

Summary Response to Questions Raised during Mr. Millar's July 25, 2007 Testimony

Submitted to the National Surface Transportation Policy and Revenue

Study Commission on August 6, 2007

The series of questions focused on several core issues:

- Assumptions for expected funding levels
- Relationship to land use and other assumptions
- Need for core capacity investments
- Benefits of our proposed investment level
- Funding/financing strategies
- Effect of changes in fuel cost
- The need for a strong, continuing federal role.

Additional information on each of these topics is provided below.

Assumptions for Expected Funding Levels

The question was raised as to our methodology for estimating the \$1.3 trillion (current dollars) in expected capital funding through the Year 2050. As shown in the following table, we based our projections on a continuation of the growth in total capital public transportation funding of 3% annually, net of inflation; a rate of growth in total funding that has occurred over the past 10 years. This capital funding includes all sources of federal, state, regional, local and private revenue and reached an estimated \$15 billion in 2007. With a continuation of the growth at the same pace of 3% per year above inflation, we would expect annual funding to reach over \$52 billion in current dollars by 2050 or a total of \$1.3 trillion during the entire period. Our suggested investment level of \$2.3 trillion during the period through 2050 would be achieved by the pace of growth in capital funding from its recent pace of 3% annually to 5%, above inflation. Though the total investment number of \$2.3 trillion suggested through 2050 may seem high, this funding level represents an achievable target given the expected growth in our economy. With growth in the GDP of 3% annually through 2050, our nation's economy would approach \$50 trillion by 2050 in current dollars compared to \$13 trillion today.

Projected Capital Funding Levels (all Sources, in billions of 2007 Dollars)

Year	Projected Funding	Year	Projected Funding
2007	\$15.000	2029	28.742
2008	\$15.450	2030	29.604
2009	\$15.914	2031	30.492
2010	\$16.391	2032	31.407
2011	\$16.883	2033	32.349
2012	\$17.389	2034	33.319
2013	\$17.911	2035	34.319
2014	\$18.448	2036	35.348
2015	\$19.002	2037	36.409
2016	\$19.572	2038	37.501
2017	\$20.159	2039	38.626
2018	\$20.764	2040	39.785
2019	\$21.386	2041	40.979
2020	\$22.028	2042	42.208
2021	\$22.689	2043	43.474
2022	\$23.370	2044	44.778
2023	\$24.071	2045	46.122
2024	\$24.793	2046	47.505
2025	\$25.536	2047	48.931
2026	\$26.303	2048	50.398
2027	\$27.092	2049	51.910
2028	\$27.904	2050	53.468
		Total (2008-2050)	1,320.726

Note: Assumes annual increase of 3% net of inflation based on recent increases of approximately 6% annually and CPI of 3%.

Relationship to Land Use and Other Assumptions

As I discussed in my July 25th presentation, we are assuming in our analysis that public transportation systems increase ridership and service levels to that of the higher performing systems for regions of a similar size. Implicitly, our analysis assumes that these systems will carry riders with a similar degree of efficiency and that regions will also consider land use decisions in concert with public transportation investments. However, we must provide local governments with the confidence that we will support these local land use decisions with sufficient infrastructure investments. Local elected officials face very difficult decisions as they consider higher density land uses in areas near planned transit lines. Higher density development can generate concerns among residents related to potential increases in local traffic and other issues. While public transportation should be a part of the solution, if local officials see uncertainty in potential public transportation funding, at the national level, they are much less likely to approve density levels which will support high quality, efficient public transportation service. The development of a consistent and predictable funding level for public transportation will allow

communities to make long term plans that incorporate public transportation into their long range land use and transportation decisions.

While decisions regarding land use are decentralized, the aggregate effect of these decisions has a tremendous influence on travel patterns and travel demand. Supporting and encouraging efficient land use development can be a part of the solution. The continued growth of this nation offers an opportunity. According to Arthur Nelson with the Metropolitan Institute at Virginia Tech, more than 70 million new households and 100 billion square feet of non-residential space must be built in just the next three decades as the nation grows by more than 100 million residents. Each of these new housing units and each decision on a location for non-residential activity, such as employment or retail, offers an opportunity to shape our future land use and resulting travel patterns. Decisions on where and how we target our transportation investments will have a major influence on many local government decisions whose cumulative effect can positively influence our national transportation system. As more than 25 years of coordinated land use and transportation policy in Portland, Oregon has shown, this conscious choice can make a huge difference.

Need for Core Capacity Investments

It was noted that in addition to expanding the nation's public transportation system into new areas, new funding strategies must also address core capacity issues faced by a number of the large transit systems. These large systems provide critical access into some of the most important and productive financial centers in our country. Significant ridership increases in recent years have strained systems and, in some cases forced them to operate well beyond their design capacity. Other systems are quickly approaching capacity and are not able to carry projected levels of demand without significant new investment in capacity expansion. Some examples include:

- Washington, DC Metro – A number of rail lines are now operating at or near capacity. Trains are spaced as closely together as possible and cars are frequently too overloaded to pick up waiting passengers. In addition, passengers sometimes have difficulty entering and exiting some of the most crowded stations. Strategies to increase capacity include new station entrances and exits, upgrades to the electrical system to allow 8-car trains and long term investments to potentially include new parallel lines. In 2002, WMATA developed a 10 year capital needs estimate to include the maintenance of the existing system, enhancements to address core capacity needs and expansion of service. Total needs at that time were estimated at \$12 billion, but only a third of the program has been funded.
- Chicago "El" – The Chicago Transit Authority is currently upgrading the Brown Line due to a substantial increase in ridership which will allow the operation of 8-car trains along the line. The project cost has exceeded half a billion dollars. Additional proposals to enhance system capacity in other parts of the CTA system include a second Loop in the central business district at a cost of \$1 billion.
- New York Region – The most significant core capacity issues are found in the New York Metropolitan Area, where public transportation is a vital part of the transportation system. The

needs are both within Manhattan and for those connections to the growing suburbs. The Second Avenue Subway is intended to serve some of the north south need with an expected cost in excess of \$15 billion. The Hudson Rail Tunnel, providing much needed rail capacity between New Jersey and Manhattan, is estimated at \$7.2 billion. Finally, the East Side Access project, at \$7.4 billion, is intended to address capacity constraints faced by the Long Island Railroad. Just over one-third of the project funding is Federal.

These are all large numbers, but the list is just sample of the need and they are only the tip of the iceberg. All these systems and many others have aging infrastructure in need of modernization. As the I-35W tragedy in Minneapolis proved once again, “you can pay now, or you can pay much more later.” Many agencies are focused on maintaining their existing systems and do not currently have the resources available to consider expansions, even when lines are reaching capacity.

Benefits of the proposed investment level

As I mentioned in my remarks, our recommendations for long term investment in public transportation would allow for a quintupling of ridership and offer many benefits. Our proposal should be considered as one potential level of investment with the many benefits that we have described. A higher level of investment would offer still more benefits. We believe that with appropriate levels of investment, public transportation will play a key role in our national transportation system. More specifically, the large level of investment I described will provide:

- **Economic Competitiveness** – The nation’s public transportation system is serving some of the most significant economic centers in our nation, cities like New York, Chicago, Los Angeles, Washington, Atlanta, and San Francisco. New York City alone had a gross city product of \$457 billion in 2006. In many of our largest central business districts, the highway and roadway system is at capacity. Public transportation offers the only option to allow economic growth to continue. Our recent ridership surveys have found that almost 60% of transit trips were for travel to or from work and that 40% of riders have been taking public transportation on a regular basis for less than two years. These are new public transit riders traveling to and from work. They are growing our economy.
- **Mobility.** Almost every resident in the United States can readily access the national roadway network, most often on paved roadways. We envision a public transportation system with the same level of access. With this level of investment, our public transportation system will allow all citizens in this nation a true choice in travel. Such choice would help the nation to successfully adjust to changing conditions we see ahead (higher energy prices, global warming, or threats that are not yet apparent.)
- **Security** – A sound and efficient public transportation system offers a critical backup in times of emergencies. Only public transportation can effectively move millions of people within a short period of time. With an effective investment, we will be able to maintain and improve our current public transportation system to preserve this critical role regardless of the cause – an act of God or manmade.

- Reduction in Greenhouse Gas Emissions – With national investments in public transportation, communities will have the opportunity to shape land use in a way that reduces overall travel. While we do not yet have sufficient technical data available to precisely estimate the potential impact of public transportation, we do know that public transportation’s role is significant in reducing greenhouse gas emissions, with the potential to reduce CO₂ emissions by 30 to 40 million metric tons annually. Public transportation also brings the leverage effect of more efficient land use patterns that reduce overall travel demand, further reducing greenhouse gas emissions by many multiples of this amount.
- Reducing regional congestion - The table below provides examples of four similarly sized urbanized areas in some of the fastest growing parts of the country. These are examples of the kind of places that will absorb our nation’s population growth over the coming decades. All four of these regions are currently emphasizing public transportation in their current long range planning efforts, but over the past several decades have taken very different approaches to investing in public transportation. Portland invested heavily in public transportation for a number of decades and supported this investment with its local land use policies. Seattle invested primarily in its bus system, supported with land use policies which provided many with access to public transportation. Atlanta invested heavily in public transportation, but did not focus, until recently, on supportive land use practices. Tampa has focused much less on public transportation investment, and consequently had little need to consider public transportation in its land use decisions. These variations in success show that significant and appropriate investments, together with supportive land use policies, can effectively influence public transportation’s ability to play a key role in the regional transportation system.

Role of Public transportation in Selected Urbanized Areas

Urbanized Area	Population	Regional Transit Trips/Capita	Emphasis on Transit
Portland	1.6 million	67 trips/capita	Light rail, bus, supportive land use policies
Seattle	2.7 million	58 trips/capita	Extensive bus/HOV/BRT network, commuter rail, constructing light rail, supportive land use policies
Atlanta	3.5 million	42 trips/capita	Heavy rail, extensive bus network, service varies in region, few transit supportive land use polices
Tampa	2.1 million	10 trips/capita	Planned light rail expansion, fixed route bus service, limited streetcar

Funding/Financing Strategies

The question was raised as to potential financing strategies and more specifically, to the potential share of private public transportation funding that we should expect over the long term. We expect that public transportation funding will continue to come from a mix of public and private sources. The proportion of each in that mix will depend on the policies adopted, especially at the federal level. Public funding will come from federal, state and local sources. Recent history has shown that growing the federal program has been quite effective in encouraging local and state investments in public transportation. Since 1990, total federal funding for public transportation has increased by 86 percent while total funding from other sources has increased by 129 percent. While we believe traditional sources of public revenue should be continued, we also recognizing that changes in technology or national policy goals may suggest the need for changes in funding mechanisms. As a specific example, should a carbon tax become a centerpiece of national climate change legislation, targeted funding from this source for public transportation would be appropriate.

Regarding private investments, our expectation, based on recent experience, is that the most significant private investment will come in the form of value capture. High-capacity transit service results in significant increases in the value of real estate in proximity to stations. The specific proportion of potential private contribution will vary from project to project, though recent domestic experience is limited. Internationally, cities such as Hong Kong have long used revenue generated from proximate real estate development to fund public transportation investment. We expect that here in the United States, this potential value will only increase as congestion in metropolitan areas creates a higher value for those living close to public transportation service. Research conducted by Bernard Weinstein and Terry Clower of the North Texas University concluded that the total value of new investment completed, underway or planned near Dallas light rail stations was \$3.3 billion as of 2005 and that property values in neighborhoods near light rail stations increased 25% greater than comparable neighborhoods elsewhere in the region.

Recent examples of project financing plans indicate that interest in private financing strategies is growing. An extension of the Washington, DC rail system is planned with a portion of the funding provided by a special corporate tax district established along the rail corridor for areas expected to benefit most directly. The taxing district is supported by area land owner as means to construct the much needed transit improvement. The Charlotte region is in the process of planning a new commuter rail line. The CATS Board recently approved further action to exploring funding using Tax Increment Financing. The Hudson Yards development district in New York City is expected to generate some \$2 billion in revenue to fund an extension of the #7 subway, captured through a tax increment financing district. The specific approach to capturing value increases resulting from public transportation investments varies from tax increment financing, to special taxing districts, to direct agency involvement in developing land adjacent to stations. Federal tax law could encourage a migration to a robust private sector leasing model.

Effect of Changes in Fuel Costs - Are we ready for \$4 or \$8 a gallon gasoline?

As a nation, we are not ready for a substantial increase in the price of fuel. This question raises a critical issue. The changing world economy, with rapidly developing economies in countries like China and India, is putting upward pressure on fuel prices around the world.

According to American Petroleum Institute, we import more than 60% of our petroleum, and 40% of the world's petroleum comes from OPEC member nations. In all likelihood, we will see a continued rise in fuel prices, with some potential for short-term price shocks as a result of political events or natural disasters in nations that serve as major suppliers. The combined reliance on imports and the unpredictable nature of future changes in energy prices does result in some vulnerability to our nation's transportation system and our economy. Public transportation plays a role in providing some redundancy and security in our national transportation system.

The existence value of public transportation service is quite significant. Imagine that political events in the Middle East or in other parts of the world result in a rapid spike in fuel prices or even create fuel shortages. While those living in major metropolitan areas have many alternative options for travel, the estimated half of our citizens without access to public transportation would face limitations in their ability to travel. While our current public transportation system would offer an alternative to some, the reality is that should prices rapidly escalate significantly, and demand for public transportation increase markedly, the current public transportation system in this country would not be able to absorb this demand.

Regarding the effect of fuel price increases on the demand for public transportation, many studies have speculated on the potential effect of significant changes in fuel prices on public transportation ridership, but we have not identified credible research that has been able to effectively isolate this effect. Historically, fuel has represented a small portion of the total cost of owning an automobile, but is often the most visible cost on a day to day basis. Consumers tend to respond more directly to changes in fuel costs, but these responses often lag and researchers have been challenged in their ability to isolate this effect. In many cases, it takes individuals an extended period of time to respond to changes in the price of fuel. Decisions on a housing location have lasting impacts on the demand for travel and even with significant increases in price; many individuals do not have other travel options. Fuel efficiency gains among personal vehicles have the potential to change the cost of travel, and potentially the demand for public transportation. We expect, however, that much of the technology that will be adopted by our nation's automakers will also be incorporated by public transportation vehicles. The effect will be reduced operating costs and more efficient service.

CONCLUSION: FEDERAL LEADERSHIP IS ESSENTIAL

With 100 million more Americans in 34 years requiring 70 million new housing units and 100 billion square feet of non-residential land use; with the over heating of the earth's atmosphere due to our over reliance and wasteful use of carbon fuels; with more than 60% of our petroleum coming from outside the U.S. and growing international competition for oil driving up prices (and costs) to record levels; with the transportation sector accounting for two-thirds of our petroleum use and creating one-third of the U.S. produced GHG, it is time for a change in direction.

Since the founding of the Republic, the federal government has had a leadership role in bringing about change in transportation. Whether it was encouraging the building of canals, the developing of great railroads, the interstate highway network, saving much of the nation's public transit service from extinction or developing the most comprehensive air transport network in the world, the federal government has had a leadership role and that leadership role must continue.

The states and cities may be the incubators of new ideas, but they usually remain of local interest until the federal government leads and encourages their wider adoption. When it comes to infrastructure, the private sector generally follows public policy and investment. The federal government needs to lead if we are to achieve our goal:

“In 2050 America is a thriving nation whose multi-modal, environmentally-responsive transportation system is the envy of the world.”