The Brookings Institution
Washington, DC

Transportation Reform Series

Center on Urban and Metropolitan Policy

Highways and Transit:
Leveling the Playing Field in Federal Transportation Policy

Edward Beimborn and Robert Puentes[1]

Federal transportation policy is essentially an unfair competition between highways and transit. Despite a number of reforms in the past decade, federal rules remain stacked against transit, and funding highway projects is far easier. This brief compares how new transit and highway programs are treated differently by federal legislation and policy and how those differences lead to an unlevel playing field, distorting good local planning, management, and decision making.

I. Introduction

Automobile trips dominate the way we travel. Conventional wisdom assumes that this is the result of a fair competition between all transportation modes operating under the same federal policies and rules.

However, the conventional wisdom is wrong. Federal policies that govern highway and transit projects are not the same. In fact, these two modes, which federal law specifically expects to work together in the development of a balanced multi-modal system, are treated differently. This unlevel playing field has profound impacts on metropolitan America and on how cities, older suburbs, and newer suburbs grow and develop.

Imagine that the urban, or metropolitan, portion of the interstate highway system was built according to the same procedures as those used or proposed to build major transit systems. The result would be:

Only 50 percent of the capital costs for major highways would be paid from federal sources rather than 80 or 90 percent. Cities would have to aggressively compete among one another for their highway funds based on the quality and justification of the proposed project. The rules for the competition would be subject to change without any input. Some states, cities, and metropolitan areas would never be able to build any highways even if there was a pervasive desire by the public and the local officials to do so. Only a few highway segments could begin construction in any year.

If major highways projects were built by the same rules as transit, highways would need a congressional "sponsor" who would secure an earmark by competing with other members for scarce funds. Cities unable to get an earmark would have fewer freeways. Local governments would have to demonstrate that they have sufficient funds to pay for their share of the costs of building the highways. They would also have to demonstrate that they would be able to operate and maintain these highways, as well as their existing highways, into the future.

A substantial portion of highway funding would likely have to come from local property taxes, local sales taxes, or local income taxes. Often there would be limited state contribution to the costs. In many instances, public referenda would have to be approved to get local authorization for project funding.

Also, highway projects would have to compete with police, fire, education, and other programs for funding. In times of budget shortages, highways could be closed completely or eliminated.

The highway would need to be justified on an explicit measure of cost effectiveness. Agencies would have to specifically state how they would manage the land use impacts of their highways. Finally, intensive mandated studies would have to precede the project and would be subject to an independent review by the federal government and an open comparison to other projects.

In short, if the rules that apply to new transit projects were applied to highways, highway construction would be very difficult and subject to intense political scrutiny and debate. There would be fewer urban and suburban highways and the shape of metropolitan areas in the United States would be radically different. Lifestyles of Americans, their mobility, and the health of the economy would be different from what we now have.

"Transit and highway systems are treated differently in federal policy, law, and regulations."

A common theme in transportation is that transportation decisions are best made by local elected officials at the metropolitan level. Decisions on the future form and nature of the transportation system are best made by those who are most affected and by those who have the best understanding of day-to-day transportation problems.[2]

Good local decisions require that various transportation options be compared equally and consistently on their merits. Local and metropolitan decision-makers should then be able to choose the best set or combination of transportation strategies that meet local views, values, and directions. Thus, local leaders should be able to pursue the best transportation alternatives for their communities, rather than the most easily funded and approved alternative.

Unfortunately, this has not been the case in national transportation policy. Transit and highway systems are treated differently in federal policy, law, and regulations. Local governments are faced with major difficulties in obtaining funds for new transit systems. At the same time, highway funding can be obtained with relative ease. This unlevel playing field can distort decisions at the local level.

This brief will discuss the policy and regulatory barriers to considering and implementing new transit projects, and the relative ease of highway development. Additionally, it will highlight the differences in the way new transit and highway programs are treated in federal legislation. Finally, it will suggest reforms to level the playing field between highways and transit as Congress debates reauthorization of the federal transportation laws.

II. Background

The decades from the 1950s to the early 1990s were halcyon days for highway planning and construction. During these years, through a massive expansion in the federal highway assistance, America built a 43,000 mile system of interstate highways: "the largest engineered structure in the world."[3] These highways literally changed the landscape of America.

The "Interstate Era", as it is commonly known, survived because of a broad consensus forged among transportation and political leaders united in the belief that the highway system was essential to the health and security of the nation. However, according to a Federal Highway Administration publication, by the end of the 1980s that consensus had all but disappeared.[4]

At the same time the interstate highway system was nearing completion, our nation's transit network had gone from a publicly regulated private industry to a public utility with its own demands for federal funding.[5] The federal transit program evolved from a relatively

low bureaucratic level at the Department of Commerce to the Department of Housing and Urban Development (HUD) in 1964, to the Department of Transportation in 1968 where it became the Urban Mass Transportation Administration (later renamed the Federal Transit Administration), an agency on bureaucratic par with the Federal Highway Administration but considerably smaller with much less funding.[6]

At the same time, the environmental movement began to directly challenge and question proponents of an expanded highway network. This movement, which was generally nonexistent in 1956, established new national commitments that were often at odds with builders of the interstate system. Faced with considerable backlash over urban freeway expansion, city leaders also began to establish their own set of transportation goals and policy priorities.[7]

As a result, federal policy began to shift, as well. One particular emphasis of federal transportation policy at this time was on promoting a level playing field for officials trying to wrestle with the challenge of creating a balanced, intermodal transportation network. A 1990 statement of national transportation policy specifically noted that subsidies, statutes, and regulations play an important part in distorting state and local transportation decisions.[8]

The congressional transportation reforms in the 1990s—the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 and its offspring the Transportation Equity Act for the 21st Century (TEA-21) in 1998—sought to address these distortions. For example, when ISTEA was drafted and debated, the concept of equal matching funds for highways and transit was widely endorsed.[9] In the end, these laws gave states and metropolitan areas the certainty in funding and the flexibility in program design necessary to attempt a range of transportation solutions. Spurred on by these reforms, a small but significant number of states and metropolitan areas began experimenting with transportation policies offering a more balanced mix between highway expansion and preservation, and between road building and transit expansion.

Among ISTEA's major reforms designed to bring more parity between highways and transit:

- **More even matching requirements.** In the decades prior to ISTEA, a given amount of non-Federal money could leverage more Federal highway dollars than it could transit dollars. Transit projects that were financed with urban system highway funds generally received a 75 percent federal share. The federal-aid urban system program was created in 1970 to address transportation problems in metropolitan areas by permitting the federal financing of urban highway and mass transit projects.[10] ISTEA's authors intended to remedy this disparity in previous federal law by setting the federal/state match ratio for most highway and transit projects at 80 percent federal and 20 percent state and local. ISTEA retained the 90/10 federal/state matching ratio for interstate projects. Certain traffic and safety programs had a 100 percent federal share.

- **Funding flexibility.** The "flexible funding" provisions of ISTEA and TEA-21 refer to the programs identified in the legislation whose funds may be used for transit or highway projects. The significance of these provisions cannot be overstated. The bill drafters intended to give planners and decision-makers at the state and local level the authority to transfer funds between highways and transit, with the direction of the transfers unspecified, but to be determined based on locally defined goals. Among other things, this freedom of financing has handed states and metropolitan planning organizations (MPOs), along with local political, corporate, civic, and constituency leaders, greater opportunity to tailor transportation spending to regional needs and market realities.

  To date the experience with this flexibility has been limited. The majority has occurred in one state (California) where one-third of their funds for FYs 1992–2001 were transferred from highway to transit projects. They were followed by New York with 16.5 percent, Pennsylvania at 6 percent, and Massachusetts and Illinois at 3.3 percent each. All of the remaining states were less than 3 percent with 27 states flexing

less than 1 percent of their eligible funds.[11] While this program appeared to provide opportunities for transit agencies and local areas to have more flexibility in how they spend their transportation dollars, the reality is that, except for a few notable exceptions, the process is hardly used by most states.

- **Major investment studies.** ISTEA also sought to balance the process by which metropolitan areas considered major new transportation investments. Prior to ISTEA, states and metropolitan areas wishing to use federal funds to construct new large scale transit systems were required to justify the project through a detailed analysis of alternatives and cost effectiveness in addition to the environmental review required by the National Environmental Protection Act (NEPA).[12] However, the playing field was unlevel as no such requirements were placed on new highway investments. Environmental impact studies for highways were often done after engineering started, and analysis of cost effectiveness was not done at all.[13]

  ISTEA specifically required the secretary of transportation to initiate a rulemaking proceeding to conform review requirements for transit projects to comparable requirements for highway projects. The resulting regulations required major investment studies (MIS) for any significant capital project that used federal funds. This generally included projects such as freeway or arterial widenings or expansions of more than one mile in length or new rail transit lines or extensions of more than one mile in length. The MIS was intended, through alternatives analysis with extensive public input, to determine the best transportation strategy for a given corridor. However, as discussed below, TEA-21 eliminated the MIS as a planning requirement.[14]

"Despite advances, federal rules remain stacked against transit."

Despite these advances initiated by ISTEA, federal rules remain stacked against transit. The next section discusses the specific federal regulations that set the unlevel playing field. It generally focuses on examples where rules and regulations exist, perhaps appropriately, on transit projects but do not exist for highway projects.

III. Federal Policies That Unlevel the Playing Field

Consider a city or region that wants to upgrade its transportation system. A proper analysis of needs and opportunities would consider all reasonable options in an evenhanded way. These would include both highway and transit options as well as policy changes. Costs of the alternatives should be thoroughly investigated as well as their impacts on land use patterns of the region. Furthermore, the community should think about environmental impacts of the alternatives and how they affect the future economy of the area. The community should be able to decide what is best based on consistent policies and programs that do not tilt the decision one way or another. Unfortunately this is not the reality. There are major differences on how highway and transit projects are funded and administered. In fact, two separate systems govern these two transportation modes.

Through the Federal Transit Administration (FTA), the U.S. DOT's program for identifying and funding new fixed guideway transit projects (e.g. rail, bus rapid transit, trolley, ferry), is referred to as the New Starts Program. These funds are housed in the FTA's Capital Investments Grant and Loan Program, which is also referred to by its U.S. Code Section: 5309. In addition to the New Starts program (which constitutes 40 percent of the capital program), Section 5309 also provides assistance for rail modernization (40 percent) and bus and bus facilities (20 percent).[15]

Since the New Starts program is the way the federal government funds new transit projects, it is the primary transit program highlighted in this brief. The New Starts program is used to provide discretionary financial assistance and has been used to expand or initiate hundreds of heavy rail, light rail, commuter rail, and bus rapid transit systems which cannot be funded with formula, flexible, or local funds. It is intended to supplement the transit formula programs which are not funded at a high enough level to allow metropolitan areas

Table 1. Comparison of Rules Governing Federal Transit and Highway Programs

	Transit (New Starts)	Highway
A. Federal Funding	• Current federal law authorizes as much as an 80 percent federal share. FTA practice is to recommend only projects with a maximum 60 percent federal share, in accord with congressional appropriations committee direction. The Bush administration has proposed a 50 percent or less match in SAFETEA. • New Start money is highly competitive. • Non-federal funds are typically local; sources vary, compete with other programs, and may require referenda.	• Federal match is 80–90 percent depending on program. • Program funds are allocated by formula. • State funds are derived mainly from fuel and license fess. Normally a dedicated fund that cannot be used for non transportation purposes.[17]
B. Project Criteria and Justification	• Extensive list including cost effectiveness and land use impacts and financial plan.	• Primarily environmental measures, no requirement for cost effectiveness or land use analysis.
C. Land Use Impacts	• "Transit supportive land use patterns" is a key project selection criterion.	• Land use impacts of projects not considered.
D. Performance Evaluation	• Peer comparison is mandatory and reported to Congress. • There is a detailed process used to compare alternative projects.	• Peer comparison is rare. • Alternative comparisons are optional at state level.
E. Information Transparency and Accessibility	• Information and data is publicly accessible and transparent.	• Information and data is difficult to access and unclear for the general public.

to fund major fixed guideway investments. The term 'new starts' is a bit of a misnomer since it includes both expansions of existing systems as well the initiation of totally new transit technologies within metropolitan areas.

It is important to highlight this program in order to illustrate how unlevel federal transportation policies can skew local, metropolitan, and state investment decisions. Every metropolitan area already has an important and extensive highway network. However, the process of building, widening or extending this network is fundamentally different that doing the same to a transit system. For one thing, states do not seek permission to build highway projects. In fact, the U.S. Code states specifically that the appropriation of highway funds "shall in no way infringe on the sovereign rights of the States to determine which projects shall be federally financed."[16] This is dramatically different from the ability of areas contemplating new fixed guideway systems which are prevented from spending federal funds on these projects unless they comply with rigorous federal requirements, as discussed below.

This section will provide a comparison of how highway and transit programs—especially New Starts—are treated differently by federal legislation and policy and how those differences lead to an unlevel playing field, distorting good local planning, management, and decision making.

A. Federal Funding

In general, federal funding for highway projects is more secure and generous than for transit projects; making highway projects easier to finance.

As mentioned, the primary financial source for federal support of new transit systems is the New Starts program. TEA-21 authorized $8.2 billion in New Starts funding through fiscal year 2003 which is about 20 percent of the $41 billion for all FTA programs. It is important to note that only $6.1 billion was "guaranteed," and Congress has not provided any non-guaranteed funding for New Starts. Formula grants, which can be used for some capital investments (such as equipment and rolling stock, as well as planning, design, and evaluation work) but not solely construction of major new systems or extensions, made up about half of all transit funding (See Appendix).[18]

The New Starts program is totally discretionary and is highly regulated by the U.S. DOT. According to the GAO, the New Starts funding is oversubscribed and, as a result, competition for these funds is intense.[19] Projects must progress through a regional review of alternatives, develop preliminary engineering plans, and meet FTA's approval for final design before final approval is given and the project is recommended for a multi-year full funding grant agreement (FFGA).[20] It is not unusual for projects to go on and on for many years to overcome each barrier and step. In TEA-21 Congress authorized nearly 200 separate transit projects, but very few of them will actually be built since the expenditure levels authorized were far less than required to fund them all.[21] It is important to note that the FFGA serves as a commitment of federal funds, however, each project's share of federal funds is subject to the annual congressional appropriations process.

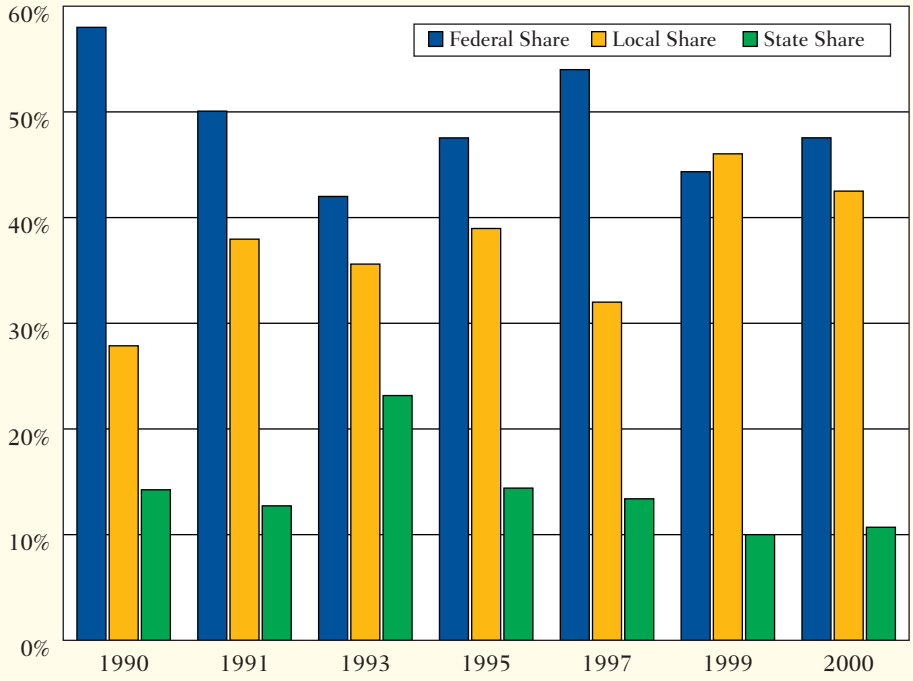
Highway funds, on the other hand, are not competitive and do not require congressional earmarks. Receipts in the highway account of the federal highway trust fund are distributed to states based on "allocation formulas," which differ somewhat from one federal program to another. Once funds are allocated, the states can distribute them among projects as they see fit. Federal oversight is limited only to ensure that they comply with federal guidelines and accepted design standards. This reduces the complexity and difficulty of the process of developing projects. With an assured source of funding, projects can be planned and implemented over time without concern about how they compare to projects in other states.

Another inequity remains in terms of the total percentage of project costs the federal government is willing to contribute to highway and transit projects. As mentioned, ISTEA maintained an 80 percent funding ratio for formula and other discretionary programs but capped funding rates for transit New Starts at up to 80 per cent of total project costs. But in reality, actual funding rates are much lower. Congress recently directed the FTA not to approve New Starts projects with more than a 60 percent federal share.[22] In addition, the Bush administration's FY 2004 budget reaffirms an earlier recommendation to reduce the federal match to 50 percent beginning in 2004.[23] In contrast, highway funding continues to enjoy a federal matching ratio of 90 percent for improvements and maintenance on the interstate highway system and an 80 percent rate for most other projects. The Bush administration proposes that this ratio be at similar levels in the next reauthorization bill.[24]

Furthermore, the high federal match results in inefficient use of highway dollars. States often use state funds for their matching portion of highway projects with little or no funding required from the local area.[25] Local officials sometimes view these projects as 'free money' and eagerly seek to implement them. It is often tempting to load up the projects with costs and features that may not be needed, but are easily accommodated when someone else is paying the cost. This can lead to inefficient use of federal resources and a failure to provide good stewardship for federal investments in highways.

In contrast, costs for most transit projects must be kept low since local sources of revenue must be identified and commitments for operating costs and local shares of capital costs must be provided as a key project justification criterion. In the last year for which data is available, federal funds provided 47.2 percent of the capital funds used by transit agencies while state sources provided 10.7 percent and local sources provided 42.0 per-

Figure 1. Sources of Funds for Transit Capital Expenditures 1990–2000



Source: "Status of the Nation's Highways, Bridges and Transit: 2002 Conditions and Performance", U.S. Department of Transportation, http://www.fhwa.dot.gov/policy/2002cpr/ chapter 6., Exhibit 6–27.

cent. It is important to note that at this time, the federal allowable share for all FTA capital projects was still at least 80 percent (Figure 1).

Local funds for transit services come from a variety of sources, depending on the community. Commonly used sources are sales taxes dedicated to transit, local income taxes, fuel taxes or property taxes. In many cases the transit agency competes for these funds with other local needs such as education, health care, police, or fire protection. In places where the transit systems receive money from their state government, this can also come from a variety of sources: dedicated portions of a transportation fund or though state general purpose revenue sources such as income tax or sales taxes.[26] Here again, the transit agency has to compete with other state expenditure programs for funding.

When a city contemplates a major new transit investment, they may need to put together a financial package that is subject to voter approval. These may involve new sources of taxation such as a local sales tax, fuel tax, income tax, or property tax assessments. These referenda can often be highly contentious and there are many cases where communities have gone to the voters several times to gain approval.[27]

The end result of these funding inequities is that in some cases they can lead to skewed investment decisions. A recent GAO report confirmed this when it found that the imbalance between the federal highway and transit match, in particular, could "bias the local decision making process in favor of highway projects."[28] This conclusion was drawn from interviews the GAO conducted with project sponsors and those responsible for planning and programming transportation dollars.

"The end result of these funding inequities is that they can lead to skewed investment decisions."

Table 2. Federal Transit Administration New Starts Project Justification Criteria

Criteria	Measure(s)
Mobility Improvements	• Hours of transportation system user benefits • Low-income households served • Employment near stations
Environmental Benefits	• Change in regional pollutant emissions • Change in regional energy consumption • EPA air quality designation
Operating Efficiencies	• Operating cost per passenger mile
Cost Effectiveness	• Incremental cost per hour of transportation system user benefit
Transit Supportive Land Use and Future Patterns	• Existing land use • Transit supportive plans and policies • Performance and impacts of policies • Other land use considerations
Other Factors	• Project benefits not reflected by other New Starts criteria

Source: Federal Transit Administration, "Planning, Project Development, and Funding for New Starts Projects." http://www.fta.dot.gov/library/policy/ns/

B. Project Criteria and Justification

Unlike highway projects, new fixed guideway transit projects are subject to intense federal oversight and multiple project criteria and justifications.

TEA-21 directs FTA to evaluate and rate candidate New Starts projects as an input to Federal funding decisions and at specific milestones throughout each project's planning and development. FTA requires that a comprehensive planning and project development process be used to assist local decision-makers in the evaluation of alternatives in specified corridors and to select the most appropriate improvement for the corridor. Planning and project development for New Starts projects is coordinated with metropolitan planning and NEPA review processes.

New Start proposals must undergo a comprehensive multiyear planning process subject to detailed regulations from the FTA. Besides the consideration of environmental impacts, New Starts must be reviewed on the basis of their impacts on employment, operating efficiency, cost effectiveness, land use policies and level of local funding commitment.[29] For example, projects are judged on their ability to serve low income households, their ability to generate employment near transit stations, and how well the agency has implemented polices to lead to transit supportive development patterns. It is important to note that these criteria are broad and reach well beyond the transportation system itself. They do not subscribe to the belief that a transit project should be judged simply on its ability to reduce or solve a metropolitan area's congestion problems (Table 2).

In addition, projects are subject to a rigorous cost effectiveness process to determine the performance of the federal transit investment in terms of the incremental project cost divided by transportation system user benefits. User benefits consist of weighted travel time savings as determined by advanced travel forecasting models. FTA regulations are very extensive and provide very specific financial analysis techniques and assumptions and provide a way to consistently compare projects between locations.[30] Complying with these regulations can take several years of intense study often costing millions of dollars.

The cost effectiveness criteria are used to demonstrate that a project will attract new ridership and those riders will benefit in terms of time, cost, and convenience savings. This allows FTA to compare projects between communities and to assure that chosen projects give the greatest return on federal investment. The House Appropriations Committee went further in its FY 2004 transportation bill by saying specifically that the federal government should allocate transportation dollars in a manner that maximizes benefits relative to costs and that the FTA should "develop more stringent measures by which to rate New Starts projects."[31]

Without a doubt, these factors make for better transit projects. Agencies proposing projects are forced to think of how their projects will make better communities. The process of doing this is long and arduous. It requires an active planning process with participation of many groups and interests with active political champions who often stake their careers on a project.

In sharp contrast, the level of analysis required for highway expansion or the construction of new facilities is less stringent. Highway projects need to consider environmental impacts in order to comply with the NEPA if they are determined to "significantly affect the environment."[32] In that case, an environmental impact statement or assessment is needed. The statements deal with issues such as noise and air quality effects, impacts on natural areas such as wetlands, and other ecosystem impacts but the scope of the project and criteria considered often stops there.[33] Seldom is there any attempt to deal with issues such as local employment impacts, services to low income neighborhoods, or land use policy.

Cost effectiveness analysis is used only to a limited extent and been applied unevenly to highway programs. While some agencies attempt to produce cost/benefit analysis for highway projects, others ignore this and propose and implement projects that have not had a cost effectiveness test. Projects are chosen in a convoluted process that can be highly political and is often inefficient.

However, benefit-cost analysis has been advocated for highway projects for years. In 1977, the American Association of State Highway and Transportation Officials published a guide on conducting benefit-cost analysis for highways and other transportation projects.[34] Other textbooks, research reports, and publications discuss the importance of analyzing highway projects using benefit-cost techniques. Yet, as long as localities are able to purchase local benefits with state and federal funds, local governments have incentives to overstate highway project benefits and understate costs.

ISTEA established the Major Investment Study (MIS) process to provide a sound basis for reaching major investment decisions in metropolitan areas by requiring a comprehensive analysis of all reasonable alternatives for addressing a transportation problem. ISTEA's metropolitan planning regulations required MIS's to be undertaken to evaluate the effectiveness and cost-effectiveness of alternative investments or strategies in attaining local, state, and national goals and objectives. The MIS analysis considered the benefits and costs of investments related to such factors as mobility improvements, social, economic, and environmental effects, safety, operating efficiencies, land use and economic development, financing, and energy consumption.[35] However, TEA-21 eliminated the MIS as a way to determine benefits and costs of major transportation investments. But the playing field was left unlevel since major transit investments seeking New Starts funding are still required to go through FTA's requirements for an alternatives analysis, which are very similar to the MIS requirements under ISTEA. Similar analysis requirements do not apply to highway projects.

Highways and transit projects are inherently different in what is perceived as benefits and costs, yet there is much that could be learned if highway projects were subject to similar criteria. Wise investment of highway funds should include a concern about what will be gained for the money expended. Hence, decision-makers and citizens would benefit from transit-like review of highway projects.

C. Land Use Considerations

The relationship between land use and transportation is a fundamental concern in transportation policy. Everything that happens to land use has transportation implications and every transportation action affects land use. Actions by transportation agencies shape land

"Local areas proposing major investments in transit are required to analyze land use impacts and to take proactive steps to assure that transit investment is coordinated with land use."

use by providing infrastructure to improve accessibility and mobility. This increases the utility of land and leads to more intensive land use. Land development generates travel, and travel generates the need for new facilities, which in turn increases accessibility and attracts further development. The question of whether transportation influences development or whether land use dictates transportation has been a matter of ongoing concern among transportation professionals since the beginning of transportation planning.[36]

Much has been written in recent years about urban sprawl, new urbanism, transit-oriented development, smart growth, and other ways to bring about a closer tie between land use and transportation. A comprehensive review of literature related to urban sprawl and its effects concluded that there is a general agreement in the literature that sprawl leads to more vehicle miles of travel, more automobile trips, and less cost-effective transit services.[37] There was also some agreement that sprawl means higher household costs of travel and greater social costs.

These principles have been well recognized by the FTA in their guidelines for New Starts and alternatives analysis. Local areas proposing major investments in transit are required to analyze land use impacts and to take proactive steps to assure that transit investment is coordinated with land use. This is done to get a good return on federal investment by integrating transit service with economic development and residential activity.

Land use rightly is a local responsibility and it is appropriate that federal and state agencies defer to local governments on land use decisions. As mentioned, federal criteria require that transit projects be rated based on if they have transit supportive land use plans and policies and the impacts of those policies. These requirements can be challenging for a transit agency that must address land use considerations beyond their control. This is especially true with regard to commuter rail projects operating in suburban communities with caps on residential or commercial densities. Nevertheless, the connection between land use and transportation is of paramount importance, and it is useful for transit agencies and local government to address these issues collaboratively.

No such land use provision exists for highway investments. Highways can have a profound impact on the pace and shape of metropolitan growth. Highway spending helps define the boundaries of metropolitan areas, determining where households and firms can locate. In many metropolitan areas, transportation policies generally support the expansion of road capacity at the fringe of metropolitan areas and beyond, enabling people and businesses to settle miles from urban centers but still benefit from metropolitan life. The spatial implications of these investments cannot be underestimated.

Highway projects often lead to development activities that generate traffic that negates the value and performance of highway improvements. Highways designed to move traffic efficiently become snarled with local traffic needing to turn in and out of developments along the highway. If these are poorly planned, there are excessive vehicle conflicts, congestion, and safety hazards. The money spent for these projects is wasted as traffic builds up and creates a new set of problems that will require more spending. Furthermore, shifts in development from one part of a city to another can lead to wasted infrastructure and loss of jobs and economic activity elsewhere. Highway projects need to consider how they will affect land use.

Local governments need to provide good stewardship of their transportation assets. Tools such as access management interchange area planning and better coordination between government units can make a difference in protecting highway investments. For example access management provides a way to control the number and type of access points on major roads to help traffic flow better and safer, but its use is scattered across the country with no common federal policy or guidelines. There are no requirements that local governments consider land use effects for federal highway dollars, but it is an essential part of new transit investments. Highway programs could benefit substantially if local and state agencies were asked to show how they will protect the investment by better interface with land use.

D. Performance Evaluation

Furthermore, while transit agencies follow useful and important reporting and evaluation guidelines for their projects and systems, highway agencies have less effective procedures.

Beyond just New Starts projects, transit operators are required to submit annual reports of their performance, effectiveness and cost effectiveness to the FTA as part of the Uniform System of Accounts for use in the National Transit Database (NTD, formerly section 15) requirements for continued federal funding. Transit agencies are very diverse and to provide consistent data, all agencies must meet the same accounting and reporting requirements.[38] Each year, almost 600 transit operators report to FTA on transit activities in more than 400 urbanized areas. Nationally, 85,000 transit vehicles, 7,000 miles of rail track, 2,000 rail stations, and 1,000 maintenance facilities are included in these reports. The NTD, as the repository for this information, serves as the primary tool to support transit operational and financial decision making on a national level.

The NTD provides a comprehensive source of transit data and is used to support federal, state, and local public investment decisions. NTD data is used to apportion FTA funding among urbanized areas, according to legislatively-mandated formulas. Further, data is used at various levels of government to guide policy development, to assist in establishing national priorities, and to shape public planning and strategic decision making efforts. For example, the database has been recently changed to provide better reporting of safety and security information.[39]

This process allows transit agencies to use a consistent data set and to compare their performance with peer agencies and to track trends over time. Agencies can quickly determine if their performance is getting better or worse and to see how they are doing in comparison to similar agencies. This is an unquestionably useful procedure that leads to better management of transit systems.

Highway agencies have a different process. The Highway Performance Monitoring System (HPMS) provides data that reflects the extent, condition, performance, use, and operating characteristics of the Nation's highways. It was developed in 1978 as a national highway transportation system database. It includes limited data on all public roads, more detailed data for a sample of the arterial and collector functional systems, and certain statewide summary information. The HPMS includes a statistically drawn sample of over 100,000 highway sections containing data on current physical and operating characteristics as well as projections of future travel growth on a section-by-section basis.[40]

While the HPMS has data similar to the NTD, its use for evaluation of highway programs in relation to other peer agencies is only just beginning. Work has been done outside the U.S. DOT that compares states to each other and documents trends over time.[41] This process is controversial and some state and local agencies are reluctant to compare their performance to other agencies. Consistencies among data and collection methods vary between agencies and many agencies feel that they are 'unique' and cannot be compared to others.[42] Comparisons between highway agency performances are difficult and require extensive effort to gather data from diverse sources. Transit agency peer comparisons are very easy, with consistent reports readily available on the internet. The difference between the state of the art and attitudes towards use of information leads to a different set of rules for transit and for highway systems. This process is a useful one for transportation decision making and should be applied equally to both modes.

E. Information Transparency and Accessibility

Finally, transit agencies must regularly disclose transit spending and other data, or risk losing funding. Highway spending statistics, on the other hand, are more difficult to access and interpret.

Transit agency profiles are developed from the NTD which show transit system characteristics on a uniform basis as well as performance measures and measures of effectiveness for services and costs.[43] These profiles are updated yearly for every transit agency in the nation and posted on the internet in a clear format that is easy to read and understand by

the general public. The requirements for the NTD are codified in federal law and receipt of certain transit funds is directly tied to compliance. Transit agencies risk the loss of section 5307, urbanized area funds if they do not comply with the NTD reporting requirements.[44]

Extensive and detailed data collected by the FHWA, on the other hand, is not accessible by the general public over the internet, nor is it presented in a format intended to be digested by the general public. Indeed, the HPMS is a principal source of the data used to develop the annual *Highway Statistics* publications by FHWA as well as the *Conditions and Performance Report* to Congress, which are available over the internet. However, a stated objective of the HPMS that the database itself will be "publicly accessible" and that the FHWA would make access to the HPMS database available over the internet "in the short term", but it has not yet done so.[45]

The FHWA also maintains a Fiscal Management Information System (FMIS) which is a financial database of all highway projects that have been financed using federal funds. However, even though the FMIS has been in place since the early days of the Interstate era, published information on spending by recipient and program is limited and often several years behind. The raw FMIS data used to produce much of the quantitative analysis in this report is difficult to work with, and is not available on the World Wide Web.

The end result is that it is very difficult to determine actual spending of federal transportation dollars for roadway projects. The federal government leaves it up to the states to build and maintain the nation's roadway network but do not require states to provide the public with detailed information about state investment decisions using those funds. It continues to be easier for the general public to determine where private institutions like banks and thrifts make investments, (thanks to the federal Home Mortgage Disclosure Act) and to hold these institutions accountable, than to know how transportation agencies spend their money.

Clearly, highways and transit are operating on an unlevel playing field in terms of federal transportation policy. What is not as clear, though intuitive, is whether these policies have resulted in any fewer transit projects than would have been built if policies were more balanced. This section examines the recent discussion in one metropolitan area—Milwaukee—to illustrate how policies can skew investment decisions on the state and local levels.

IV. Milwaukee Metropolitan Area Case Study

Milwaukee seemed like a logical choice for a new transit start. The city has areas of high density with mixed uses that were developed around a strong bus transit system and seemed like a natural for rail transit service. Jennifer Dorn, the FTA administrator, stated in a recent speech during a visit there that Milwaukee had sufficient population density to support rail transit.[46]

And unlike many other cities and metropolitan areas, Milwaukee remains fairly "centralized" in terms of metropolitan employment location. Nearly two-thirds of the jobs are within ten miles of the central business district and over 20 percent are within three miles.[47] Overall, the city did lose residents during the 1990s, but the downtown area saw a slight increase in population as well as an increase in density.[48]

The metropolitan area also had a strong, visible champion of rail transit in Milwaukee Mayor John Norquist. In the early 1990's Mayor Norquist founded the Alliance for Future Transit in Milwaukee, a business organization designed to promote light rail transit in the area. The transit agency in the area, Milwaukee County Transit System (MCTS), was the 25th largest transit bus agency in the nation in 2001 with a good fare recovery rate: (34 percent of the agency's operating expenses came from passenger fares in 2001). It also had a solid management that was ready to run a system in coordination with a good bus services to its community. MCTS received the Outstanding Achievement Award - the highest award a transit agency can receive—by the American Public Transportation Association in both 1987 and in 1999.[49]

Furthermore, the area had an inside track to federal funding by the set aside of nearly $300 million dollars of ICE (interstate cost estimate) funds to be used for a new transit system for the area. This funding was explicitly set aside in the ISTEA legislation for transit purposes in the Milwaukee area.

Work on fixed guideway transit planning in Milwaukee has a long and complex history. The metropolitan planning organization (MPO), the Southeastern Wisconsin Planning Commission, included major transit corridors as part of its long-range transportation plan for the region. The most significant effort in this regard was the Milwaukee East-West Corridor Study conducted during the mid-1990s. The corridor included a regional medical center, two large universities, a major league baseball stadium, Milwaukee's downtown and festival grounds, high rise housing units and neighborhood shopping centers. This Corridor was earmarked in TEA-21 as one of 114 new rail projects to begin construction by 2003.

The study cost millions of dollars, included hundreds of meetings and involved over 5 years of effort. This study was done following FTA procedures and produced 29 technical reports that fill up an entire bookshelf. All aspects of the alternatives were studied—impacts on air, noise, flooding, parks, wetlands, historic areas, properties, businesses, economic development and natural areas as well as costs, ridership potential and policies to enhance land use around transit stops. In addition, extensive public meetings were held to define the project scope and to get reactions to the alternatives.

The study eventually resulted in a 430-page 'working draft' of a Major Investment Study/Draft Environmental Impact Study. This was issued for preliminary comments and reaction prior to an 'official' draft EIS. This report described multiple alternatives of different light rail or bus system alignments to be built in the area and included 21 letters from federal, state and local agencies and the private sector on the project. Several of the most promising transit technologies were featured and designed to address freeway capacity, serve low income neighborhoods, and provide a focus for high density urban development.[50]

However, the official draft environmental impact statement was never issued, and the process was officially terminated by the FHWA in 2000.[51] These reports now gather dust as they sit on the shelves of the planners who worked on them. The project is all but dead in the water with just $91.5 million left of $289 million that was appropriated in 1991.

What happened? How could a process be so close to reaching a conclusion and then be cast aside? What value was there to spend so much time and money by so many people to do all those complicated studies and to have it all come for naught? Opinions differ, but the process eventually fell apart on the issue of money and differences in federal funding policies for highways and transit. According to the FTA, the result was a lack of local consensus on funding options.[52]

A key issue was how to pay for the local share of the project. Transit in the Milwaukee area uses state transportation dollars and local funds for its non-federal costs. Local funds come from the property tax and must compete with other government services for funds. Property taxes are high in Wisconsin and local elected officials advocate increases at their political peril. In 1994, advisory referenda on the transit corridor project were voted down in five suburban communities. According to polls, most residents supported light rail and thought it would be reliable, provide environmental benefits, and help low-income people get to work. However, a majority also considered it to be too expensive.[53]

Wisconsin Department of Transportation officials said there was no state money to be used for the non-federal share of a light rail transit project, but that it could be used for a highway project.[54] Money was available for highways, but not for transit. Faced with no state funds, conflicts arose between central city and suburban state legislators and local officials over who should pay the local share. Outlying suburban municipalities went on record opposing the project despite reports that showed a light rail system would not only contribute significantly to economic development in the city of Milwaukee—but would provide such benefits to the entire region.[55] No consensus or agreement could be reached. Eventually state legislators prohibited any expenditure to even study the issue of light rail in the Milwaukee area, thus ending the process.[56]

Meanwhile, a highway study has been completed recommending a $6.23 billion dollar plan to expand and reconstruct the regional freeway system—more than ten times the cost of the transit corridor project. Documents associated with the plan tout the fact that funding for the project will be the responsibility of the state (10–20 percent) and the federal government (80–90 percent) with no local funding.[57] This study has been adopted by the regional planning commission and endorsed by six of seven county boards (Milwaukee County being the exception) and written into state legislation.

Faced with a choice of no local costs for highways and substantial local costs for transit, the decision was easy, but it may not have been the best. No one knows what localities in the Milwaukee metropolitan area would have done if the rules governing new transit and highway projects were the same and the playing field was level.

V. Recommendations

As Congress debates and deliberates the reauthorization of TEA-21, it should build upon the reforms solidified in ISTEA to level the playing field between highway and transit projects in order for officials to make sound investment decisions based on metropolitan and local goals and objectives, rather than skewed federal policies. In view of that, Congress should consider the following policy recommendations to ensure transportation investments meet the modern challenges facing metropolitan areas.

First, elements of the federal policies that govern transit investments can be used to benefit highway programs and to help protect federal highway investments. In particular the following should be pursued:

- **The land use requirements of FTA New Starts guidelines should be applied to highway projects that propose a substantial increase in capacity.** These criteria look at how transportation interacts with land use. Highways have a major impact on land use and these effects should be considered, if for no other reason than to protect the federal investments from being eroded by poor land use programs and polices at the local level. The federal government will only support transit projects where local land use policies provide for efficient development patterns. Decision-makers should similarly consider how highway projects reward past inefficient land use patterns. In any case, local and state governments should be explicitly required to deal with the land use impacts of their projects.

- **Cost-effectiveness procedures for highways should be improved.** Replacement and upgrading of existing highway infrastructure will require enormous sums of money, particularly in urban areas with aging freeway systems. This money should be spent efficiently and wisely. There needs to be a substantial improvement in the process used to assess the cost effectiveness of highway projects. Federal funds for highways should be directed to projects where there is a clear demonstration that they will return value for money, the same as with transit projects.

- **Improvements in data systems to permit better performance evaluation and peer comparisons for highway programs should be developed and implemented.** This will allow highway agencies to better manage their systems and to more quickly find best practices in other locations that can be used to increase their program effectiveness.

By the same token, federal transit policies should be modified to make the process easier and more predictable for communities—and more level with existing policies for highways. The following should be pursued:

- **Disparities in the federal match ratios need to be addressed.** The disproportion between the 50 percent federal match for transit and the 80 percent match for high-

ways is far too dramatic to ensure proper local decisions. A community should not be faced with a choice between a transit project that requires new sources of local funds and a highway project where the balance of funds is from state, and not local, sources. The 80 percent federal match for transit New Starts should be reestablished. Congress should also consider increasing the amount of funding in the New Starts program to respond to escalating demand.

- **Differentiate between New Starts and extensions of systems.** The full New Start review process should be used only in places where a totally new system is being considered. Its use for extensions of existing systems is too cumbersome and could be simplified. Extensions should continue to be eligible for funding, but a more streamlined process should apply.

- **Amend the federal law to create a new program for "small starts".** Given the interest in many metropolitan areas in relatively low cost transit projects, federal law should be amended to accommodate and expedite such small projects without the need for extensive and time consuming analysis procedures. Current law exempts projects with less than $25 million in federal funds from some evaluation criteria. This should be expanded to projects seeking less than $100 million and include transit technologies such as bus rapid transit, streetcars and commuter rail, as well as extensions to existing systems.

VI. Conclusion

Highway projects and new transit projects are treated very differently in federal legislation and policy. This results in a double standard with a relatively easy process for highway development and a difficult and complex process for transit. When compared to highways, transit New Starts have a lower funding rate for capital projects, intense competition between areas for funding, no secure sources of non-federal funding and a complex and convoluted process for project approval. Furthermore, transit New Starts are required to demonstrate how they will be compatible with local land use, employment and low income community needs and transit agencies are subject to accounting and financial reporting systems that enable peer comparisons with other agencies.

Congress and the administration must take the bias out of federal transportation policy so that true local decision making on transportation alternatives can be made. The rules of the transportation game should not be pre-set inside Washington. Instead, a level playing field between transit and highways, based on the best mix of both programs can truly empower localities to do what is best for their metropolitan areas. At the same time, it would improve program accountability and funding efficiency is our nation's transportation program.

"Congress and the administration must take the bias out of federal transportation policy so that true local decision making on transportation alternatives can be made."

Appendix

Federal Transit and Federal Highway Programs, Purpose, Federal Share and Authorized Funding Levels.

Federal Transit Programs

APPROPRIATION/ PROGRAM	PROGRAM PURPOSE/ EXPENSES	FEDERAL SHARE	TEA-21 FUNDING (in $ millions)	PERCENT OF TRANSIT PROGRAM
Urbanized Area Formula (Section 5307)	Capital, planning, preventive maintenance, crime and security prevention, facilities and rolling stock, ADA paratransit, transit enhancements for urbanized areas.	80%; 90% for ADA or Clean Air Act purchases	18,033.8	44.0%
New Starts Discretionary (Section 5309)	Capital projects for new fixed guideway systems, and extensions to existing systems, including property and right-of-way acquisition, initial acquisition of rolling stock, alternatives analysis.	80% in federal law, 60% in Congressional report language, 50% as proposed by the Bush administration	8,182.4	20.0%
Fixed Guideway Modernization Discretionary (Section 5309)	Capital projects to modernize existing fixed guideway systems	80%	6,592.4	16.1%
Bus and Bus Related Discretionary (Section 5309)	Capital projects to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities.	80%	3,546.2	8.7%
Other formula grants	Includes Alaska Railroad, elderly & persons with disabilities, and rural transit formulas.	Generally 80%–100%; rural area operating expenses: 50%	2,440.2	6.0%
Transit Planning and Research	Metropolitan, state and national planning and research, rural transit assistance, and cooperative research.	Generally 80%–100%	1,013.0	2.5%
Job Access and Reverse Commute	Competitive grants to develop services to connect welfare recipients and low-income persons to employment and support services. Eligible expenses include capital, operating and maintenance.	50%	750.0	1.8%
Administration			441.7	1.1%
FEDERAL TRANSIT ADMINISTRATION TOTAL			**40,999.7**	**100.0%**

Federal Highway Programs

Surface Transportation Program	Flexible funding that may be used by states and localities for projects on any Federal-aid highway bridge projects on any public road, transit capital projects, and intracity and intercity bus terminals and facilities.	80%	33,332.7	19.5%
National Highway System	Improvements to rural and urban roads that are part of the NHS, including the Interstate System and designated connections to major intermodal terminals.	80% (100% for Alaska and territorial highways)	28,571.1	16.7%
Interstate Maintenance Program	Resurfacing, restoring, rehabilitating and reconstructing most routes on the Interstate System.	90%	23,809.6	13.9%
Bridge Program	Replace or rehabilitate deficient highway bridges and to seismic retrofit bridges located on any public road.	80%	20,430.4	11.9%

APPROPRIATION/ PROGRAM	PROGRAM PURPOSE/ EXPENSES	FEDERAL SHARE	TEA-21 FUNDING (in $ millions)	PERCENT OF TRANSIT PROGRAM
High Priority Projects	Any project eligible for Federal funds defined as demonstration projects in TEA-21.	80%	9,359.9	5.5%
Congestion Mitigation and Air Quality	Funds projects and programs in air quality nonattainment and maintenance areas for ozone, carbon monoxide and small particulate matter that reduce transportation related emissions	80%	8,122.6	4.7%
Federal Lands Highway	Funding for a coordinated program of public roads and transit facilities serving Federal and Indian lands.	100%	4,066.0	2.4%
Appalachian Development Highway System	Construction of the Appalachian corridor highways in 13 States to promote economic development.	80%	2,250.0	1.3%
Magnetic Levitation Transportation Technology Deployment Program	Construction of an operating transportation system employing magnetic levitation.	66%	1,010.0	0.6%
Woodrow Wilson Bridge	Design and construction of a new bridge where Interstate 95 crosses the Potomac River.	80–100%	900.0	0.5%
Corridor and Border Planning	Coordinated planning, design, and construction of corridors of national significance, economic growth, and international or interregional trade.	80%	700.0	0.4%
Recreational Trails	Develop and maintain recreational trails for motorized and nonmotorized recreational trail users.	80%	270.0	0.2%
Ferry Boats and Ferry Facilities	Construction of ferry boats and ferry terminal facilities.	80%	220.0	0.1%
Scenic Byways	Supports and provides discretionary grants for planning, designing and developing scenic byway projects.	80%	148.0	0.1%
Transportation System and Community Preservation	Planning grants, implementation grants, and research to investigate and address the relationships between transportation and community and system preservation.	100%	120.0	0.1%
Value Pricing	Support the costs of implementing value pricing projects.	80%	51.0	<0.1%
Historic Covered Bridge	Rehabilitate or repair and to preserve the Nation's historic covered bridges.	80%	50.0	<0.1%
Highway Use Tax Evasion	State and Federal efforts to enhance motor fuel tax enforcement.	100%	35.0	<0.1%
Minimum Guarantee	Funding to States based on equity considerations. Administered as STP funds.	80%	35,119.3	20.5%
Other	Includes Puerto Rico highway program, railroad grade program, and safety programs.		2,543.0	1.5%
FEDERAL AID HIGHWAYS TOTAL			**171,108.4**	**100.0%**

Source: Surface Transportation Policy Project, "TEA-21 User's Guide," (Washington, 1998); Federal Highway Administration, "Financing Federal Aid Highways," FHWA-PL-99-015 (1999)

Endnotes

1. Edward Beimborn is Director of the Center for Urban Transportation Studies, University of Wisconsin-Milwaukee. Robert Puentes is senior research manager at the Brookings Institution Center on Urban and Metropolitan Policy.
2. See: Robert Puentes and Linda Bailey, "Improving Metropolitan Decision Making in Transportation: Greater Funding and Devolution for Greater Accountability." (Brookings, 2003).
3. Tom Lewis, *Divided Highways* (Viking Press, New York, 1997) p. 294.
4. Richard F. Weingroff, "Creating a Landmark: The Intermodal Surface Transportation Efficiency Act of 1991," Public Roads, November/December 2001: **http://www.fhwa.dot.gov/infrastructure/rw01.htm**.
5. ibid.
6. James A. Dunn, *Driving Forces* (Brookings, 1998) p. 90; and David Lewis and Fred Laurence Williams, *Policy and Planning as Public Choice* (Ashgate Publishing, Brookfield, VT. 1999) p. 46
7. Alan Altshuler and David Luberoff, *Mega-Projects: The Changing Politics of Urban Public Investment,* (Brookings, 2003), p. 18.
8. U.S. Department of Transportation, "Moving America: New Directions, New Opportunities: A Statement of National Transportation Policy." (1990) p. 29 and 48.
9. Weingroff, "Creating a Landmark."
10. U.S General Accounting Office, "Transportation Infrastructure: Better Tools Needed for Making Decisions on Using ISTEA Funds Flexibly," (1993) GAO/WED-94-26.
11. Federal Transit Administration, "Flexible Funds Transfers to the Federal Transit Administration by State, 1992-2001," (undated) **http://www.fta.dot.gov/library/reference/flex/ffts.html**.
12. The National Environmental Policy Act of 1969 (NEPA) is a broad federal law that essentially sets the national environmental policy. It has direct relevance to transportation requiring, for example, the examination and consideration of potential impacts on sensitive social and environmental resources when considering the approval of a proposed transportation facility.
13. Surface Transportation Policy Project, "TEA-21 User's Guide," (Washington, 1998.)
14. Section 1308 of TEA-21 eliminated the MIS as a separate requirement, and required that it be integrated as part of the analyses required to be undertaken under NEPA.
15. See: Federal Highway Administration, "Transit Capital Investment Grants and Loans Fact Sheet." (1998) **http://www.fhwa.dot.gov/tea21/factsheets/trcap.htm**.
16. U.S. Code Title 23, Sec. 145 (a)
17. Thirty states earmark gas tax revenues for highway or roadway projects only. The remaining states allocate a portion of revenues to other expenditures, like transit. See Robert Puentes and Ryan Prince, "Fueling Transportation Finance: A Primer on the Gas Tax" (Brookings, 2003).
18. For a more detailed discussion, see: Transportation Research Board, "Financial Capital Investment: A Primer for the Transit Practitioner," Transit Cooperative Research Program Report 89 (Washington: National Academy of Science, 2003).
19. Eighty-five separate projects are competing for funds. U.S. General Accounting Office, "Bus Rapid Transit Offers Communities a Flexible Mass Transit Option," (2003) GAO-03-729T, p. 3.
20. U.S. General Accounting Office, "Transportation Programs: Opportunities for Oversight and Improved Use of Taxpayer Funds," (2003). GAO-03-1040T. p. 16.
21. Transportation Equity Act for the 21st Century, Public Law 105–178, as amended by title IX of Public Law 105–206, chapter 3030; and Altshuler and Luberoff, *Mega-Projects,* p. 216.
22. Making Appropriations for The Department of Transportation and Related Agencies for the Fiscal Year Ending September 30, 2002, and for Other Purposes. H Rept. 107–308. 107th Congress (Government Printing Office, 2001).
23. Office of Management and Budget, "Budget of the United States Government, Fiscal Year 2004—Appendix," Title III - General Provisions, Sec. 321 (2003)
24. SAFETEA, Safe, Accountable, Flexible and Efficient Transportation Act of 2003, Administration Proposal, May 14, 2003, Title II, Section 1301, p30 line 2, **http://www.fhwa.dot.gov/reauthorization/safetea_bill.pdf**.
25. However, it is worth noting that the burden of financing transportation programs is slowly shifting to local governments and voter approved initiatives. For a detailed discussion, see: Martin Wachs, "Improving Efficiency and Equity in Transportation Finance," (Brookings, 2003).
26. For a detailed discussion, see Transportation Research Board, "Characteristics of State Funding for Public Transportation-2002," Transit Cooperative Research Program Research Results Digest (Washington: National Academy of Sciences, 2003).
27. Richard Werbel and Peter J. Haas, "Voting Outcomes of Local Tax Ballot Measures with a Substantial Rail Transit Component," *Transportation Research Record,* No. 1799, January 2002 (10-17).
28. U.S. General Accounting Office, "FTA Needs to Provide Clear Information and Additional Guidance on the New Starts Ratings Process," (2003). GAO-03-701. p. 12.
29. Federal Transit Administration, "Planning, Development and Funding for New Starts Program," (2003) **http://www.fta.dot.gov/library/policy/ns/ns.htm**.
30. Federal Transit Administration, "Reporting Instructions for Section 5309 New Starts Criteria," (2003) Sec. 3.4.1: **http://www.fta.dot.gov/library/policy/ns/2002/34.html**.
31. U.S. House of Representatives Committee on Appropriations, "Departments of Transportation and Treasury and Independent Agencies Appropriations Bill, 2004," House Rpt.108–243.
32. Code of Federal Regulations 23, sec. 771.115.
33. Federal Highway Administration, "Guidance for Preparing and Processing Environmental and Section 4 (F) Documents," (1987) **http://www.fhwa.dot.gov/environment/nepa/ta6640.htm**.
34. American Association of State Highway and Transportation Officials, "A Manual on User Benefit-Cost Analysis of Highway and Bus-Transit Improvements," (Washington: 1977).
35. Code of Federal Regulations 23, sec. 450.318.
36. Center for Urban Transportation Studies University of Wisconsin-Milwaukee, "An Overview: Land Use and Economic Development in Statewide Transportation Planning", report to Federal Highway Administration (1999).
37. Robert Burchell and others, "The Cost of Sprawl Revisited", Transit Cooperative Research Program Report 39 (Washington: National Academy of Sciences, 1998).
38. Volpe National Transportation Systems Center, "2002 Reporting Manual, Uniform System of Accounts," **http://www.ntdprogram.com/NTD/ReprtMan.nsf/Docs/USOA/$File/USOA.pdf**.
39. Federal Transit Administration, "Review of the National Transit Database," (2000) **http://www.fta.dot.gov/library/ntd/**.
40. Federal Highway Administration, "Overview of Highway Performance Monitoring System (HPMS) for FHWA Field Offices," (2003) **http://www.fhwa.dot.gov/policy/ohpi/hpms/hpmsprimer.htm**.

41. David T. Hartgen, "Ensuring Our Trust: Performance of State Highway Systems, 1984-2001," University of North Carolina at Charlotte (2003) **http://www.geoearth.uncc.edu/people/faculty/hartgen/EnsurOurTrust.html**.

42. Eno Transportation Foundation, "Performance, A TQ Point/Counterpoint Exchange with David Hartgen and Lance Neumann" *Transportation Quarterly,* Vol. 56, No. 1, Winter 2002 (5–19).

43. See National Transit Database at: **http://www.ntdprogram.com**

44. See Code of Federal Regulations 49, sec. 535 a(1).

45. Federal Highway Administration, "Highway Performance Monitoring System Reassessment," (1998) FHWA-PL-99-001. **http://www.fhwa.dot.gov/ohim/fin_rpt.pdf**.

46. Larry Sandler, "City Ripe for Better Transit," *Milwaukee Journal-Sentinel,* May 7,2003, p. 9B.

47. Edward Glaeser and others, "Job Sprawl: Employment Location in U.S. Metropolitan Areas," (Brookings: 2001).

48. Rebecca R. Sohmer and Robert E. Lang, "Downtown Rebound," (Brookings and Fannie Mae Foundation: 2001).

49. American Public Transportation Association, "APTA Award Winners 1983-2001, " (Washington: undated) **http://www.apta.com/services/awards/documents/awardshist.pdf**.

50. James J. Casey, "The Politics of Congestion and Implementation: Milwaukee's Freeways and the Proposed Light Rail and Transit System," *Marquette Law Review,* Spring 1995.

51. "Termination of Draft Environmental Impact Statement; Milwaukee and Waukesha Counties, Wisconsin," *Federal Register* 65 (123) (June 26, 2000).

52. Federal Transit Administration, "Annual Report on New Starts: Proposed Allocations of Funds for Fiscal Year 2004," Appendix B. (2003).

53. Larry Sandler, "Light Rail, Heavy Debate," *Milwaukee Journal-Sentinel,* August 20, 1996, p. 1.

54. Representative Thomas Petri, "Setting the Record Straight," June 12, 1998. **http://www.house.gov/petri/weekly/jun12col.htm**

55. Marc V. Levine, "Light Rail in Milwaukee: An Analysis of the Potential Impact on Economic Development," University of Wisconsin-Milwaukee (1992).

56. Steven Walters and Larry Sandler, "Thompson Vows 255 Budget Vetoes: $43 Million to be Excised; Light Rail Funding Ban to Stay," *Milwaukee Journal-Sentinel,* October 27, 1999, p. 1.

57. Southeastern Wisconsin Regional Planning Commission, "A Regional Freeway System Reconstruction Plan for Southeastern Wisconsin." (Waukesha: 2003).

Acknowledgments

The Brookings Institution Center on Urban and Metropolitan Policy would like to thank the Ford, Joyce, MacArthur, and McKnight foundations for their support of its work on transportation policy reform. Brookings would also like to thank the Fannie Mae Foundation for its founding support of the urban center and its work.

The following individuals provided invaluable review and general assistance in the development of this brief:

John Neff and Rich Weaver, American Public Transportation Association; Brigid Hynes-Cherin, Parsons Transportation Group; Amy M. Scarton, Office of Congressman Earl Blumenauer; Kate Mattice and Matthew Welbes, Federal Transit Administration; Jeff Boothe, Holland & Knight, LLP; Beth Osborne, Smart Growth America; and Scott Bernstein, Center for Neighborhood Technology. Heidi Karp provided excellent research assistance.

Finally we would also like to thank our other associates and colleagues who provided additional input and insight which helped in drafting this brief.

For More Information:

Edward Beimborn
University of Wisconsin-Milwaukee Center for Urban Transportation Studies
beimborn@uwm.edu

Robert Puentes
Brookings Institution Center on Urban and Metropolitan Policy
rpuentes@brookings.edu

About the Brookings Institution Series on Transportation Reform

In order to inform the debate over reauthorization of the federal surface transportation laws—the Transportation Equity Act for the 21st Century—the Brookings Institution has initiated a series of analyses designed to assess federal transportation reform. The essays will provide policymakers, the press, and the interested public with a comprehensive guide to the numerous issues that must be addressed as Congress considers the future of the nation's transportation policies.

In the Series:

- *TEA-21 Reauthorization: Getting Transportation Right for Metropolitan America*
- *Fueling Transportation Finance: A Primer on the Gas Tax*
- *Slanted Pavement: How Ohio's Transportation Spending Shortchanges Cities and Suburbs*
- *Improving Efficiency and Equity in Transportation Finance*
- *The Long Journey to Work: A Federal Transportation Policy for Working Families*
- *The Mobility Needs of Older Americans: Implications for Transportation Reauthorization*
- *Improving Metropolitan Decision Making in Transportation: Greater Funding and Devolution for Greater Accountability*
- *Highways and Transit: Leveling the Playing Field in Federal Transportation Policy*

Forthcoming:

- *The Need for Regional Anti-Congestion Policies*
- *Protecting America's Highways and Transit Systems Against Terrorism*

THE BROOKINGS INSTITUTION

1775 Massachusetts Avenue, NW • Washington D.C. 20036-2188
Tel: 202-797-6000 • Fax: 202-797-6004
www.brookings.edu

CENTER ON URBAN AND METROPOLITAN POLICY
DIRECT: 202-797-6139 • FAX/DIRECT: 202-797-2965
www.brookings.edu/urban