, or the recent \$5 billion Air Stabilization Act for airlines after the events of 9/11. Underpinning this separation of public and private responsibilities is a philosophy that the public sector should not make a profit from its investments, along with the belief that the private free enterprise system will produce the best transportation investments, as well as the most profitable.

This philosophy has increased the separation and quality of modes and curtailed connectivity investments. Specifically, the public side expects the private side to make its own connectivity investments without public assistance, because the private sector is earning a profit and the public sector should not invest in individual projects that increase profits. Therefore, when the public does invest, they expect the private sector to make performance substantially better or to provide more public benefits and meet more regulations. Because of the strings attached, until recently, most of the class one railroads were very reluctant to use public funds. Accepting federal funds would necessitate the railroads meeting additional federal rules and regulations, particularly about

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<sup>3</sup> Joseph Giglio, "Financing Intermodal Freight Investments: The Challenge and Emerging Opportunities", ENO Transportation Foundation, May 2002, p. 3.

the environment, labor, ADA, etc. Today some of the class one railroads are more receptive to the idea of federal funds. The railroads are facing a crisis. Their profits are too slim and the cost of capital is too high, making it almost impossible to make the necessary improvements to survive or enhance their service and be more competitive without government funds. The capital investments needed for trucking are made by government and paid for by the trucking industry through user fees over time and without many of the regulations cited above. Currently, the railroads make and finance their capital investments.

Another critical point of difference is a lack of a federal or state focus on regional/intercity transportation issues and a total focus on the state/local issues. Federal surface transportation investments are planned, designed, funded and constructed by state/local entities. Freight needs a larger canvas on which to paint. Other reasons cited for the lack of public investment and “barriers” in freight identified by the Transportation Research Board are:

- “General lack of enough funding to go around;
- Single-source funding does not work for scope and scale of intermodal investments;
- Inherent mode bias in current funding programs – this bias is mirrored in the political arena with the power of highway interest groups paramount;
- Regional organizations do not exist to advocate for projects of regional scale and benefit;
- Lack of good information and analytical tools to accurately assess benefits of intermodal investments; and
- A disconnect in the planning horizons of private and public players regarding investment decisions.”<sup>4</sup>

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<sup>4</sup> *ibid.*, p. 8.

## C. Modal Competition

Fragmentation of the transportation industry, at all levels, feeds upon itself and creates **modal competition** that intensifies problems for effective transportation system investments. Modal advocates, by definition, champion their individual modes. They seek to advance the funding and implementation of their mode almost exclusively. So ingrained is this philosophy that government often finances a mode to enhance its competitiveness over the other modes, irrespective of whether this modal solution makes the most sense for the public. For example, federal funds underwrite the ability of the Boston-New York air shuttle market. This is in spite of the facts of over subscribed air space between the two markets and an under utilized rail system, the Northeast Corridor, which can provide the same service. While a competitive market model works well in some areas, transportation as a public utility demands a more integrated multimodal approach in planning, funding and regulation. The common practice, unfortunately, is for advocates to champion their individual modes, and too often we embrace modal decisions simply for show and to wave our modal flags.

Ironically, this stove piped and competitive approach is not how we as consumers approach transportation. The average transportation consumer uses a multi-modal approach. Most urban/suburban travelers and freight customers view transportation as a single trip from point A to point B that happens to use several modes. Unfortunately, they are often frustrated by inconvenience from the lack of interconnections that are necessary to make their trip seamless and continuous, but they make do. The air travel customer includes the segment of going to and from the airport as a single trip.<sup>5</sup> All desire a seamless and continuous trip. The personal and

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<sup>5</sup> This is true despite the fact that the airport operators don’t consider the journey to their facility as part of the aviation travel experience, and why they are so protective of aviation only funding.

business financing of transportation for most travelers comes out of the same funding source, their paycheck or company profits. Only government fails to approach transportation as a multi-modal experience and it fractures transportation into modes. This fosters competition between and amongst the modes, and often fails to provide the user with the interconnectivity for a continuous trip.

This is a flawed public policy that wastes resources (financial, time, the environment and human energy) and often conflicts with other national policy priorities. For example, as a nation we want energy conservation and efficiency, yet surface transportation is financed

primarily on the consumption of energy and rewards states with increased funding when they consume more and more of the non renewable energy source, gasoline. Thus the leadership of every DOT in the country wants its highway users to drive the largest SUV or HUMV at least 1000 miles a week to increase transportation revenues. This is insane! However, it is the logical conclusion to how we finance transportation in the current environment. Instead, modes should be evaluated and funded in terms of overall transportation system performance and should be engaged because they are the best contributors to mobility and other environmental and energy policies.

## II. TRANSPORTATION REVENUES AND FINANCING TOOLS

### A. Revenues

How has transportation been financed in the United States? As noted above, we are funding it primarily through modal user fees. According to the FHWA, approximately \$133 billion dollars in revenue for highway spending came from federal and state gas taxes in 2001.<sup>6</sup> The federal gasoline tax is 18.4 cents per gallon. The primary federal highway user fees are: gas tax, vehicle taxes and fees, heavy vehicle use, tires, truck and trailers, diesel and other special motor fuels and gasohol (Chart 1).

On the aviation side, jet fuel and avgas taxes, passenger facility charges (PFC) and air freight way taxes generate the bulk of the revenue, but federal general fund revenues pay a substantial part of the air traffic control system and administration (Chart 2). However, the use of federal taxes and fees has risen dramatically. In 1972 a \$200 single domestic roundtrip with the maximum PFC cost you \$15 or 7% in taxes and fees.<sup>7</sup> In 2002, the taxes and fees costs you \$51 dollars or 26%. More than 25% of the airline travel cost is going to taxes and fees- and priceline.com can not help you with the charges;

and, it is worse if the trip is international.<sup>8</sup> In sum, nearly 98% of airport revenues come from the users.

Other dominant aviation funding sources of non federal public revenues are tolls, the issuance of public debt, "bond proceeds," (which the industry calls a revenue, but it is difficult to see how something you need to pay back with interest is a revenue) state/local sales and general income taxes, local property taxes, fares, rentals, airport gate and building leases, concessions, grants and air freight waybills. A more comprehensive list is found in Table 1 on the following page.

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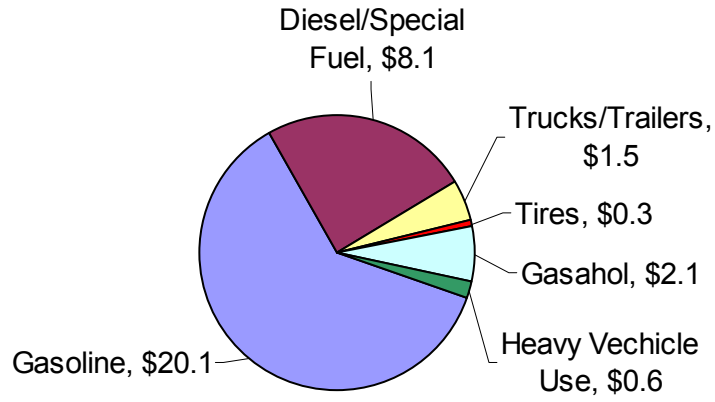
Tax/Fee	1972	1992*	2003*	R/T***
Passenger Ticket Tax*	8.0%	10.0%	7.50%	nmf
Passenger Flight Segment Tax*	-	-	\$3.00	\$12.00
Passenger Security Surcharge	-	-	\$2.50	\$10.00**
Passenger Facility Charge	-	\$3.00**	\$4.50**	\$18.00**
International Departure Tax	\$3.00	\$6.00	\$13.40	nmf
International Arrival Tax	-	-	\$13.40	nmf
INS User Fee	-	\$5	\$7.00	nmf
Customs User Fee	-	\$5	\$5.00	nmf
APHIS Passenger Fee	-	\$2	\$3.10	nmf
Cargo Waybill Tax*	5.0%	6.25%	6.25%	nmf
Frequent Flyer Tax	-	-	7.50%	nmf
APHIS Aircraft Fee	-	\$76.75	\$65.25	nmf
Jet Fuel tAx*	-	-	4.3¢/gal	nmf
LUST Fuel Tax*	-	0.1¢/gal	0.1¢/gal	nmf
Air Carrier Security Fee	-	-	TBD	nmf

<sup>6</sup> Office of Highway Policy Information FHWA, *Highway Statistics*, 2002.

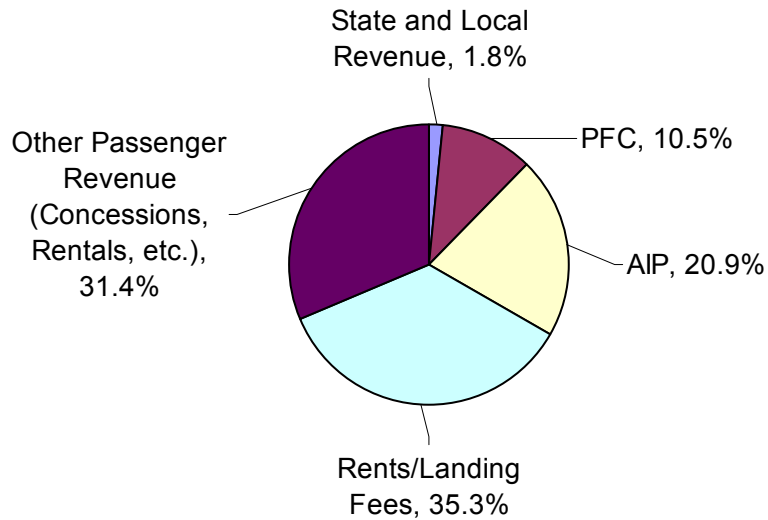
<sup>7</sup> There were no PFC fees in 1972.



**Chart 1: Federal Highway Trust Fund Receipts For FY 2001  
(Values in Billions)**



**Chart 2: Aviation Revenue for FY2002**



**Table 1: Revenue Sources by Mode**

<b>Surface Transportation</b> (Taxes and fees)	<b>Aviation</b> (Taxes and fees)	<b>Rail</b> (Taxes and fees)	<b>Other Revenue Sources</b>
<ul style="list-style-type: none"> <li>▪ Motor fuel taxes (federal and state)</li> <li>▪ Motor vehicle registration fees</li> <li>▪ License fees</li> <li>▪ Property taxes</li> <li>▪ Vehicle sales taxes</li> <li>▪ Weight distance</li> <li>▪ Federal heavy vehicle user fee</li> <li>▪ State transaction fees</li> <li>▪ Truck tires and tubes taxes</li> <li>▪ Tire and tire disposal fees</li> <li>▪ Vehicle import fees</li> <li>▪ Pavement damage fees</li> <li>▪ Traffic impact fees</li> <li>▪ Emission fees</li> <li>▪ Parking fees</li> <li>▪ Value added taxes on autos and trucks;</li> <li>▪ <i>Ad valorem</i> fees</li> <li>▪ Dedicated “local option transportation taxes”<sup>9</sup></li> <li>▪ Sales taxes</li> <li>▪ Property taxes</li> <li>▪ Value capture taxes on the transportation investments</li> <li>▪ Emission fees</li> <li>▪ Benefit based fees</li> </ul>	<ul style="list-style-type: none"> <li>▪ Passenger facility charges (PFC)</li> <li>▪ Cargo Waybill tax</li> <li>▪ Jet fuel and avgas taxes</li> <li>▪ Passenger Ticket tax</li> <li>▪ Passenger Flight Segmentation tax</li> <li>▪ Passenger Security surcharge</li> <li>▪ International Departure tax</li> <li>▪ International Arrival tax</li> <li>▪ INS user fee</li> <li>▪ Custom user fee</li> <li>▪ APHIS Passenger fee</li> <li>▪ Frequent Flyer tax</li> <li>▪ APHIS Aircraft fee</li> <li>▪ LUST Fuel tax</li> <li>▪ Airport Carrier Security fee</li> </ul>	<ul style="list-style-type: none"> <li>▪ RR Diesel Fuel taxes (put into the general fund)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Hot lanes</li> <li>▪ Fare boxes</li> <li>▪ General Fund appropriations at both the state and local levels</li> <li>▪ Tolls</li> <li>▪ Airport parking</li> <li>▪ Airport rent/lease of gates and retailers</li> <li>▪ Charter bus earnings</li> <li>▪ Congestion/Value Pricing</li> <li>▪ Rural public transportation (fees/contributions from federal funds for social services, e.g. Medicare.)</li> <li>▪ Advertisement</li> <li>▪ Concessions</li> <li>▪ Sale/lease back transactions</li> <li>▪ Rentals and/or leases</li> <li>▪ Regional sales taxes</li> <li>▪ Food and beverages</li> <li>▪ Value captures agreements</li> <li>▪ Stock issues</li> <li>▪ Bond Proceeds</li> </ul>

<sup>9</sup> 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.

## B. Financing Methods

The primary ways of paying for transportation are: debt financing, public-private partnerships, and “pay-as-you-go.” Since the passage of ISTEA, there are numerous financing tools for surface transportation. They are contained in the ISTEA “innovative financing” section, which allows for federal fund participation in ways not permitted prior to ISTEA, such as using federal funds to support state issued debt. Additional tools and refinements were made in the successor legislation, TEA 21. For the most part the “innovative finance” tools are primarily debt instruments. The discussion starts with debt financing.

### 1. Modal Debt

Debt financing has grown considerably. According to the Surface Transportation Policy Project from 1995 to 1999, state transportation borrowing using federal funds increased 92.3%, from \$4.3 billion in 1995 to \$8.3 billion in 1999.<sup>10</sup> The amount of state issued transportation debt with state securities is \$66.3 billion<sup>11</sup>.

Debt financing is a useful tool. However, the substantial increase in use of debt is reaching a point of concern – much of the public debt is occurring without new revenue sources to support it. This is due to the increasing budget loads and decreased revenues that every entity is issuing and laboring under including states, local/city governments, transit providers; airlines, railroads and others. As a result, current revenues are encumbered by debt payments, effectively reducing the funding for maintenance and operations. All of this severely threatens the financial stability of transportation at this time and no mode is exempt.

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<sup>10</sup> Surface Transportation Policy Project, “Measuring Up: The Trend Toward Voter Approved Transportation Funding”, 2002.

<sup>11</sup> Office of Highway Policy Information, FHWA, *Highway Statistics* 2001, Table SB-2, “State Obligations for Highways-2001: Change in Indebtedness During Year”.

### Amtrak

Amtrak has leveraged all available assets, except the ACELA Express equipment for which they haven’t yet taken ownership. They are expending some 26% of their operating budgets on debt.

### Aviation

The major carriers are in debt to the point that most are unable to replace their airplanes and equipment. Debt levels have increased by 75% over 4 years to approximately \$40 billion increase in net debt, see Chart 3.

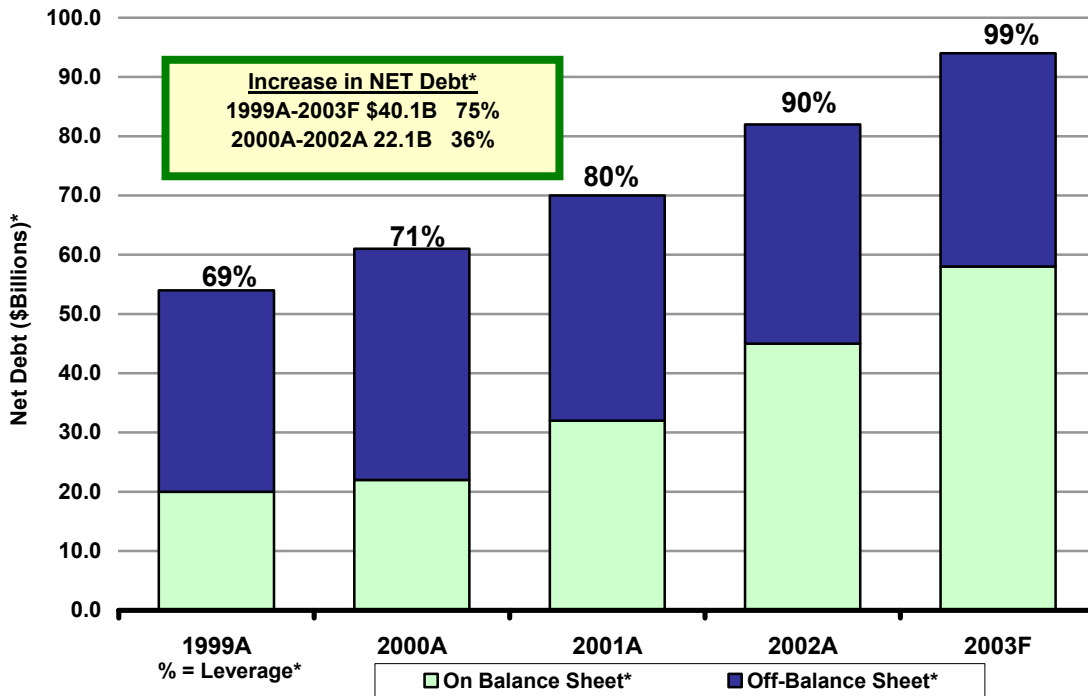
This debt level and the failing revenue stream are also affecting the airports. “Credit ratings for the three classes of airport bonds, general airport revenue bonds (GARBs), special facility bonds and passenger facility charge (PFC) bonds depend on many factors...However, now the potential for the financial condition of the airlines to affect the credit quality of airport bonds has become a rating factor of heightened importance.”<sup>12</sup> The cash during the good years was used for acquisitions and some modernization.

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<sup>12</sup> Fitch Ratings, “Airline Bankruptcies and Airport Bonds: 2003-2006”, Revenue Special Report, July 21, 2003.

**Chart 3**

Airline Increase in Net Debt



\*Net Debt = LTD + STD + Capitalized Operating Leases - Cash and Short-Term Equivalents as of December 31; Leverage = Net Debt / Total Capital

Source: ATA Research of AirTran, Alaska, American, America West, ATA, Continental, Delta, JetBlue, Northwest, Reno, Southwest, TWA, United, US Airways. "Airlines Have Taken on Massive Debt to Survive", American Transport Association, July 2003.

**Freight Carriers**

The US Department of Transportation, in its October 2002 *Freight Analysis Framework*, estimates that freight rail traffic will grow by 50 percent by 2020. According to Roger Nober, Chairman of the Surface Transportation Board (STB- the entity responsible for the economic viability of rail) in testimony<sup>13</sup> before the House Rail Subcommittee "growth [of freight rail traffic] will put significant additional pressure on existing rail capacity and infrastructure." To meet this challenge the railroads, particularly the class ones, must continue to make capital investments to expand and improve, as well as

maintain their infrastructure. They are spending, according to Nober, "...between 1997 and 2001, ...on average more than 18 percent of revenue on capital investments, while the manufacturing sector as a whole spent a bit more than 3 percent."<sup>14</sup>

However, a great deal of the spending was done by debt. The railroad industry average of debt to capital ratio is in the mid 40% level. This is an improvement, but driven by increased revenues and not reduced debt. FY 2003 is expected to see a decline in adjusted debt from the increases

<sup>13</sup> United State House of Representatives, House Rail Subcommittee, June 26, 2003.

<sup>14</sup> *ibid.*



over the past two years.<sup>15</sup> However, if the economy continues to struggle these slight improvements could disappear. Their proposed reduction in future debt also implies very little capacity to make further investments - absent from debt and property the railroads have very little other sources of capital funding.

Since 1995, when the Surface Transportation Board (STB) started compiling the railroads' ability to cover the cost of their capital, only one class one carrier- Norfolk Southern (NS) did so but only for two years. For the past 6 years, no class one carrier has covered the cost of capital. In fact, STB Chairman Nober stated his belief "...that freight railroads are unable to make the level of capital investment in their networks that those systems presently need. This is primarily a result of the fact that, as I discussed earlier, the return on railroads' past capital investments has fallen short of the industry's cost of capital. And as publicly traded companies, freight railroads must be responsive to the needs of their investors, and these investors are seriously concerned about the inadequate returns on investment earned by the Class I railroads."<sup>16</sup> Another reason their debt and leverage ratio is high has been the use of cash to undertake a wave of acquisitions during this period.

### Highways

Many state DOTs find themselves heavily leveraged. States like New Jersey, today, have 61% of their Transportation Trust Fund going towards debt service and 100% by 2006. New Mexico is so leveraged from leveraging federal funds that they are unable to fund any new capital activities for the next ten years unless new revenues are forthcoming. Indeed, New Mexico's Secretary for Transportation testified before Congress in 2001 that, if there were any increased federal funds, the funds needed to be 100% federal, because the state doesn't have the dollars to match the new money. Other states, like Rhode Island, see 46% of their gas tax revenues going to debt service.

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<sup>15</sup> Moody's Industry Outlook, "North American Railroads", December 2002.

<sup>16</sup> House Rail Subcommittee, June 26, 2003.

### Transit

The more than 600 transit properties nation-wide are in better shape from a debt perspective than their highway counterparts. However, here too there has been an increasing use of debt amongst the major properties. New Jersey Transit's largest single focused capital expenditure has been debt/lease payments; comprising 23% of its annual capital budget. The increasing use of debt is straining operations, which rely on fare boxes that only cover about 40% of NJ Transit's operating costs. (NJ Transit is unusual with a robust 52% fare box recovery; other transit agencies with high debt would be in worse shape.) Matching funds for new starts will be difficult for transit properties with high debt in the future too.

## 2. States and Local Debt

States are experiencing the worst financial crisis since the Great Depression. The past six financially good years prior to 2002 saw a pattern of state tax cuts and debt issuances. Weak economic times now see even more reliance on debt at the same time revenues to pay debt are declining. "Moody's Investor Service has placed California's bond rating under review for possible downgrade... California already is tied with New York as the state with the lowest rating from Moody's."<sup>17</sup> According to the National Governors Association: "State issuance of debt has shot up in recent years, particularly in the past two years", according to data supplied by Thomson Financial. States issued \$90.78 billion in long-term debt in fiscal 2001, but that figure jumped to \$130.66 billion in fiscal 2002.<sup>18</sup> "To date in fiscal 2003, which for 46 states end Monday {June 30, 2003}, states have issued \$176.08 billion in long-term debt. States issued \$14.85 billion in short-term debt in fiscal 2001, but that figure more than doubled in fiscal 2002, rising to \$32.24 billion. To date in fiscal 2003, states have issued \$44.77 billion in short-term debt... According to the report, fiscal 2003 have been a grueling budget year for most of the

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<sup>17</sup> Bond Buyer, "State's A2 Rating on Review for Downgrade", July 3, 2003.

<sup>18</sup> National Governors Association.

nation's governors. In that period, 37 states had to reduce previously enacted budgets by almost \$14.5 billion - the largest spending cut in the 27-year history of the fiscal survey."<sup>19</sup>

<b>Table 2: State Issuance of Debt</b>			
(in billions)			
<b>Type of debt</b>	<b>2001</b>	<b>2002</b>	<b>2003 (YTD)</b>
Long term	\$90.78	\$130.66	\$176.08
Short term	\$14.85	\$32.24	\$44.77

In 2001, states and local governments invested, just in their highways, over \$104 billion as opposed to \$28 billion from FHWA. Bond proceeds were the third highest revenue source for states and were a healthy amount, or \$3.2 billion, for local governments. In addition to their local roads and bridges local governments are often the governmental entity that supports mass transit and in most cases airports. In all cases debt is a critical financing element.

Over the past two years personal income tax for forty-four states has plummeted and is negative. The average decline from FY 2001 to FY 2002 was 12% and ranged from 25.6% in California, to 0.6% in Delaware. During this period, nine other states declined over 10%.<sup>20</sup>

Given the weak economy, the financial picture for the state income tax is unlikely to improve soon. Since the increased revenues in the past were based largely on capital gains, the plus 20% increase in revenues some states experienced in early 2000 are unlikely to return even when the economy stabilizes. This could mean even greater reliance on debt as states try to maintain needed programs. Transportation funds could be raided to provide for those programs and lost funds substituted with debt. For example, Rhode Island enacted a two-cent increase in the gas tax for non-transportation

<sup>19</sup> *ibid.*

<sup>20</sup> N. Jenny, "The Personal Income Tax Once a Strong Source of State Revenue Growth Is Now a Source of Budget Problems". The Nelson A. Rockefeller Institute of Government, Fiscal News: Vol. 3, No.3, April 2003.

purposes last year and authorized a GARVEE (see below for a definition) this year, in part, to make up for lost revenues.

### 3. Debt Financing Tools

There are a number of financing tools on the market today. Most of the tools are debt instruments. Several are alternative-financing structures that will leverage future funding and allow for rapid implementation of a project. Among these tools and structures are the following:

#### **GARVEEs**

ISTEA allowed states and local governments, on a limited basis, the ability to borrow against their annual federal formula allocations. The concept was that federal funds were guaranteed at a certain level and therefore should be treated as income to the state/local entities. This concept grew in TEA 21 and GARVEEs could be used for any transportation purposes permitted in the authorizing act. Thus, they can be used for interconnectivity to airports, ports and rail stations. They cannot be used to build a rail freight line or new infrastructure for Amtrak, or any purely private transportation purpose.

#### **Loans from the Transportation Infrastructure Financing Innovations Act (TIFIA):**

Provide for borrowing funds from the federal government rather than from the capital market. The interest rates are at the Federal funds' rate rather than the tax-exempt municipal market rate, and lower than the taxable rate. The saving between taxable and treasury rates is often between 125 and 200 bases points. These structures are also promising because both principal and interest payments can be deferred for at least five years and possibly as long as 10 years.

#### **Lines of credit:**

Provide for relatively low cost interest rates during construction and before the project generates fare revenues and value captures revenue.

**Tax-exempt commercial paper:**

Provide for very low interest rates, taking advantage of market conditions, and deferring principal payments until after construction is complete.

**Conventional long-term bonds:**

Allow for relatively uniform debt service payments, which may be appropriate once the project is constructed and the system-generated revenues are stable.

**Full Funding Grant Agreement bonds:**

If a project is eligible for federal transit new starts funding, a full funding agreement with the FTA is needed. This is the Federal Transit Administration's (FTA's) GARVEE and allows the leveraging of future FFGA appropriations, recognizing that Federal payments will most likely lag behind construction, requiring short-term financing.

To use these bonds, however, a project is placed under extraordinary financial feasibility tests unique in federal transportation funding and requires a significant local match-often 50% or more.

For the FTA a key aspect of project development and delivery is its financial feasibility from the viewpoint of all potential stakeholders in the project. The Federal perspective is particularly important, as a funding participation of 50%-80% is sought. The FTA uses several criteria to evaluate competing projects within its Section 5309 program, including a recently developed Cost Effectiveness Index (CEI)<sup>21</sup>.

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<sup>21</sup> This index is the ratio of the annualized capital costs plus annual operating maintenance cost in current year dollars divided by the Transportation System User Benefits defined as the total person hours of time saved in the forecast year (currently 2020 or 2025). In the most recent year, a "medium" rating on the CEI scale of approximately \$17-\$20/hour has been a threshold value. Developing this value (and the methodology for its estimation) is a critical factor in any new starts-financing plan.

Beyond the Federal share is the issue of local share and how this is sourced. These elements - the CEI and the local share - pose a significant barrier to many New Starts projects. No highway project is subject to this type of restriction. The successor legislation to the TEA21 should level the playing field for transit projects as compared to highway projects.

**Lease/Leaseback financing**

Allows for public entities to share in the tax advantages to off-shore investors by leasing publicly owned assets to the investors, and the investors leasing the assets back to the public entity while retaining the depreciation rights. Such structures can result in immediate benefits to the public entity, representing the net present value of a share of the tax benefits to the investors, ranging from 5 to 10 percent of the asset value. This type of financing can apply to transit, ports, rail freight, aviation, intercity bus and rail, as long as there is a public sector hook.

**4. Public-Private Partnerships (P3)**

The nature of the intermodal and connectivity business makes public-private partnership the most probable activity and investment strategy. The hope of P3 is that it will give the transportation industry the ability to increase the number and amount of transportation investments. Initially, this effort has not been promising. The public sector approach has been to use the private sector as a contractor, not as a partner. Contracting out work does not involve the private sector in the investment. Therefore, there have been a limited number of successes in P3.

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 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.

P3 can allow projects that have fewer funding opportunities to happen. For example, a rail station is needed in a certain location to meet transportation demands. For the private sector, the station and surrounding area could create income-producing opportunities. The private sector uses its wealth to assist the building of the station so that the adjacent properties can be developed with higher returns. The public sector uses some of the revenues captured by the value it produces (value capture) to repay debt for construction or for the operations of the station. In-land port, warehousing, development around people movers connecting the airports and rental car facilities, hot lanes, toll roads/bridges, transfer stations, etc. will most likely be achieved through public-private partnerships in the future.

Changes in the law that would make these types of activities more possible include:

- Reducing the threshold to apply for a TIFIA loan which now is \$100 million and changing USDOT imposed limit of the TIFIA loan being no greater than the other investment levels. These two positions restrict the availability and attractiveness of TIFIA. A \$50 million project cost would attract more requests and open the possibility for more public-private activities.
- Making private activity bonds for public purposes tax exempt. (This is the old

HIPPP<sup>22</sup> effort from TEA21.) This change would allow the private sector an ability to undertake public purpose projects that also have revenue generating possibilities and do them as tax exempt. This would lower the cost of a project and make it more attractive to the private sector; and it would do so without impacting the public sector caps on tax-exempt borrowing. The result is that more difficult and higher cost projects would fair better in the competition for state/local funding.

- Allowing the public sector to participate in such a way as to make a profit.

## 5. "Pay-As-You-Go"

Key to achieving pay as you go is using the revenues currently generated. Other ways of generating revenue for "pay-as-you-go," which can also be used as the collateral for debt include leveraging existing assets, SIBs and land use financing.

### Leveraging Existing Assets

- **Asset Swaps:** Public land is traded for construction of public facilities at little or no cost to the taxpayer, thus encouraging development or redevelopment of designated areas. This concept would have significance if an intermodal project were located where a public entity has real estate and a possibility for further profitable development; for example, around a port, to swap property for warehousing in exchange for private investments in

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<sup>22</sup> HIPPP stands for the "Highway Infrastructure Privatization Pilot Program". This was intended to establish a pilot program aimed at encouraging the private sector to help meet the nation's highway infrastructure needs. Under the pilot program, up to 15 privation projects would have access to tax-exempt bond financing. This provision died in the 11<sup>th</sup> hour of the bill's passage. Other private activity bond efforts were the "Multimodal Transportation Financing Act (S.870, Multitrans) in 2001 and the "Highway Innovation and Cost Savings Act" (HICSA) in 1999.



interconnectivity of the port to rail, highways or barges.

- **Income Generation:** Policy changes under FHWA's TE-045 initiative have increased states' options to conduct commercial activities along Interstate right of way (ROW). Proposed activities have included intermodal facilities. The use of this initiative coupled with public-private efforts or combinations of the above could provide sufficient funding to undertake projects. (Note: While TE-045 was superceded by the State Infrastructure Bank (SIB) pilot program, if a state does not have a SIB, then TE-045 could be used to expand financing flexibilities.)
- **Air Rights:** Leasing, selling, or sharing air rights above publicly owned land or facilities might be an opportunity for public-private investments.

### **State Infrastructure Banks (SIB)/ISTEA Section 1012 Loans**

The purpose of this financing tool is to provide the public sector greater flexibility to leverage federal funds. States can loan federal funds for revenue generating projects with public or private sponsorship, or to a project as subordinated debt with extended repayment periods. SIB was established in the National Highway System Designation Act of 1995 (the NHS legislation) as a pilot in which 36 states participated. The current Act, TEA21, restricts the use of SIBs to 6 states. This was a compromise because the issues about the extent of federal policies and rules after the funds have been repaid, such as Davis Bacon and 13c, were so divisive that Congress chose to restrict the use and revisit the issue in the next reauthorization. SIBs were intended as a funding source for public-private ventures; if restored they could be a useful tool in financing connectivity. The reauthorization needs to resolve the impediments in creating SIBs throughout the country.

### **Land Use Financing Options**

These financial tools and their variations are based on a "beneficiary pays" principle, rather

than the "user pays" concept associated with fuel taxes, tolls, and more traditional sources of revenue. Under this principle, beneficiaries, a business or a community that enjoys greater demand due to the transportation improvement, or communities that see a rise in their property values, will share their increased wealth to offset or provide for the transportation benefits. These tools have advantages in financing particular investments where the value of the transportation investment is clear. Some of the options are:

- **Impact Fees:** One time fees charged on new structures typically based on square footage.
- **Extractions:** In-kind compensation paid by a developer or community to help offset the costs of the investment.
- **Tax Increment Financing:** The captured increment in property tax revenues due to the projected increase in property values that can be attributed to the projects being financed.

## **C. So Where Are We?**

Despite all the fragmentation, competition, in fighting, lack of funds, bureaucracy and funding issues- for the optimist, the transportation system works. But, there are holes. Interconnectivity is a big one, but we address it as we always have by cobbling together new and current practices to meet the challenges. But, first, are there ways to improve the current approach? If not, is there a better model that works? Can we learn from the gaps in intermodal and interconnectivity policies, structures and funding to devise a better strategy for a transportation system? Let us attempt it.

# III. A NEW PARADIGM FOR TRANSPORTATION FUNDING

The federal motor fuel tax is not keeping up with surface transportation needs. This tax financed the construction of the interstate system, but it cannot finance the systems' reconstruction or the modernization. Neither, can it finance an integrated and connected *transportation system*. Fuel efficiency and energy prices will continue to erode the financial capabilities of the motor fuel tax. In fact, the yield of the federal gasoline tax is declining. The current yield is approximately \$1.0 billion per penny, compared to \$1.13 billion per penny in both 1998 and 2000<sup>23</sup>. The federal gasoline tax needs to be supplemented and/or we need a totally new concept. This paper explores four new funding approaches. Three building on the current "user fee = user benefit" concepts, and one more radical approach.

## A. Broader Benefits

To begin with, we keep the same premise of "user fee = user benefits." When Oregon first introduced the concept and practice of the motor fuel tax as a user fee, there were clearly defined and specific beneficiaries.

Today, however, 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. No person, organization or business is exempt from the benefits of our transportation system. If all benefit, then all should pay.

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<sup>23</sup> Office of Highway Policy Information, FHWA, *Highway Statistics*, Highway Finance Table FE-9, 1992-2001. Revised November 2003: The original release stated "the current yield was \$0.92 billion per penny as opposed to \$1.4 to \$1.6 billion per penny in the mid 1990s". This figure was based upon an inaccurate use of source material.

Several mechanisms could accomplish an "all benefit = all pay" system:

### 1. Value Added Tax on Freight or a Cargo Surcharge

Most manufactured goods and consumables products in this country that are dependent on transportation are moved by container, box, trailer, or package. Even high-end automobiles are contained, and these containers/trailers move on the highway, rail and/or air system, often using more than one mode. There are at least two ways to address this.

First assess a Value Added Tax (VAT) on the total value of goods in this country on an annual basis. The estimated annual value is \$11 trillion,<sup>24</sup> a VAT of .25% would yield about \$27 billion; and .25% of \$4 trillion would yield about \$10 billion. The \$10 billion figure is the more likely number, as the \$11 trillion no doubt includes double and triple counting as the freight moves from one mode to the next. While there are no solid estimates of "intermodal project need", available documentation indicates \$10 billion is an annual amount able to finance the intermodal and connectivity transportation needs currently under funded and at some state of readiness. For purposes of discussion, such funds would be deposited in what is hereafter referred to as the *Last Mile Fund*.

Pros: Since everyone shares in the value of goods transported, this is fair. The producers and carriers would improve their efficiencies as the barriers to intermodalism and connectivity are reduced by the new transportation

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<sup>24</sup> The *AASHTO Freight- Rail Bottom Line Report* places a value of domestic freight in 2000 as \$11 trillion, a figure greater than the GDP that year. A more realistic estimate is \$4 trillion.

investments. Indeed the efficiencies could produce savings greater than the VAT. None of the modes suffer from a loss of funding, since this is new revenue that applies to all freight carriers.

A VAT on domestic and imports should not impact trade treaties.

Cons: The collection of the VAT could be expensive and difficult. It adds to the cost of doing business in the United States, even though the tax is small.

A VAT on imports could impact trade treaties.

### Cargo Surcharge

A similar approach to a VAT is a surcharge on each metric ton just originated by surface, air or water container/trailer/boxcar/railcar or package of one dollar would generate approximately \$1 billion,<sup>25</sup> just for imported cargo, domestic cargo would add to that figure. The surcharge would be collected at the point of generation in the United States. The proceeds of the surcharge would also support the *Last Mile Fund*. The surcharge would apply to all cargo tonnage not just imports.

Pros: The surcharge would be fair to the carriers, since it would apply to containers/trailers/boxes/rail cars/packages originating from all places and modes, and does not penalize any particular mode. It is fair in that goods movement often requires more investments in connectivity that are often very capital intensive.

Cons: The collection of the surcharge could be difficult

<sup>25</sup> The sum of 1999 freight import statistics for Maritime, Air, and Surface is 993,030,317 metric tons. Sources: BTS Transtats databases, Air Carrier Statistics (Form 41 Traffic) T-100 Market database, Foreign Traffic Vessel Entrances and Clearances, and Transborder Surface Freight Data.

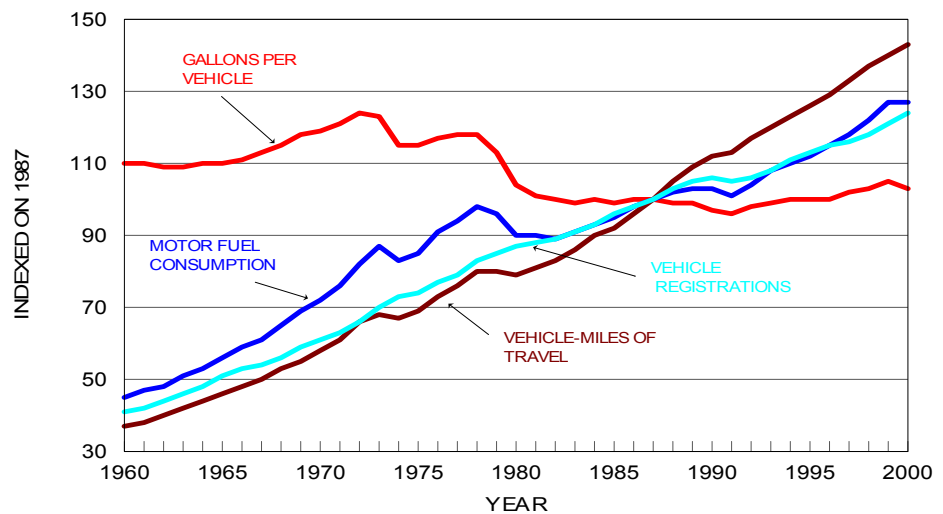
and expensive. It would unfairly target foreign goods and raise the price of these goods. A trade challenge is possible.

## 2. Vehicle Miles Traveled (VMT) Tax

The ultimate user tax is the actual use of the vehicle on the transportation system. Today motor fuel tax receipts are declining at the same time VMT continues to grow. Federal Highway Administrator, Mary Peters, testified that FHWA expects VMT to grow by 42% by 2020.<sup>26</sup> VMT growth has almost doubled and the number of autos registered has seen a dramatic increase against the growth in fuel consumption, see Chart 4.

Chart 4<sup>27</sup>

Wilbur Smith Associates undertook an analysis of road pricing and examined VMT as a pricing VEHICLE REGISTRATIONS, FUEL CONSUMPTION, AND VEHICLE-MILES OF TRAVEL AS INDICES



<sup>26</sup> Mary Peters, "Testimony to the House of Representatives Committee on Transportation and Infrastructure", May 21, 2002.

<sup>27</sup> Office of Highway Policy Information FHWA, *Highway Statistics*, 2002.

tool strategy in Minnesota. They analyzed three scenarios and concluded that it was impractical and too costly for a state to impose by themselves. A nationwide application could reduce the costs and implementation.<sup>28</sup> Today's technology, with global positioning systems (GPS) and transponders, puts us in a better position to capture use on the transportation system. Fees could also be tied to a congestion-pricing model that assesses more during peak period usage, since this is when maximum capacity is needed and it is expensive to provide.

Initially the tax collected could be sized to meet the intermodal and connectivity needs or capacity of the system to implement.

Pros: A VMT tax would supplement motor fuel taxes. It is fair in that those who use the system the most pay more for the system. The tax could also be adjusted to the weight of the vehicle, in addition to the VMT, since there is a correlation between weight and road condition. It could also be tied to fuel efficiency so that automobiles consuming or polluting the most pay the most.

Cons: The opponents of the tax would note the difficulty in collection, but more importantly would seek to restrict the usages of the tax to those projects that benefit from the usage. Therefore, connectivity investments for rail and aviation will be opposed. Additionally there could be strong arguments about the use of technology and privacy.

But, proponents could also argue that congestion is caused by traffic from airports and intercity travel as well as commercial trucks and train grade crossings. Thus highway funds should not be the only funding affected.

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<sup>28</sup> Wilbur Smith Associates, "Road Pricing Study: Final Report," prepared for Minnesota Department of Transportation and FHWA, 1997.

### 3. National Vehicle Registration Tax

The user concept also applies to the vehicle itself. As the above chart demonstrates vehicle ownership has kept pace with motor fuel consumption. Indeed there are now more cars in American households than drivers.<sup>29</sup> With the inclusion of SUVs, vans and light trucks into the CAFÉ standards fuel consumption will be lowered as the fleet turns over during the next 8 years. This trend will weaken the reliance on motor fuel consumption as the primary means for financing transportation. Vehicle registration will remain constant or increase. Even if the registration levels plateau, they are resilient enough to meet the funding challenges of the transportation demands.

Since auto and truck traffic is the primary means of travel in this country a national tax on the value of the vehicle could be assessed. A registration fee is assessed in every Motor Vehicle Department in the country today. In addition 33 states allow for "local option vehicle taxes" for transportation and other governmental purposes, such as air pollution controls and public safety. The preponderance of local taxes is for specific highway or transit projects that benefit the community or surrounding communities.<sup>30</sup> The data exists, the collection mechanism is in place as state DMVs already collect the tax, and the acceptance by the public is largely there.

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<sup>29</sup> BTS and FHWA National Household Transportation Survey of 26,000 households and 60,000 individuals in 2001 and 2002 shows that the average household has 1.8 drivers, but 1.90 personal vehicles. The survey also showed that more households have cars- in 1995 8.1 percent did not have cars, compared to 7.9 percent without cars in 2002. The primary means for commuting to work is personal vehicle (91.2%), but 72% of daily auto trips are for non-work relatively short trips to shop, run errands, recreate or socialize and these are relatively short trips.

<sup>30</sup> Goldman, Corbett and Wachs, *Local Option Transportation Taxes in the United States (Part One: Issues and Trends)*, 2001.

Pros: A surcharge would be equitable since it would apply to users of the roadway and bridge system. This tax could also be adjusted to meet other national policies such as energy and clean air by adjusting the tax to assess more for those vehicles using more fuel than the CAFÉ standards.

Cons: The states of Washington and Virginia, and to a lesser extent Rhode Island, have shown opposition to local and state value added fees. Critics that would seek to keep such a tax for highway purposes only, would argue that other modes are not paying their fair share.

#### **4. Tax Credit Bonds:**

The American Association of Transportation Officials (AASHTO) is proposing the concept of a Transportation Finance Corporation (TFC) to fund transportation through the issuance of tax-credit bonds. The concept has support in that it could leverage \$20 billion into an additional \$43 billion over ten years. The idea is similar to housing's FANNIE MAE or the taxable tax-credit bonds to renovate schools in poor neighborhoods. The U.S. Senate Finance Committee is pursuing the idea of issuance of \$50 billion in tax-credit bonds. This is similar to the Talent/Wyden bill introduced in May that would create a Surface Transportation Corporation (STC) and allow for the issuance of \$50 billion to finance transportation infrastructure. AASHTO proposes the indexing of the federal motor fuel tax to finance the debt.

One of the AASHTO proposals for the TFC provides for a separate goods movement/freight and Amtrak account to be established. Intermodal connectivity purposes would be funded from this account.

The AASHTO proposal called for the indexing of the gas tax to pay the principle and the tax credit to cover the interest costs. Other proposals have some of the bond proceeds reserved in an investment account that would generate sufficient funds over the lending period to pay back the bonds and the tax credit to cover

the interest. The proposals relying on this method are smaller in the amount of new available funding being generated.

Pros: It scores well for the CBO in that there is no immediate drain on the Treasury; indeed the CBO has scored it as neutral. This approach would provide the needed increase to make the TEA 21 reauthorization possible without raising taxes, if there is not indexing of the motor fuel tax- a position the Bush Administration has taken. In one version, in conjunction with the existing motor fuel taxes and fees, it could provide an additional \$14 billion a year for highways and an additional \$7 billion a year for transit. It would allow the states to leverage federal funds to get even more funds. The borrowing rates are at historic lows for now; and this could allow state/local DOTs and transit properties to undertake needed projects more cost effectively than using pay-as-you-go methods. It takes the burden off states/local government to raise revenues for transportation.

Cons: There is a loss of funds to the Treasury. The six-year costs could be equivalent to a range of \$12 to \$15 billion in revenues to Treasury. Since the debt is 20 years, the costs could range from \$40 to \$50 billion, making the financing package \$80 to \$90 billion. Furthermore, there may not be sufficient market interest to absorb \$40 billion in new paper, given the interest rates and public debt issues currently in the market. The \$40 billion, while small compared to other Treasury issuances, could also drain potential customers from other Treasury offerings- this would be most costly.

The proposal also views "bond proceeds" as revenues.

The Senate Finance Committee version would establish taxable-bond financing for transit. This would free up transit funding in the Highway Trust Fund for

highway purposes. This exacerbates the siloing and fracturing of the transportation system. Instead of looking for ways to finance a transportation system, each mode would have its own separate pot.

Additionally, tax-credit financing builds upon the current trend to use debt as a primary means of financing transportation, in this case transit. It binds the federal government to transportation funding for at least 20 years, the length of the debt. It will encourage more state/local debt financing. A very possible scenario is states leveraging the dollars, giving themselves a huge influx of cash to undertake all the projects that were put aside because there weren't sufficient funds to undertake, or sufficient public support to raise the funds or not undertake something else in the TIP. Now there would be the money for the moment. The consequences could be less funding for future Governors, legislators, and DOTs because the money is all committed in the beginning.

In AASHTO's original proposal there was to be an oversight entity (FTC) for the \$40 billion. The makeup of the FTC is uncertain. AASHTO proposed the states. If this becomes the case, then transit, the MPOs, and local government may lose influence on the use of funds. Regional decision-making could also be affected, as states look for local and state only solutions. For example, to solve the congestion problems at O'Hare airport in Chicago Illinois, the Governor of Illinois refused to consider the Milwaukee and Gary airports as alternatives. Although each airport has underutilized capacity and is close to O'Hare, the Governor proposed expanding Rockford Illinois airport and building a third regional airport in the Chicago area, because he was looking for an in-state solution, though

seemingly more costly and potentially less appropriate.

The AASHTO proposal retains reliance on motor fuel tax and the inconsistencies with other public policies such as energy, and the fuel taxes inability to produce sufficient revenues.

## **5. Radical Approach: The ultimate "user fee = user benefit" for transportation is the income tax.**

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 2, 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. Both outcomes limit revenues based on costs. This paper proposes to change the equation and focus on the benefits.

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.

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 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 can be developed, maintained, and operated.

Allocations to states, cities and local government, transit providers, airports, ports, intercity passenger and freight providers, ports, 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.

Other benefits of this approach follow.

- 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 political support for any new taxes.
- 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.”
- Shouldn’t 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 doesn’t purchase the same benefits.
- Won’t states raise their gas taxes to replace the forsaken federal level?

Recognizing that the income tax approach is a radical departure from past practices and current thinking, the other three approaches discussed above could provide the basis for the intermodal fund- the *Last Mile Fund*.

## B. Continue to Cobble

While there are many approaches to achieve connectivity and intermodalism, they all require redirected funding or new sources of funds that reduce “modal influence.” As such they require changes in federal laws and programs to allow the interconnections to be eligible for federal funds. For the purposes of discussion, consider the creation of a new funding category- the “*Last Mile Fund*” for connections between the modes. The following are some suggestions for revenues for the fund. They are broken into two sections; changes to existing funds, programs or taxes and fees, and new funds, programs or taxes and fees.

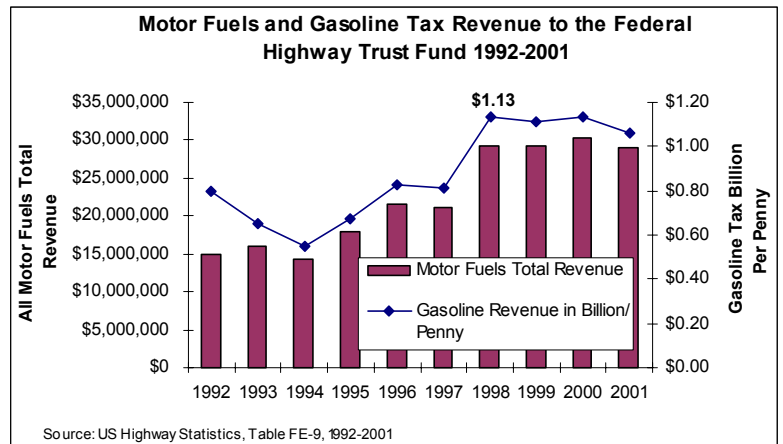
### 1. Changes to Existing Revenue Sources

#### Gas tax increases

This in many respects is the easiest. The yield of the gasoline tax is around \$1.1 billion per

penny<sup>31</sup>. There has been a leveling off and some decline in the revenues over the past three years. Inflation further erodes the purchasing power of the revenues compounding the decline. Better fuel efficiency in the automobile and trucking fleets will seriously undermine the revenue source. The yields from the jet fuel and avgas (19.3 cents and 21.8 cents) were \$ 768 million in 2000 and estimated to be around \$840 million in 2001 and 2002. One key option is to index these taxes or just raise them. Every billion dollars needed to fund connectivity and intermodalism would require about a penny increase from these fuel taxes.

Chart 5



Pros: The program and collection mechanism is in place. The concept of the gas tax as a “user fee” is well established.

Cons: Congress has only raised the motor fuel tax four times since its inception in 1932. The last time was in 1991 for ISTEA and the fundamental argument was based on the transportation reauthorization also being a jobs bill. The traditional beneficiaries will argue that their needs aren’t satisfied with a tripling of the gas tax. Therefore, any new gas tax increase must be reserved for their purposes. Furthermore, some of the recipients of gas tax dollars for

<sup>31</sup> Office of Highway Policy Information, FHWA, *Highway Statistics, 1992-2001*.

connectivity and intermodalism do not contribute to the Highway Trust Fund and should not receive any benefits from it, i.e. Amtrak and rail freight. Gas tax revenues improved over the past 10 years because of the growth in motor vehicle ownership plus the tremendous growth in SUVs and their poor gas mileage. These trends are slowing and the growth of SUVs is very sensitive to higher gas taxes.

The continued reliance on the gas tax is inconsistent with other federal policies. In fact, it exacerbates the energy and clean air policies of the United States. Furthermore, conformity to these other public policies will decrease the value of the gas tax, forcing more and sharper gas tax increases to keep up.

Jet fuel and avgas taxes are very controversial, since airline margins are so thin that small shifts in fuel pricing have compounding effects on the profitability of airlines. Since 9/11 there has been no growth in the aviation industry.

## Tolls

The current law prohibits the imposition of tolls on the Interstate System except for bridge replacement. The federal government has come a long way in thinking about tolls. Historically they have been opposed to them and would not even recognize toll roads as part of the transportation system. This attitude began to change with ISTEA and TEA 21 with concepts such as “congestion pricing” or “value pricing.”

Allowing federal funds to be used to place tolls on the Interstate System, with the revenues shared by the states and the federal government, would allow more “user fees” to be generated. The federal share could be dedicated to intermodal connections on and off the Interstate. Today’s toll collection technology makes this practical. The “Hot Lane” approach found on I-15 allows tolls to vary according to the level of capacity and service on the roadway in real time. The toll can increase to \$8.00 depending on congestion levels. Every driver could be issued

a transponder that would automatically charge him or her for using the interstate and other limited access roadways.

Pros: This directly correlates to the user and the services they want from the transportation system. There is significant cost to providing certain levels of capacity at specific times and if you want it, you pay. Thus there can be a real time correlation between use and benefit.

Cons: Because the interstates are often used for more than just intercity travel, many drivers accessing them on and off throughout the day for local travel, the question is where to place the tolls and how often to charge drivers. Local congestion and the concerns about local deliveries would need to be addressed.

Other toll efforts or ideas of note follow.

- Texas has developed Regional Mobility Authorities with the ability to institute tolls in a county or multiple counties with the revenues remaining in the affected counties. Revenues can be used for other transportation purposes.<sup>32</sup>
- Building exclusive truck hot lanes to improve trucking efficiency. These lanes can be through lanes in particular congested corridors; or lanes to developed intermodal terminals, i.e. ports or warehouse complexes or rail freight terminals.
- Colorado’s Toll Enterprise entity for new or additional capacity that can use up to 10% of public funds.

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<sup>32</sup> Texas law allows the DOT, if needed, to enter into agreements with property owners to receive royalties instead of property purchase from the transportation project. For example allowing the property owner whose property has a new truck lane/rail freight line/new highway to receive something for every truck that passes through their property. TexDOT has not entered into any such agreements, but the opportunity and idea are there.

### **Encumber RR Diesel Fuel Taxes for transportation purposes**

This generates approximately \$170 million a year.

Pros: It's already being collected.

Cons: Railroad advocates argue the money is already needed for rail improvements and should be dedicated for rail, like taxes are for the other modes, i.e. air and highways.

### **Flexibility in aviation and highway programs**

These programs currently restrict the usage of their trust fund dollars. This change would allow them to use their funds for expanded purposes that are critical to mobility.

*Aviation:* Airport Improvement Program (AIP) funds are restricted to the airport and for public purposes and space, such as capacity, noise reduction, equipment and facilities, land acquisition, safety and airport roads, but not revenue producing areas. Primary airports (a public airport that has commercial air service with at least 10,000 passengers boarding per year) are entitled to receive AIP funds each year in accordance with the following formula:

- \$7.80 for each of the first 50,000 passengers boarded;
- \$5.20 for each of the next 50,000 passengers boarded;
- \$2.60 for each of the next 400,000 passengers boarded;
- 65 cents for each of the next 500,000 passengers boarded;
- 50 cents for each additional passenger boarded.

The AIP program, funded by the Airport and Airway Trust Fund, was established in 1970. In 1990, Congress became concerned that the AIP program would not be able to meet the future infrastructure needs of U.S. airports. Consequently, the 1990 AIP reauthorization law permitted an airport to assess a fee on

passengers, known as the Passenger Facility Charge (PFC). PFCs are collected by the airlines and paid directly to the airport without going through the federal treasury. They are intended to supplement AIP by providing more money for runways, taxiways, terminals, gates, and other airport improvements.<sup>33</sup> The 1990 law limited the PFC to \$3.00; AIR 21 raised it to \$4.50.

If an airport does impose a PFC, the charge is capped at \$4.50 per passenger. However, an airport will lose 50% to 75% of its AIP funds depending on the airport's enplanement. The lost AIP funds are returned to the FAA and are currently redistributed by the FAA in the following manner:

- 50% to non-hub airports;
- 25% to general aviation airports;
- 12.5% to small hub airports; and
- 12.5% to the discretionary fund.

Essential Air Service (EAS) is receiving a considerable amount of these redistributed funds, and many recognize the cost and inefficiencies of the program. The President's FY'2004 budget noted: "The cost of EAS has more than doubled in the past year. As of July 2002, EAS provided subsidies to air carriers in 114 communities...14 have subsidies that exceed \$200 dollars per passenger...The

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<sup>33</sup> Note: The uses of PFC revenues are equally constrained as AIP funds, but the restrictions are being challenged by some of the airports. A glimmer of hope is found in the Northeast Corridor connection with Newark International Airport. PFC funds were part of the funding mix to construct the station and connection. However, these funds could not fund the station that could be used for non-airport purposes, but the PFC could be used for the monorail connecting the station and the terminal. The assumption was that the use of the monorail, which only connects to the airport, was therefore 100% dedicated to public purposes for the airport. This idea took over 10 years of negotiations.

President's Budget is proposing significant changes to EAS...<sup>34</sup>

There are several modifications that could expand the use of these aviation funds, AIP and PFC, to connect airports to the rest of their transportation system. A major modification would be to allow the use of the AIP funds off airport and within the region, when the airport is a major beneficiary. Another proposal allows AIP funds lost when an airport imposes a PFC to remain in the economic (BEA designated) region from which it was lost for investments in connectivity to airports and regional investments that enhance aviation in the region. Lost AIP funds total around \$440 million. (See Appendix A for a map and chart listing the BEA regions and the \$440 million in AIP funds by regions.)

Pros: The requirement to lose at least 50% of one's AIP funding for instituting a PFC is inconsistent with the use of highway motor fuel taxes. States impose their own gas taxes and do not lose Highway Trust Fund dollars in so doing. Why should an airport lose when imposing the PFC? Change the aviation laws to allow airports to impose PFCs for transportation related investments around and to the airports, but with no penalty. Allow the saved AIP funds to be used for this purpose as well.

Unless one is transferring within a terminal, people and goods do not magically appear at airports. They must travel by using roadways or rail, and, thus may come in a car, bus, train, subway or truck. Whatever the mode, the airport and air carriers are dependent on other forms of transportation for them to be successful. Consequently, they should participate in the costs to provide the transportation connections.

The highway program is more flexible than aviation, but it too has restrictions. One major restriction is that no funds can be used to support intercity

passenger rail and rail freight- other than the highway components, i.e. bridges. Another restriction is the \$100 million TIFIA threshold, which should be lowered to \$50 million. At a \$50 million level there is more private sector opportunities to undertake intermodal projects.

Cons: The airlines do not care how customers get to the airport. They want aviation funding used to help the airside where they get a direct benefit for "their" dollars. The increased cost of security and the down turn in aviation business since 9-11 has placed an additional burden on the aviation industry which makes this a difficult time to expand uses of aviation funds.

### **PFC Concept to Airport Transit Connections**

Newark International Airport is connected to the Northeast Rail Corridor (NEC) station by a monorail. There is a \$5.00 fee for the monorail. The demand for this monorail connection to the airport has exceeded the forecasted demand by 5 years already.

There is a market and interest in access to airports without driving. The rail fare from New York City to Newark International Airport by NJ Transit is \$6.55 one way and by Amtrak the fare is about \$21.00. PFC funds were allowed on this project for the monorail because the monorail is only connected to the NEC. The station is not eligible for PFC funds.

Changes in the law and regulations are needed to allow PFC funding for these types of projects.

### **Redirection of 6.5% on airfreight waybill**

This would add \$474 million annually to a "*Last Mile Fund*." If the surcharge concept were attempted this could be aviations contribution or this fee could be adjusted to account for new charges.

### **Flex Transportation Safety (TSA) Funds**

TSA funding could provide the basis for the technology needed to undertake a VMT tax. The transponders and GPS systems needed to

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<sup>34</sup> Subtext of OMB's in the President's FY2004 transportation budget request.

assess this tax could also provide important information to the TSA. Weigh-in-motion, vehicle plaques that contain hazardous cargo, truck driver information and tax payment records for traveling through a region or the country could be supplied to the TSA. The use of such technology would speed up border and port entry access while assessing the security risks. It would provide needed security and transportation information to states about the use of their roadways and rail lines, and whether the cargo or drivers are appropriate.

## 2. New Revenues

Three of the newer ideas (VMT Tax, National Motor Vehicle Fee, VAT on freight and a Freight Surcharge) have already been discussed. Other ideas follow.

### **Rental car charges at airports that jointly finance the modal connection**

There is a growing desire in metropolitan areas to connect airports with heavy rail, light rail, and inter and intra city buses. As we have discussed, financing those connections is difficult. At the same time these modal connections are being pursued, airports are also seeking to move rental car activities further from the terminal areas, both for security and access reasons. Combining these two purposes can provide a public-private partnership that provides the financing to achieve the goals.

The planned design for the Warwick Intermodal Train Station in Rhode Island provides an example. Amtrak's Northeast Corridor is 1500 feet from the terminal of RI's primary airport, T.F. Green. Connecting the two would enhance access to and from the airport, and reduce congestion about 8% if the rental cars could be moved from the airport parking garage and surrounding area and consolidated at a new train station. A rental car facility and parking integrated with an intermodal transportation facility for Amtrak, commuter rail to Boston, a rail shuttle connection to Providence, and inter/intra city bus area all linked to the airport's terminal by a people mover.

The financing would be a combination of federal highway funds and a customer facility charge (CFC) on the daily rentals. A TIFIA loan has been approved using the CFC to cover the taxable debt. The difference in TIFIA's treasury rate for debt and what is taxable is about 1.5 to 2 percent. This is a savings of tens of millions over 30 years. This benefit to the private sector accrues because of the public sector's involvement. Thus the agreement calls for the savings to be split and the public sector's half to be escrowed to help cover future operating costs. (Note: AIP funds could not be used on the facility since most of the investment is off the airport's property. Some AIP funds could be used to connect the people mover to the terminal and for the people mover elements on the airport. This restriction exists despite the fact that this project's purpose is to directly feed the airport.) Changing the law to allow for these types of investments to be eligible for AIP funding as well would make these types of activities more possible. The benefits are to the customers and the possibility of more choices.

### **Capturing value of freed up airport slots**

Historically, airport managers have entered into long-term leases with airlines for gates. Airlines prefer this because the limited number of gates is a control on emerging competition at an airport. For airlines, it is often cheaper to have a gate sit empty than meet competition with service, or having the competition erode their market share through new service. These long-term gate leases have provided the security to the financial community to underwrite airport debt. Airports liked it because there was a predictable flow of funds to them. If a carrier went bankrupt others would fill the void. (Note: recent bankruptcy filings may end up challenging this belief, i.e. St. Louis.)

Gates, however, are commodities. AIR21 recognized this and prohibits the historic strategy for the future or risk the loss of some AIP funds.<sup>35</sup> However, most airports have

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<sup>35</sup> Unfortunately this change appears to be a casualty of 9-11 and the airlines financial problems. Congress is reconsidering this restriction and seems prepared to go back to the pre AIR21 policies on gates.

entered into long-term leases and need to renegotiate or wait until they expire before they can recapture the value of their gates. The gate value to the airport could be significantly higher than the leases, depending on the airport's needs. Airports could auction the gates and enter into agreements that if gates remain underutilized, the airport can allow other carriers to use these gates or rescind the lease. The benefit for the airport can be additional revenues and/or better utilization of gates that also generates additional revenues, instead of forcing an airport to expand and reconfigure gates because existing gates are not effectively used. These revenues could be used to underwrite capital projects for connectivity.

### **Value capture**

Too often we forget that the market drives most transportation decisions based on benefits for the market. Transportation needs to capture the value, "the benefits," of those investments and not view them as free products.

Transportation productivity is a critical force in today's economy as it was in the past. For example, rail's ability to cross the country in days instead of months, to reach inland points in a day, increased productivity and reduced costs against the competition. The results were increased goods and mobility at lower costs. Transportation should share in those savings and efficiencies. Communities such as St. Louis failed to comprehend new transportation technology of the mid and late 1800s. They were left behind and a new cross road, hub and jumping off point, Chicago, emerged with significant rail capacity. Market forces drove the decision, not public policy. Public policy embraced the new technology and encouraged its growth by land grants and public rights of way, but they would have failed if there were no markets. Indeed the railroads understood this concept and created their own markets through their economic investments along their rights of way. These markets were strategically placed to maximize revenues and cover operating costs.

Transportation investments are often assets. They need to capture the value they make to a community, state, region, nation and world.

Reliable and convenient access has value. (See Section II.5.C. Pay-As-You-Go: Land Use Finance Options, where impact fees, extractions, special assessments and tax increment financing are discussed and are relevant to this discussion too.)

Historically, the public sector has restricted securing the value that accrues from or because of a transportation investment. This is beginning to change, but the inertia is large. Examples of value creation: downtown Manhattan's growth was made possible by the New York City subway and PANYNJ's PATH system connecting the workforces to the financial economic center. Many people seeking access to lower Manhattan, could not, without these two transit providers. Unfortunately, neither system was able to capture a portion of the value they created. A similar tale exists in Washington D.C. with the Metro, where the subway revitalized the surrounding suburbs, like Silver Springs, Maryland. Suburban access to Metro is a highly sought after property. Central New Jersey communities witnessed a significant increase in property values when NJ Transit introduced "Midtown Direct", a one-seat commuter rail ride from Central New Jersey to Midtown Manhattan. Unfortunately, the transit providers in all of these cases were unable to derive any revenue from their presence. Each is scrapping together funding to continue because they are unable to participate in any of the wealth they have created.

This creates a disjointed problem where property owners and businesses benefit from the transit investment through increases in property values, employment opportunities, and economic development results from these transit investments; but transit operators are left with debt or no extra funds to replicate the success in another area.

Ports, airports, highways and rail lines all create the economic health and vitality we have today. Impact fees, income tax capture from the increased employment in the area as a result of the transportation investment, or a percentage of the increased property taxes resulting from the

investment, are some of the ways to capture value.

There are other ways too, but they require a rethinking of how the public sector, in particular, makes transportation investment decisions. Transportation departments are basically landlords; they do not manage their transportation system. Instead, they tend to contract out work for construction and even planning and maintenance. This approach must change. DOTs must become managers of their transportation systems. Transportation is a business and financing it is a part of management. They must look at their infrastructure as an investment.

For example, the EZ-Pass<sup>36</sup> electronic toll collection system in the New York, New Jersey and Delaware area was viewed as an important and efficient toll collection system that could reduce congestion at toll barriers. It does that well. However, it was also a way of generating new revenue for transportation. The technology is not confined to roadways and bridges; it can be used in drive thru, parking garages, etc. The clearing house operations should have been a P3 equity partnership where the “Clearing House” provides the transponders and markets the off roadway use and shares a percentage of each transaction with the public sector.<sup>37</sup> The public sector provided the market, the transportation infrastructure, and the technology. They deserve to benefit from the off roadway use. Instead the public sector did what they always do, they contracted it out and it cost them millions to do the contract. We must rethink how we undertake transportation in this country.

### **Section 18 Model**

Section 18 is the Rural Public Transportation Program enacted in 1978. This program is somewhat unique in that it provides federal funds to private intercity bus service to maintain

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<sup>36</sup> Registered named to the Port Authority of New York and New Jersey.

<sup>37</sup> Governor McGreevey in early 2003 redid the agreements on EZ-Pass. One of the changes is for the authorities (IG Group) to participate in some of the revenues from off roadway uses of the pass.

such services in rural areas that often are dependent on bus service for their mobility. The program also allows funding from other federal programs, namely social services, education and labor training programs, to be used to as part of the local match to the Section 18 program funds. The rationale is that the federal government was funding 128 different transportation programs in rural areas in 1978, and that these funds were being wasted in a silo approach to rural transportation. Agreements were crafted in 1979 that allowed funds from Medicare, labor training or Head Start to be used with transportation funds.

The purpose for including this here is to note the precedent in using other federal funds that utilize the transportation system and to underscore the precedent of using the public funds for private carriers.

### **Emissions charges (and trading)**

Transportation contributes more than 33% of CO<sub>2</sub> in the US and emissions and trips are expected to increase at a greater rate than improvements in fuel efficiency can compensate. The level of emissions varies by mode, by trip length, by vehicle type, by weather and other factors, but currently, there are very few restrictions or incentives to require or induce transportation users and providers to consider the level of emissions when making their transportation choice. Generally, the choice is based on cost, time, and convenience, or a combination of the three, but not on the impact to the environment.

An emissions trading market for the transportation sector, either based on the emission trading models for the energy and industrial sectors, or by including transportation in existing emissions trading systems, would have several advantages, including environmental protection, funding for intermodal connections and other system improvements, better use of transportation resources, and integration of modes instead of modal competition.

The market would begin with a baseline of allowable emissions per passenger for each



mode for a given distance. The baseline could begin with these levels based on today's technology and ideal passenger loads. When a carrier exceeded these levels, they would need to purchase emission allowances from another transportation provider, or possibly from another sector. For instance, since intercity bus and intercity rail both have lower emissions per passenger than any type of aircraft, especially for short trips, airlines could buy emissions from one of these industries, or from another airline with emissions credits. (An airline might have an emissions balance if it consistently had high load factors, which would reduce the per passenger emissions of a flight, or flew more long distance flights and fewer shorter distance flights, since shorter flights are extremely inefficient for aircraft in terms of energy use and emissions as most emissions occur during take off and landing.)

In the long run, an airline might phase out its shorter flights and replace them with code sharing agreements with rail and bus carriers. This would provide more passengers and revenue for rail, and save airlines money on costly short flights, in addition to the environmental benefits. Passenger trains would also have to change their long distance schedules to increase their load factors, or they would have to buy emissions credits. In the even longer run, industry would respond by making all modes more efficient in terms of their energy use and their environmental impact. This is further down the road, however, since technology, especially for aircraft, takes a long time to develop and savings in emissions are not currently expected for decades. In the meanwhile, the mode shift from high emissions to low emissions carriers would reduce emissions overall.

Airports and rail yards could also participate in emissions trading since airport and rail ground vehicles are also high polluters, providing substantial emissions to trade. Recent improvements have been made in both areas, and emissions trading could stimulate further adoption. Secretary Mineta introduced a pilot program for zero emission ground vehicles at several airports in 2001 and several airports and

airlines are already using alternative fuel, solar, and electric vehicles, to lower the emissions from airport ground fleets.

As airlines created code sharing agreements with high speed rail providers and routed passengers to trains instead of planes, airlines would save money, since short flights are expensive to operate. This would also generate revenue from the sale of the rail tickets, and provide passengers for rail, which would lead to more funding for rail operators, i.e. Amtrak.

Pros: The International Civil Aviation Organization (ICAO) is considering emissions trading and it is a policy instrument with international agreement under the Kyoto Protocol. Industry and NGO's generally support the emissions trading concept. Other benefits of emissions trading include "economic efficiency, polluter pays, equity and competitiveness, and administrative feasibility"<sup>38</sup>.

Beyond support of the concept, implementation is feasible. The existing framework, technology, and markets for emissions trading could be adapted to include the transportation sector. This solution would also provide short and longer-term improvements for the environment and the transportation system, by stimulating a mode shift and cooperation between modes in the short run and more energy efficient technology in the longer run. It also provides a market-based source of funds for transportation improvements based on the polluter pays principle, increasing its acceptability. Finally, it would raise consciousness of the harmful affects of transportation emissions on the environment and would encourage everyone to make smarter decisions when traveling or purchasing a car.

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<sup>38</sup> Chris Hewett and Julie Foley, "Plane Trading: policies for reducing the climate change effects of international aviation", Institute for Public Policy Research. See also Appendix B.

Emissions trading also “reward all efforts to cut emissions.”

Cons: The poor with higher emission vehicles could end up paying a disproportionate share of the charges. Emissions trading in motor fuels could also cut into the emissions market currently enjoyed in the air quality industry. It would be costly to implement a new system and come to an agreement on the measuring and reporting of emissions as well as the split of emissions between origination and destination cities. This is true for all modes, but particularly for aviation.

Experts feel a global emissions charge is unlikely, since aviation fuel is currently not taxed and the Chicago Convention prohibits such a charge or anything that would harm a nation’s air carriers. Smaller airlines with older jets would pay more. Regional emissions may be more likely, than global trading,<sup>39</sup> which might limit the improvements to some regions, rather than creating new technologies for the future. For rail, essential rural routes might become even more unaffordable. Airlines, rail, and other freight and passenger carriers are already low on cash and paying for emissions credits would be an added cost. Finally, the last argument is based on the valuing of emissions. Although emission trading is generally thought to be environmentally positive, because the trading is based on the market and the demand for emissions credits, the price might not reflect the value. “Low price elasticity may undermine environmental effectiveness”<sup>40</sup> and therefore might not induce enough action by transportation providers or users.

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<sup>39</sup> *ibid.*

<sup>40</sup> *ibid.*

## CONCLUSION AND RECOMMENDATIONS

In science there is a principle called Ockham's razor.<sup>41</sup> 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 to intermodalism and connectivity, 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 intuitional structures and financing require increasing 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 into the current system

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<sup>41</sup> 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."

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 many of the ways we are financing transportation in an effort to identify financing sources for interconnectivity and regional multi-modal investments. The initial financial need to meet and deliver intermodal and connectivity needs and projects over the next five years is approximately \$5 to \$8 billion annually, and about \$10 to \$12 billion a year after that. It can be done. We can establish 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, or many of the fees discussed in the paper. 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 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 yet another mode – an intermodal mode, a connectivity mode- fighting for attention and a few dollars? There is a better way to finance a transportation system in this country. It is a way that Ockham's 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 are us, 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. Over the next ten years the inability to finance intermodal regional solutions will be recognized as a hidden cost to the movement of people and goods in this country.

In the mean time we need to begin financing intermodal and transportation connectivity projects. We need to cobble together a way. Starting with the assumption that for the next two years there will be no new taxes/fees for transportation, we need to redefine the eligibility of existing funding sources in TEA 21 and AIR 21 to allow them to encompass intermodal projects. The reauthorization of aviation and surface transportation provide an opportunity to accomplish this. Aviation law can be modified to reallocate AIP funds that are lost when an airport imposes a PFC. These lost funds can be kept within an airport's region and redistributed for intermodal projects related to the regional airports. We can achieve parity between transit and highway projects, with respect to full funding agreements, MIS and local match, so that the best transportation and not the regulatory and financially easiest transportation

choices are made. Additionally, we can adopt the matching flexibility elements of the Section 18 program for all the transportation elements. We can decrease the entry level for TIFIA to \$50 million; and we can reinvent HIPPP or private activity bonds. Both efforts and actions will increase public-private partnership opportunities, which will be needed to undertake large regional transportation and/or intermodal connectivity projects. Furthermore, we can hammer out the policy differences so all states can have a SIB.

Other near term changes would be to allow states to engage in public-private partnerships as an equity partner capable of making profits from an investment which would finance other transportation projects; or to see the potential of electronic toll collection beyond the toll road and efficient toll collection to a means of collecting parking fees, drive through window charges, etc., off the toll road, and partner with a back office provider to extract the value of the electronic investment in its use off the toll road a piece of each transaction of the transponder/smart card. The goal is to encourage and allow the public sector to capture the value of the public's transportation investments, which can be reinvested back into the system.

When the ban on new taxes is lifted, the use of VATs and/or a national tax on motor vehicles or VMT assessment could provide sufficient funding to meet intermodal and connectivity needs. A VAT on cargo in the country is preferred in that it would cut across all modes as contributors. Today's technology provides a means for collecting new fees or taxes. It is also a way to generate income, e.g. use technology to improve the efficiencies of the transportation system and then extract part of the value for the efficiency savings to finance connectivity. The technology will also assist in the VAT and/or VMT approach.

Whatever way we finance transportation we should establish performance criteria for federal transportation funding. Some possible ideas are: flexibility between modes; system/project financing tied to end-user performance; quality

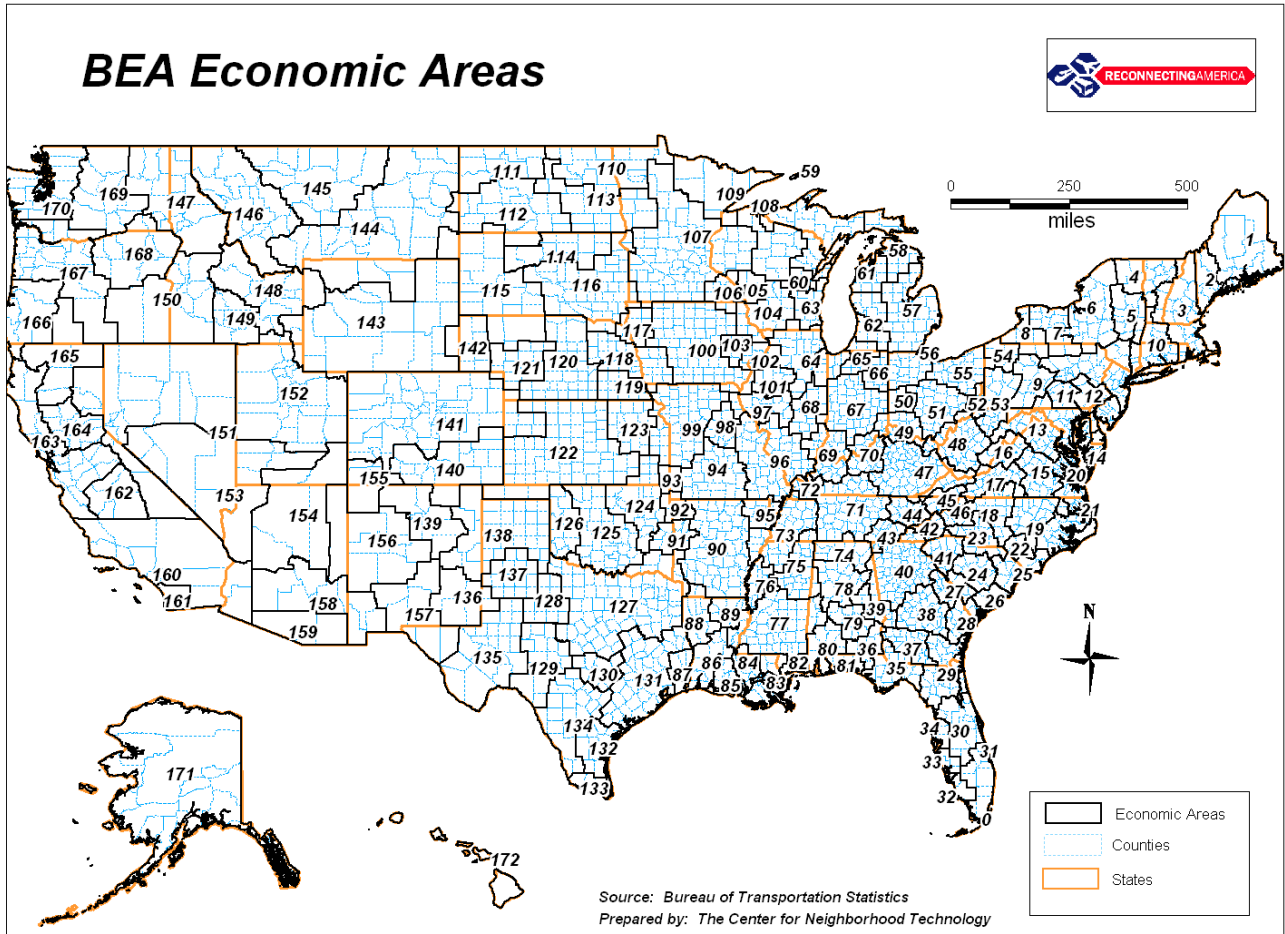
and convenience of connections, where appropriate; multi-state/regional solutions; adoption of planning requirements for any and all federal transportation funds; a level playing field with respect to federal transportation regulations/laws/matching requirements, so that the rules don't dictate the solution; a recognition of the relationship between financing transportation and other federal policies, specifically energy and the environment; real time technology information systems that are multi-modal; improved security; and an ability to form partnerships.

We can get there but we must be careful about debt. The way we are financing transportation today and its results should be put on credit watch. The issuance of debt needs to be more strategic and limited. "Pay-as-you-go" is not a wrong-headed approach. The future demands that we be prudent and live within our means.

In addition to financing, we need to resist efforts evidenced in the Senate Finance Committee to begin decoupling transit from the Highway Trust Fund and keep the Trust Fund just for highway purposes. We need to move away from modal competition and seek transportation solutions that are the best overall solutions and fund them.

If we move in these directions, we will begin to see that intermodal and connectivity investments are not a bane to our mobility. Indeed they are critical to it. Once we get there, and we have a transportation system, it is a much shorter step to recognizing the beauty and function of a single federal source to finance transportation- the federal income tax. Ockham would be pleased and so would we all.

# APPENDIX A: BEA REGIONS AND AIP SAVINGS



<b>BEA</b>	<b>Airports in BEA Region with Forfeited AIP (in descending order by BEA forfeited amount)</b>	<b>BEA Original Entitlement</b>	<b>BEA Forfeited Amount</b>
10	Bradley Int'l, Newark Liberty Int'l, John F Kennedy Int'l, La Guardia	61,836,816	\$32,588,894
163	Metropolitan Oakland Int'l, San Francisco Int'l, Norman Y. Mineta San Jose Int'l	40,383,280	\$28,138,435
13	Baltimore-Washington Int'l, Ronald Reagan Washington National, Washington Dulles Int'l	36,349,756	\$27,262,317
64	Chicago Midway, Chicago O'Hare Int'l	36,142,784	\$24,571,392
31	Fort Lauderdale/Hollywood Int'l, Miami Int'l, Palm Beach Int'l	36,548,416	\$23,154,044
127	Dallas/Fort Worth Int'l	26,000,000	\$19,500,000
40	The William B Hartsfield Atlanta Int'l	26,000,000	\$19,500,000
160	Burbank-Glendale-Pasadena, Los Angeles Int'l, Ontario Int'l	37,638,328	\$18,819,164
141	Denver Int'l	21,412,940	\$16,059,705
158	Phoenix Sky Harbor Int'l	21,124,252	\$15,843,189
57	Detroit Metropolitan Wayne County	20,356,776	\$15,267,582
107	Minneapolis-St Paul Int'l/Wold-Chamberlain/	19,989,016	\$14,991,762
96	Lambert-St Louis Int'l	18,318,496	\$13,738,872
170	Seattle-Tacoma Int'l	16,905,944	\$12,679,458
12	Philadelphia Int'l	15,324,052	\$11,493,039
3	General Edward Lawrence Logan Int'l, Theodore Francis Green State	22,425,270	\$11,212,635
153	McCarran Int'l	20,455,214	\$10,227,607
152	Salt Lake City Int'l	12,552,344	\$9,414,258
30	Orlando Int'l	17,861,648	\$8,930,824
34	Tampa Int'l	10,999,800	\$8,249,850
167	Portland Int'l	9,784,516	\$7,338,387
49	Cincinnati/Northern Kentucky Int'l	14,253,966	\$7,126,983
55	Cleveland-Hopkins Int'l	9,299,516	\$6,974,637
53	Pittsburgh Int'l	12,969,224	\$6,484,612
83	Louis Armstrong New Orleans Int'l	7,966,272	\$5,974,704
161	San Diego Int'l-Lindbergh Field	10,928,360	\$5,464,180
164	Sacramento Int'l	7,051,104	\$5,288,328
67	Indianapolis Int'l	6,863,976	\$5,147,982
51	Port Columbus Int'l	6,471,288	\$4,853,466
125	Will Rogers World	9,399,604	\$4,699,802
99	Kansas City Int'l	8,933,296	\$4,466,648
151	Reno/Tahoe Int'l	5,762,840	\$4,322,130
71	Nashville Int'l	7,509,910	\$3,754,955
171	Ted Stevens Anchorage Int'l	7,070,656	\$3,535,328
130	Austin-Bergstrom Int'l	6,678,600	\$3,339,300
134	San Antonio Int'l	6,558,956	\$3,279,478
156	Albuquerque Int'l Sunport	6,178,780	\$3,089,390
63	General Mitchell Int'l	6,119,592	\$3,059,796
32	Southwest Florida Int'l	6,117,734	\$3,058,867
29	Jacksonville Int'l	5,646,212	\$2,823,106
159	Tucson Int'l	5,417,986	\$2,708,993
70	Louisville Int'l-Standiford Field	5,298,718	\$2,649,359
8	Buffalo Niagara Int'l	5,234,088	\$2,617,044
<b>TOTAL IN BEA REGIONS (EXCLUDES SAN JUAN, PR)</b>		<b>\$696,140,326</b>	<b>\$443,700,502</b>



## APPENDIX B: OTHER POSSIBLE IDEAS FOR FINANCING INTERMODAL TRANSPORTATION

Passenger tax on Amtrak tickets

Passenger tax on commuter rail

Cargo handling fees

Corridor (railroad) use fees

Facility access fees

Licensing and permit fees

Tipping fees

Mileage fees (includes environmental costs and is an alternative to PFCs and freight value tax)

Tie intercity travel to smart growth and finance against efficiencies

Various pre-paid ticket programs (could finance against this)

National Lottery

Savings Bonds

Public Stock Offering

Generational Accounting and Budgeting

Merge Energy and Transportation Funding Flexibility

Penalties (as well as current bonuses) for on-time passenger rail performance (might require higher franchise fee for access to make real, but could produce more performance)

Conversion of EAS to ETS

Revisit postal policy

Redirection of FTA Intercity Bus programs

# APPENDIX C: EMISSIONS TRADING BACKGROUND

The following is an excerpt from the Appendix of an Emissions Trading Report by the New Zealand Institute of Economic Research to the New Zealand Ministry of Commerce.<sup>42</sup>

## “Appendix D: Emissions Trading and Carbon Charges

Both carbon charges and emissions trading are market based instruments that use price signals as key variables to induce investment in greenhouse gas abatement, and allow the price of emissions to converge on the marginal cost of abatement. The principal differences between these mechanisms are as follows:

- With carbon charges government assigns the price, whereas with emissions trading the price is determined by market supply and demand.
- With carbon charges, the revenue collected remains with government and may be used to displace more distorting taxes elsewhere in the economy (giving rise to a so-called double dividend). With emissions trading the value of the permits resides with the permit holders.
- Although the charge confers short-term certainty about the unit price per unit emitted, in the absence of reliable information on demand elasticities there is no certainty about the level of emissions associated with a given charge. In the medium term charges will have to be changed with fluctuations in economic activity and inflation rates to try to hit an emissions target. Emission trading, if well monitored and enforced, confers greater certainty as to the absolute level of

emissions, but greater uncertainty as to the price per unit abated, which may fluctuate in the short term.

- Trading in emissions permits or sequestration credits creates a commodity of value that may be exported or imported; increasing the options for finding and using the low cost abatement options. The corresponding incentive for low cost abatement under a carbon charge relies on the charge rate being set correctly at the marginal abatement cost in international markets.
- Firms can obtain certainty about future permit costs if a futures market with options on permits exists, purchasing rights to permits at future dates at a known price. This option is not available with a carbon charge, for which the possibility of future political manipulation provides an added source of uncertainty over future prices.
- Emissions permits may allow firms some inter-temporal flexibility in a way not possible with a carbon charge, through the option of allowing unused permits to be rolled over into future entitlements. Within the rules of its 5-year commitment period, the Kyoto protocol allows Parties the flexibility of varying their emissions between years according to the most manageable means of hitting their target.
- Carbon charges may have low marginal implementation cost in the context of existing fuel charges, compared with the more elaborate set up arrangements for an emissions trading regime. These set up arrangements include the allocation of permits (grandparenting vs. auctioning or combinations of the two) and establishing a system for registering permit ownership and exchange. Monitoring of national emissions is common to both charges and trading, but

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<sup>42</sup> New Zealand Institute of Economic Research, *Green House Gas Policy Timing: The Interface of Domestic Policies with International Emissions Trading*, Report to Ministry of Commerce, May 1999, Wellington. <http://www.med.govt.nz>.

matching the emissions to entitlements held is unique to emissions trading.

- To the extent that emissions permits are grandfathered to existing entities, trading gives away value of the permits to private entities, which may be foreign concerns, and unlike a carbon charge provides no revenue for displacing other distorting forms of taxation. Large windfalls created in this way may add to short-term distortions in the economy, drawing excessive investment into the permit business to the detriment of other productive sectors, the exchange rate and exports. In the long term such effects should settle to a new equilibrium, taking account of the change in relative prices caused by a new traded commodity in the economy.
- The principal incentive effect of liability for permits holdings or liability for a carbon charge operates in much the same way. The two instruments allow some differences in response (e.g. whether to hedge against future abatement cost rises by holding permits, or through some other means) but the principal differences are not those of efficiency so much as distribution of the value created by making emission capacity more constrained.”

### **Market based measures – a need for action on taxes, charges or emissions trading**

*M. Rossell*, European Commission

“Economic (market) incentives for industry to limit or reduce emissions from aviation in a cost effective way could include levies (taxes and charges), emissions trading and voluntary agreements. Taxes could be levied on fuel or on emissions and collected through fuel suppliers or in addition to the en route charges already made for other purposes. Revenue neutral aircraft efficiency charge would avoid the legal issues associated with a fuel tax and could also be administered in association with existing en route charges to achieve a revenue neutral outcome. An alternative would be to introduce

an en-route emissions charge with the revenues used to mitigate the environmental impact from emissions. Emissions trading also have the potential to make aviation accountable for its emissions in the longer term on condition that a strong compliance regime is agreed. Near-term action by the aviation sector toward reducing the growth of greenhouse gas emissions could be done voluntarily but could not alone achieve an ambitious emission reduction target. It would have to be used in conjunction with other mechanisms such as emissions trading.”<sup>43</sup>

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<sup>43</sup> Paper presented at Aeronautic Days 2001: Preparing for the Global Changes, Hamburg, Germany, 2001, available on <http://europa.eu.int/comm/research/growth/aeronautic-s-days/>, Michael.rossell@cec.eu.int.





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