ACKNOWLEDGEMENTS

There are many to thank in writing this paper. At several times over the past few months I wondered if I had bitten off more than I could chew. It would have been if not for the research, editing and encouragement from several gifted and capable people. The first person I want to thank is Hank Dittmar, of Reconnecting America, for thinking of me for this project.

Sarah Campbell has been a guiding voice, critic, friend and editor throughout the paper, and has

Financing Intermodal Transportation

William D. Ankner, Ph.D.

September 2003

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

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 imcityhhpriche bEuroaw 8.3(p)-1.7(ting to).7(ycTw[1.95 I5JT661(For exam)7.8(ple,)-5.4(so)-2(arrierTJT)-

considerably. According to the Surface Transportation Policy Project from 1995 to 1999, state transportation borrowing using

flexibility elements of the Section 18 program for all the transportation elements. The entry

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.
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I. TRANSPORTATION POLICY: FRAGMENTATION

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

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

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.[6] 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.[7] In 2002, the taxes and fees costs you $51 dollars or 26%. More then 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.[8] In sum, nearly 98% of airport revenues come from the users.

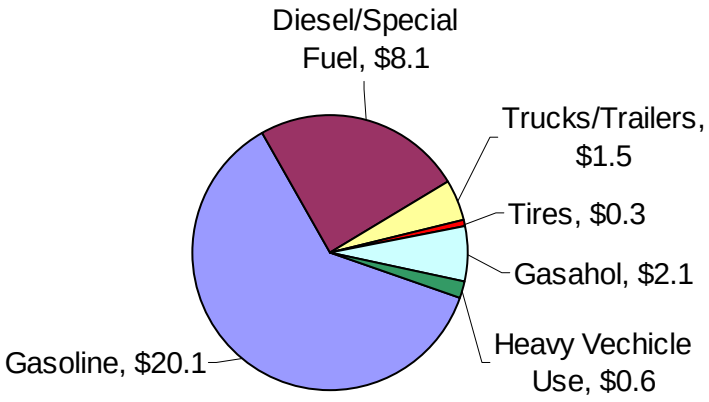
Other dominant aviation funding sources of non federal public revenues are tolls, the issuance of public debt, "bond proceeds," (which the industry calls a revenue, but it is difficult to see how something you need to pay back with interest is a revenue) state/local sales and general income taxes, local 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.

8

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****

[6] Office of Highway Policy Information FHWA, *Highway Statistics*, 2002.
[7] There were no PFC fees in 1972.

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



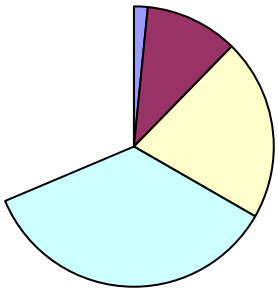


Table 1: Revenue Sources by Mode			
Surface Transportation (Taxes and fees)	**Aviation** (Taxes and fees)	**Rail** (Taxes and fees)	**Other Revenue Sources**
Á Motor fuel taxes (federal and state) Á Motor vehicle registration fees Á License fees Á Property taxes Á Vehicle sales taxes Á Weight distance Á Federal heavy vehicle user fee Á State transaction fees Á Truck tires and tubes taxes Á Tire and tire disposal fees Á Vehicle import fees Á Pavement damage fees Á Traffic impact fees Á Emission fees Á Parking fees Á Value added taxes on autos and trucks; Á fees Á Dedicated "local option transportation taxes"[9] Á Sales taxes Á Property taxes Á Value capture taxes on the transportation investments Á Emission fees Á Benefit based fees	Á Passenger facility charges (PFC) Á Cargo Waybill tax Á Jet fuel and avgas taxes Á Passenger Ticket tax Á Passenger Flight Segmentation tax Á Passenger Security surcharge Á International Departure tax Á International Arrival tax Á INS user fee Á Custom user fee Á APHIS Passenger fee Á Frequent Flyer tax Á APHIS Aircraft fee Á LUST Fuel tax Á Airport Carrier Security fee	Á RR Diesel Fuel taxes (put into the general fund)	Á Hot lanes Á Fare boxes Á General Fund appropriations at both the state and local levels Á Tolls Á Airport parking Á Airport rent/lease of gates and retailers Á Charter bus earnings Á Congestion/Value Pricing Á Rural public transportation (fees/contributions from federal funds for social services, e.g. Medicare.) Á Advertisement Á Concessions Á Sale/lease back transactions Á Rentals and/or leases Á Regional sales taxes Á Food and beverages Á Value captures agreements Á Stock issues Á Bond Proceeds

[9] 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.[10] The amount of state issued transportation debt with state securities is $66.3 billion[11].

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.

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

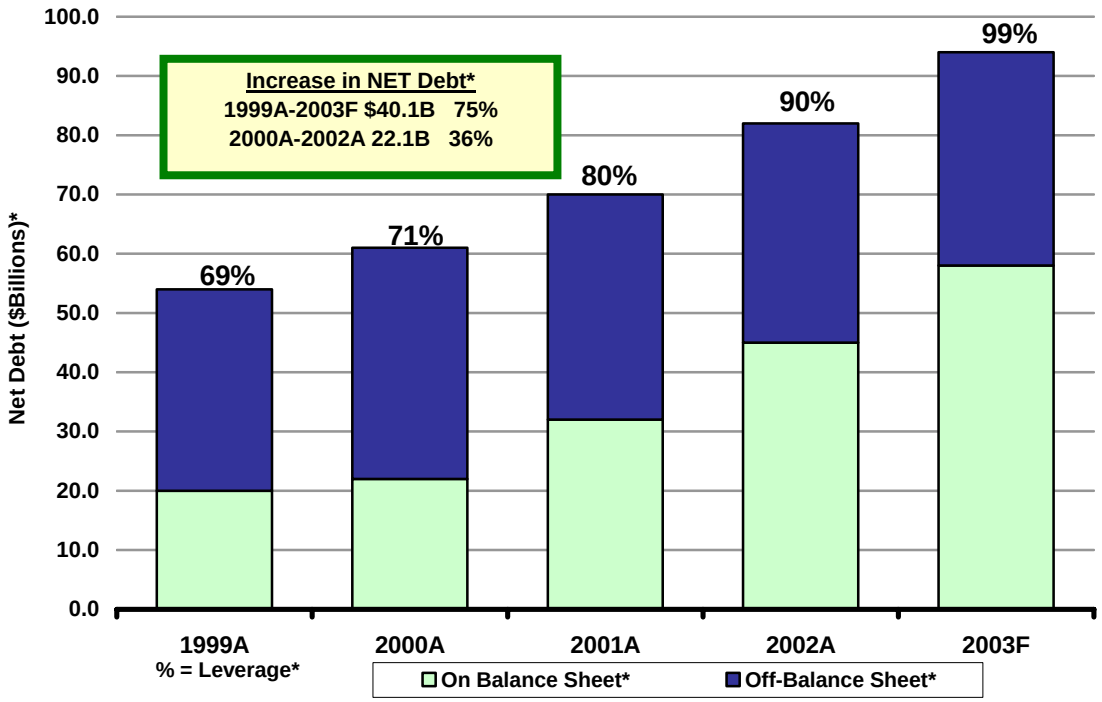
The major carriers are in debt to the point that most are unable to replace their airplanes and equipment. Debt levels have increased by 75% over 4 years to approximately $40 billion increase in net debt, see Chart 3.

This debt level and the failing revenue stream are also affecting the airports. "Credit ratings

[10] Surface Transportation Policy Project, "Measuring Up: The Trend Toward Voter Approved Transportation Funding", 2002.
[11] Office of Highway Policy Information, FHWA, *Highway Statistics* 2001, Table SB-2, "State Obligations for Highways-2001: Change in Indebtedness During Year".

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[13] 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."[14]

However, a great deal of the spending was done

[13] United State House of Representatives, House Rail Subcommittee, June 26, 2003.

over the past two years.[15] 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."[16] 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

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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:

to generate revenues. Under this equity approach, the public sector doesn't have to worry about overhead rates, quality control,

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 associa 36 0.00J0 -s6eu9ce genered

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[23]. 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.

[23] Of. a60 -1.nd

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, [25] 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

25

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.[28] 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.

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 ing t conership has kept 0.finatonot be the onlemrr rai7of commercial t

[28] Wilbur Smith Associates, "Road Pricing Study: Final Report," prepared for Minnesota Department of Transportation and FHWA, 1997.

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 anr y3rds.

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 mo b1.1006 Tc0

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

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 then 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

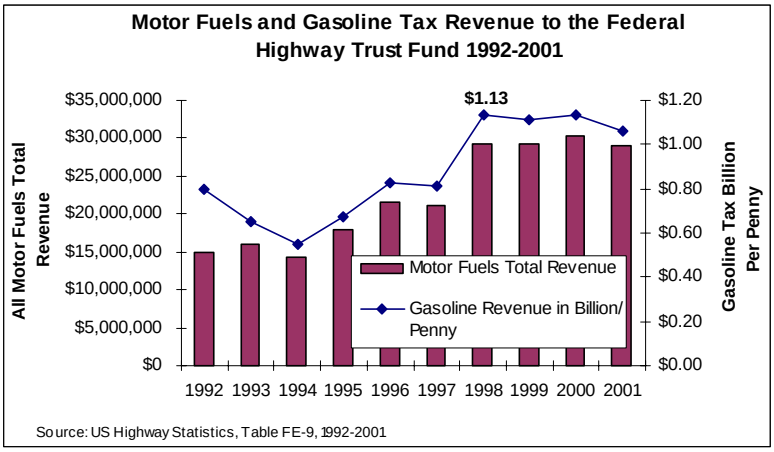
While there are many approaches to achieve connectivity and intermodalism, they all require redirected funding or new sources of funds that reduce "modal influence." As such they require changes in federal laws and programs to allow the interconnections to be eligible for federal funds. For the purposes 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[31]. 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

[31] 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

President's Budget is proposing significant changes to EAS…"[34]

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

[34] Subtext of OMB's in

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 8jNolvement. 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 8jNestment 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 8jNestments 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.[35] However, most airports have

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

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[36] 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.[37] 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

[36] Registered named to the Port Authority of New Range. 5rtoundertNeJersey

[37]

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"[38].

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.

[38] 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

CONCLUSION AND RECOMMENDATIONS

In science there is a principle called Ockham's razor.[41] 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. Intermoda

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

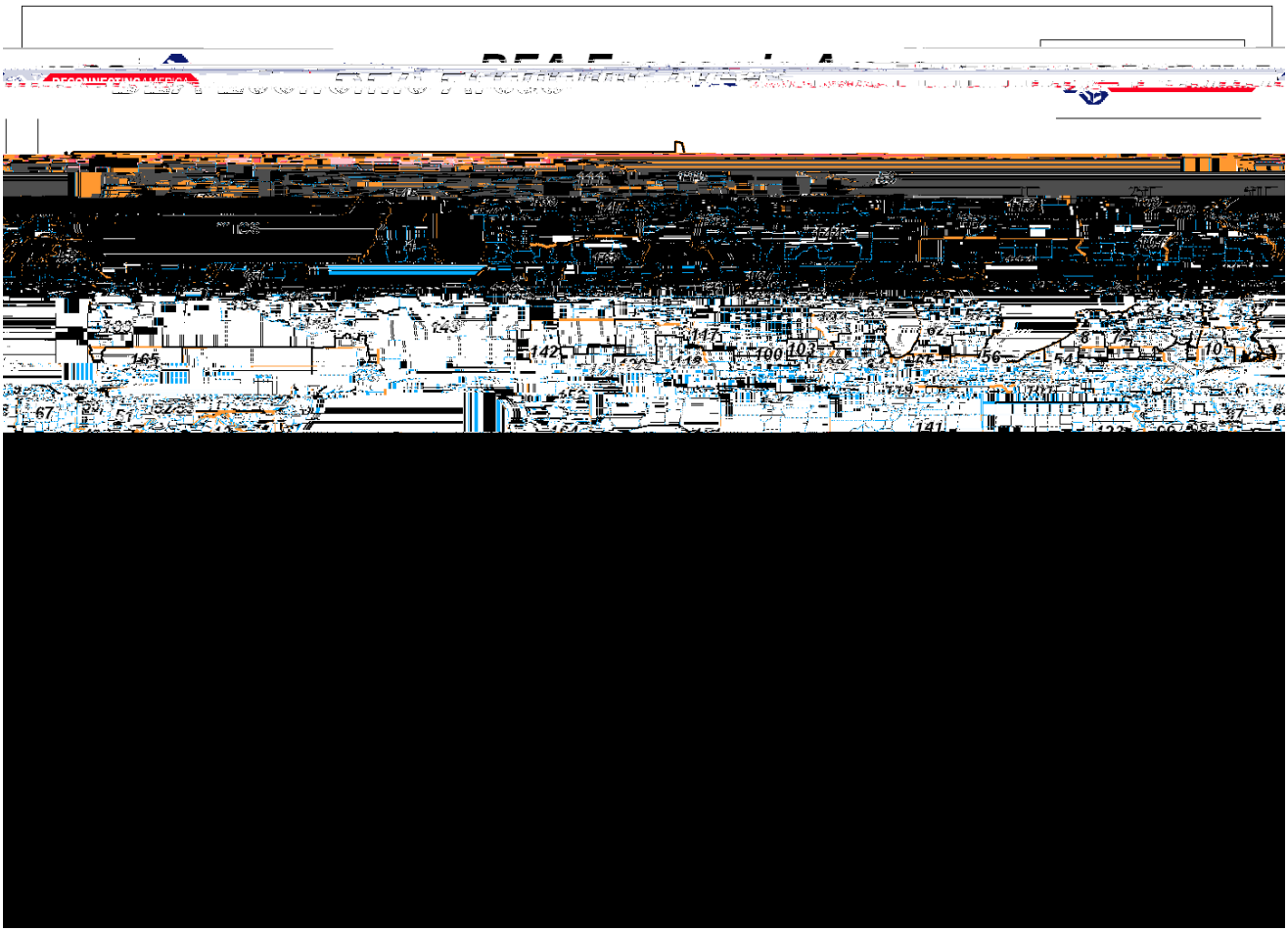
and convenience of connections, where appropriate; multi-state/regional solutions; adoption of planning requirements for any and all federal transportation funds; a level playing field with respect to federal transportation regulations/laws/matching requirements, so that the rules don't dictate the solution; 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



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.[42]

"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

[42] 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.