A REPORT OF THE INTERGOVERNMENTAL FORUM ON TRANSPORTATION FINANCE

Convened by the National Academy of Public Administration on behalf of the Intergovernmental Cooperation Consortium

FINANCING TRANSPORTATION IN THE 21ST CENTURY:

AN INTERGOVERNMENTAL PERSPECTIVE

January 2008

PREFACE

Although governments at all levels have become increasingly interdependent, limited opportunities exist for officials to meet and discuss common problems and potential solutions across the boundaries of the intergovernmental system. The Intergovernmental Forums, convened by the National Academy of Public Administration (Academy) in concert with six national associations representing state and local officials, seek to fill that gap. The six participating organizations, in addition to the Academy, are: The Council of State Governments, International City/County Managers Association, National Association of Counties, National Conference of State Legislatures, National Governors Association, and National League of Cities.

This consortium has convened two individual Forums representing all levels of government to address specific topics on key national problems. For each topic, the organizations in the consortium appoint a Principals Group to oversee the work of the Forum and take responsibility for the final report and its recommendations. The Principals for this Forum were appointed as documented in Appendix B. The consortium sponsors also appoint an Experts Group to advise the Principals, and an intergovernmental Working Group to provide further assistance. The members of these two groups appointed to assist this second Forum are listed in Appendices C and D.

Each Forum report presents a non-partisan intergovernmental perspective on the selected topic. The Academy has provided day-to-day support for the Intergovernmental Forum process.

The topic chosen for the Forum that produced this report was financing of the nation's surface transportation programs. Chapter 1 of this report describes the roles and responsibilities of the many governments and other entities that support our nation's highway and transit systems. These systems include nearly four million miles of roads and highways, nearly 600,000 bridges, almost 178,000 transit vehicles, approximately 11,000 miles of transit track-miles, and nearly 3,000 transit stations. This chapter was prepared by the Academy staff in response to a specific request by the Forum.

Chapters 2 through 5 constitute the report of the Principals on surface transportation finance issues. The Principals' recommendations are presented in Chapter 5. The views expressed and recommendations made in this report are those of the Principals—acting in their individual capacities, not as representatives of any organizations with which they are affiliated.

The Consortium members appreciate the work of the Principals, the Experts, the Working Group members, and others who contributed to this effort.

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The views expressed in this report are those of the Principals. They do not necessarily represent the views of the Academy as an institution or the other organizations that make up the Intergovernmental Cooperation Consortium.

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ACRONYMS

Academy	National Academy of Public Administration
AASHTO	American Association of State Highway and Transportation Officials
ACIR	Advisory Commission on Intergovernmental Relations
BLS	Bureau of Labor Statistics
CBO	Congressional Budget Office
C&P	2006 Conditions and Performance Report
CIP	Capital Improvement Program
CSG	The Council of State Governments
EPA	United States Environmental Protection Agency
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FTA	Federal Transit Administration
FTE	Full Time Equivalent (Employee)
GAO	Government Accountability Office
GARVEE	Grant Anticipation Revenue Vehicles
HOT	High Occupancy Toll
HTF	Highway Trust Fund
IBTTA	International Bridge, Tunnel, and Turnpike Association
ICMA	International City/County Managers Association
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
MPO	Metropolitan Planning Organization
NACo	National Association of Counties
NAFTA	North American Free Trade Agreement
NAPA	National Academy of Public Administration
NCHRP	National Cooperative Highway Research Program
NCSL	National Conference of State Legislatures
NEPA	National Environmental Policy Act
NGA	National Governors Association
NHS	National Highway System

NLS	National League of Cities
PPP	Public-Private Partnership
RTPO	Regional Transportation Planning Organization
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for all Users
SIBs	State Infrastructure Banks
SLAs	Service Level Agreements
TIFIA	Transportation Infrastructure Finance and Innovation Act
TIP	Transportation Improvement Program
TRB	Transportation Research Board
UMRA	Unfunded Mandates Reform Act of 1995
U.S. DOT	United States Department of Transportation
VMT	Vehicle Miles Traveled

EXECUTIVE SUMMARY

A Major Financial Problem

In recent years, the financing of America's highway and transit systems has become out of step with the performance that Americans expect of those systems. Present financing mechanisms consist of a complex set of federal, state, and local revenue sources, federal and state aid programs, and public-private partnerships. Spending constraints at all levels of government are also an issue. These financial arrangements are no longer sufficient to maintain existing facilities and services, or to meet changing demands and improve services to people and businesses. Revenues and investments have not kept pace with growing and shifting populations, inflation, changing technologies, evolving patterns of travel, current trends in globalization, and new policies that address energy conservation and environmental protection.

Of immediate concern is the fact that the federal Highway Trust Fund, which funds both highway and transit programs, is being spent-down at a rate that could make it insolvent in the near future unless Congress acts. Two separate National Commissions have been created by Congress to address the long-term sustainability of funding for highway and transit programs, and many national organizations have prepared or are preparing reports to contribute to this national dialogue. One of these commissions issued its final report on January 15, 2008, and the other is expected to release its findings and recommendations later in 2008. As the dialogue proceeds, it is important to consider the intergovernmental implications of efforts to modernize highway and transit financing mechanisms at all levels of government so they can sustain the current and future program needs.

The purpose of this Forum report is to provide a more fully developed intergovernmental perspective on options being considered for strengthening the nation's transportation finances.

Intergovernmental Challenges

The effort to re-craft transportation financing arrangements so that they can reliably support future highway and transit needs will face several difficult intergovernmental challenges; effectively addressing these challenges will be central to success. Responsibilities for financing and delivering services in both the highway and transit programs are shared by the federal, state, and local governments. Governments also share many of the same tax bases, and are accountable for results to the same voters and transportation system users. What one level of government does affects what the other levels can or must do, or sometimes cannot do. For many years, federal-aid programs for highway and transit have played very important roles in holding the transportation finance and service delivery systems together with matching grants, planning standards, and many other intergovernmental requirements. The "ecology" of the intergovernmental relationships in these programs is finely tuned; sudden or major long-term shifts in these relationships will impact the whole intergovernmental system for financing and delivering transportation services.

One significant shift in the intergovernmental system is the gradual movement away from financing highway and transit programs with revenues based on user-pays and beneficiaries-pay principles. Over many decades both the federal and state governments have used the motor fuels tax, other vehicle-related fees, and transit fares as the mainstay of their transportation finance systems, but these revenues are now falling short of meeting demonstrated program needs.

These shortfalls are being shouldered increasingly by local governments and general taxes (such as sales and property)—rather than by user fees. Of the local revenues that now provide approximately 35 percent of the financing for highway and transit programs, only about 4 percent of all local funds are generated by taxes on fuels and vehicles, and the transit-generated revenues (mostly fares) contribute only 6 percent of all surface transportation funds. Dedicated portions of state and local sales and property taxes, generally approved by referenda, may be beneficiary-based if carefully linked to transportation improvements, but the use of general funds and general-obligation bonds significantly blurs the linkage to users and direct beneficiaries.

Options for Strengthening Transportation Financing

A number of revenue sources are in use now at each level of government to help sustain the nation's highway and transit programs—as well as the essential intermodal links that these two programs contribute toward meeting growing demands for freight and passenger movement by all transportation modes. Various financing scenarios have been developed by many organizations to narrow or even close the current and projected gaps in maintaining existing surface transportation systems and services, as well as the gaps in improving services. All of these scenarios rely on increasing revenues from multiple sources at all levels of government and would require political justification in the context of increasingly constrained and highly competitive budget deliberations. They may also require reconstituted relationships among the instrumentalities of federal, state, and local governments that have highway and transit roles and responsibilities.

There is no magic bullet in any of the postulated revenue raising scenarios, and certainly no easy or sure answer to questions about how best to fill current and future financial gaps with increases in existing sources and funds from new sources. In addition, no effective process is currently in place to ensure that intergovernmental analysis and dialogues will be part of this essential rebalancing effort. Yet, the impacts of federal revenue proposals on state and local governments, as well as any unfunded federal mandates created by provisions in federal-aid programs, can be very significant. They are seldom addressed in the President's budget, as has been recommended by a previous Intergovernmental Forum (Academy, July 2006). Furthermore, they are not required to be considered in Congress' legislative process. This same lack of explicit attention to intergovernmental impacts often applies within states as state-aid programs and locally generated revenues are being designed to supplement each other.

Recommendations

Briefly stated, the Forum's six recommendations are:

1. Congress and the Administration should take immediate action to ensure the sustainability of the federal Highway Trust Fund, and should work with the nation's state and local governments to ensure sustainable financial resources adequate to maintain existing surface transportation infrastructures and operations in the future, as well as to support the increased capacity needed to improve performance.
2. National surface transportation performance goals and the intergovernmental roles and responsibilities needed to achieve these goals should be established collaboratively.
3. All levels of government should maintain the revenue-raising principle that the users and beneficiaries of surface transportation systems and services should pay as much as possible of the costs of providing established levels of service.
4. In establishing intergovernmental and public-private roles and responsibilities for raising needed surface transportation funds, public policymakers should examine a wide range of sources and scenarios.
5. When examining these revenue raising scenarios, public policymakers should consider the intergovernmental impacts of proposed actions for each level of government, relative to the other levels of government.
6. When the federal and state governments make major changes in their surface transportation financial assistance programs, they should provide transition time to allow the governments receiving assistance to adjust to these shifts.

These recommendations are more fully stated in the final chapter of this report.

INTRODUCTION

Purpose of the Study

The Intergovernmental Forum on Transportation Finance was convened in January 2007 to consider "the current status of surface transportation financing, the appropriate roles of each level of government and the governing policies and financing agreements that may be needed." The Forum's Principals were charged with preparing and issuing a non-partisan consensus report, from an intergovernmental perspective, that offers "solution-oriented recommendations, statements of principles, program designs, policy and legislative suggestions, and sound management practices addressing all levels of government."

This Forum is not alone in addressing the transportation finance issue. Congress has established two separate national commissions to address it, and numerous other organizations are devoting substantial resources of their own to providing input to the deliberations of those official commissions.

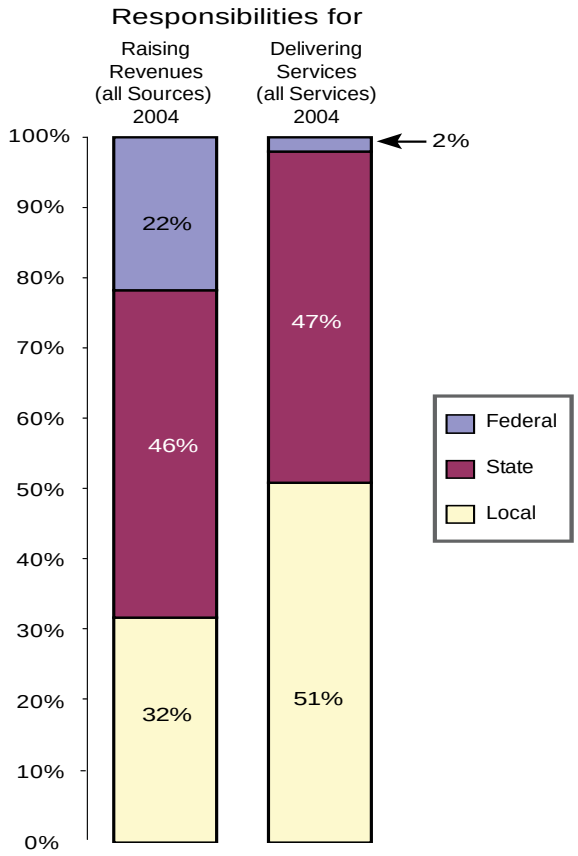
The Intergovernmental Forum on Transportation Finance, however, is the only group concentrating on the intergovernmental aspects of the issue. The Forum Principals believe that this perspective will add an important viewpoint for Congress and the Administration to consider in 2008 as they begin to tackle the tough issues presented by significant shortfalls in the highway and transit account balances of the federal government's Highway Trust Fund at a time when these programs require reauthorization.

The Intergovernmental Setting

The federal highway and transit assistance programs have long histories of accomplishment, and have developed well understood processes and procedures for intergovernmental planning, funding, and service delivery. Many years of evolving federal requirements, research, technical assistance, and funding of state and local transportation agencies have established sound practices and strong capabilities across the nation to help improve highway and transit services in every state. With federal highway grants flowing since 1916 and transit grants since 1964, a robust transportation service delivery system has been established. Both of these programs often are accompanied by state aid to local governments. In this system, all three levels of government provide significant levels of funding, but most of the service delivery is provided by the state and local governments. The relationship between revenue raising, program funding, and service delivery is shown in Figure 1. Intergovernmental assistance plays an essential role in making this relationship work.

Despite numerous variations in how the state and local governments pursue their many highway and transit responsibilities, the strong federal influences exerted in these programs over many years have established some consistency in their approaches. Federally required transportation planning has steadily increased highway and transit coordination since the 1980s, and has also increasingly integrated planning for operations and maintenance with planning for construction. Today, it is possible to portray a general logic model of how this complex intergovernmental service delivery system works. Figure 2 presents this model as a flow chart.

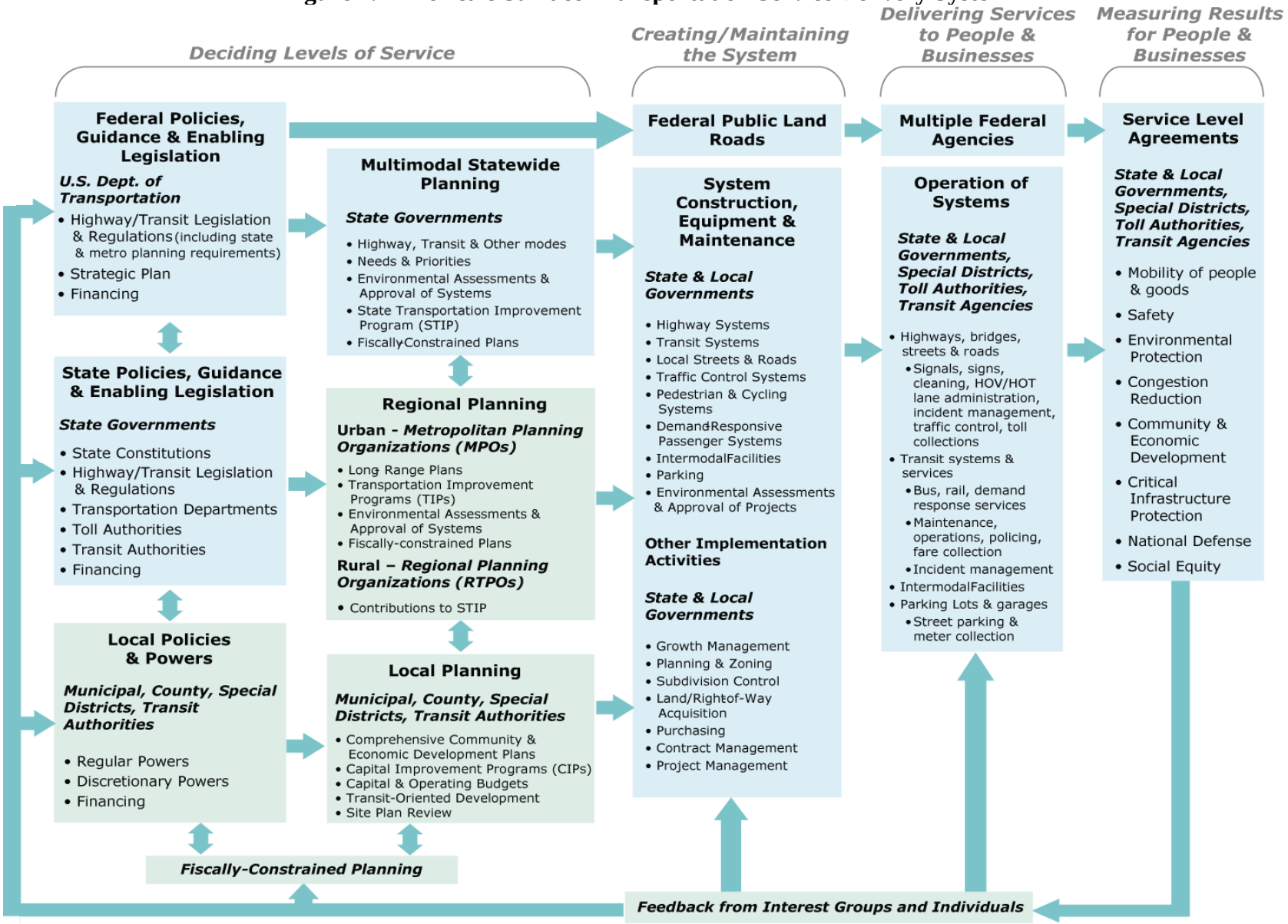
Figure 1. Complex Relationships between Financing and Delivering America's Highway and Transit Services



SOURCE: U.S. DOT, 2006 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance.

Reading the flow from left to right (Figure 2), it can be seen that the whole process of providing transportation services to the American people, businesses, and others is fueled by multiple constitutional, statutory, and budgetary authorities. The American system of government is founded on 51 constitutions—one for each state in addition to the one for the United States. Under this system, multiple legislative bodies, executive branches, and judiciaries fill in the details required to govern. Altogether, the United States is run by well over 87,000 units of government. The governmental units most directly involved in transportation are catalogued in Chapter 1.

Figure 2. America's Surface Transportation Service Delivery System



For now, it is enough to note that three separate streams of governmental powers and financing energize America's transportation systems—federal, state, and local—and they interact with each other to supplement and compliment the transportation systems' capabilities. It is the combination of these efforts that makes the system work—not any single body.

How well this complex system works depends heavily on how well the interlinked planning processes work together. Keying off federal strategic planning and legislatively based requirements for statewide and metropolitan planning, these planning processes are supposed to interact with each other to help coordinate the overall effort. Regional planning—both metropolitan and rural—is designed to help bring in the local planning processes that are essential to exercising the implementation powers needed to make the vital transportation-land use connection. U.S. DOT, as well as several interstate metropolitan planning organizations (MPOs), plus bilateral efforts between state DOTs, federally sponsored international border commissions, and the Northeast Corridor Coalition provide some coordination across state lines. However, planning and coordination efforts are notoriously difficult to perfect, so actual practice may not always fully achieve the expected results.

The vertical connections in the flow chart are equally as important as the horizontal ones. While the horizontal links empower and fund transportation programs, it is the vertical links that are supposed to provide coordination, efficiencies, synergies, and the best results for people and businesses. Successive approximations over substantial periods of time may be required to achieve acceptable degrees of success.

Federal requirements for financially-constrained planning, which evolved during the 1990s, have become an essential linchpin for holding this process together. By rejecting transportation plans that are not practical to fund, this federal requirement forces planners to design affordable transportation systems. Thus, a creative tension is created that keeps the planning and financing processes in close touch with each other. This combination ultimately determines the levels of service that can be promised and provided to transportation system users. In this model, service level agreements (SLAs) can become accountability mechanisms for measuring highway and transit program success. Defined this way, success is not possible for any single level of government to achieve by itself. The whole intergovernmental community is in this together. National, state, and local performance targets are intertwined.

Obviously, the two left-hand columns of Figure 2 are keys to success. They provide the sustainable funding and affordable plans needed to create and maintain the service delivery systems (the constructed and properly equipped facilities) and to operate these systems effectively and efficiently. The construction and operational steps follow fairly directly from financing and planning. Intermediate measures of success—including on-time and within-budget construction, and meeting operational milestones) need close attention, but the success indicators that make the most difference are the measures of customer service that are actually being provided (the right-hand column on the chart).

Still, that's not the end of the story. Seldom will all the SLAs be met perfectly. Feedback will be necessary to adjust program structures and funding levels, based on the evidence. And

planning may need to be improved, in addition to construction and maintenance practices and operations. So the chart includes feedback loops that reach back all the way to the legislative and funding authorities as well as to the planning, building, and operating agencies.

Such is the theory of how the present system is supposed to work. A more detailed description of the current mix of roles and responsibilities of various governments and other players in the surface transportation system is provided in Chapter 1. Then, the remainder of this report focuses on the intergovernmental challenges created by immediate and long-term fiscal challenges to the nation's surface transportation systems—lack of sustainability in the provisions for federal highway and transit funding—and recommendations designed to meet these challenges.

Intergovernmental Challenges

The fundamental finance challenge cannot be met in a vacuum. Although the present focus is on the federal Highway Trust Fund, which is the primary source for funding both the intergovernmental highway and transit programs, preventing the federal Trust Fund deficiencies alone might not solve the overall intergovernmental finance challenge, depending upon how it is done. So the first challenge is to frame transportation funding as an intergovernmental issue that recognizes the highly intergovernmental arrangements that have been established for planning, funding, constructing, maintaining, and operating transportation systems and services.

The second challenge is to understand the wide variety of options being proposed by many different groups to fix the present and long run financial problems in the nation's highway and transit programs. And, the third challenge focuses directly on the potential intergovernmental impacts that may be associated with specific national proposals to fix the immediate transportation financing problem.

The bulk of this report is devoted to these three fundamental challenges.

Methodology

This report is based on an extensive review of a wide range of current studies from many different sources that bear directly on the vital topic of transportation finance. It is also based on the advice of many experts (in an Experts Group and from other individuals interviewed), as well as on the deliberations of the Forum's Principals Group and the Working Group appointed by the Forum's sponsoring organizations. The report's appendices provide a bibliography of the studies reviewed, as well as rosters of the individuals participating in the Intergovernmental Forum on Transportation Finance. Another appendix provides a list of persons formally interviewed or contacted less formally. The Forum's Principals Group alone, is responsible for the content and recommendations of this report.

Scope of this Report

The balance of this report contains the following five chapters:

1. **Existing Surface Transportation Roles and Responsibilities**. This chapter describes the existing intergovernmental and public-private relationships through which America's surface transportation system is currently being planned, financed, built, operated, and sustained. It is intended to provide an unbiased overview of the existing system to assist policymakers at all levels of government in taking actions to sustain, improve, and fund America's highway and transit services.

   Responsibilities for highway and transit programs are widely distributed, and they have grown and shifted over a long period of time through the complex and dynamic interplay of state constitutional law, highway and transit program legislation enacted by the federal, state, and local governments, related administrative regulations, and long years of practice at all levels. Understanding these relationships is essential for making improvements.

2. **The Challenge of Framing Transportation Finance as an Intergovernmental Issue**. This chapter describes the substantial and growing gap between the highway and transit revenues being produced by existing sources and the funds needed to maintain and improve transportation services to people and businesses. This gap—combined with other factors—is so significant that the Government Accountability Office (GAO) has judged the U.S. Department of Transportation (DOT) programs to be at risk of failing to meet growing program demands, and has added them to the GAO High Risk List. Detailed projections show the gap remaining unfilled over the 2007-2017 decade unless action is taken to increase revenues. It is vital to develop widespread agreement on the service levels to be provided (on the demand side of this gap), and the performance measures and service level agreements to be used to hold transportation service providers accountable for results. Such agreements are needed to validate the nature and size of the performance gaps to be filled.

3. **The Challenge of Understanding Options to Strengthen Financing**. This chapter describes the many options that exist to improve existing revenue sources so their yields will be more sustainable, to make use of supplemental revenue sources, and—over time—to substitute new more sustainable revenue sources for older less sustainable ones. No simple solution to the sustainable finance problem has emerged from available studies, but several plausible scenarios have been postulated by various parties. For example, a 2006 NCHRP study, *Future Financing Options to Meet Highway and Transit Needs*, projected three combinations of revenue sources currently in use at all levels of government that show the technical feasibility of substantially narrowing expected shortfalls if they are used together as part of a coordinated strategy. Nevertheless, the NCHRP report notes substantial implementation obstacles to achieving these revenue enhancements. Strengthening this complex intergovernmental finance system appears to be a long, hard task that will require the use of new intergovernmental tools and continuing efforts over many years.

4. **The Challenge of Focusing on Intergovernmental Impacts when Strengthening Transportation Financing**. This chapter explores what it would take to implement an intergovernmental approach to achieving a sustainable transportation finance system. It follows the intergovernmental finance principles set forth by the first Intergovernmental Forum (Academy, July 2006). The central concept is to take a whole-of-government (federal, state, and local) approach; the two new primary implementation tools explored are (1) intergovernmental fiscal impact analysis conducted as part of robust fiscal notes procedures at the federal and state levels, and (2) revenue source modernization programs at each level of government. Continued use of federal and state motor fuels taxes and of federal-aid and state aid programs—in some form—are included in most of the current proposals for near-term transportation finance program improvements. Planned transition periods would help to bridge the lengthy time required to implement major alterations in the intergovernmental systems for financing highway and transit programs.

5. **Recommendations**. This final chapter builds upon the Forum's findings and conclusions to make six specific recommendations for implementing the whole-of-government approach to achieving sustainable transportation financing. The Forum Principals emphasize that a one-government-at-a-time approach to revenue enhancements and program design will not achieve an effective surface transportation financing system.

CHAPTER 1
EXISTING SURFACE TRANSPORTATION ROLES AND RESPONSIBILITIES

America's surface transportation system is an integral part of daily life, both personal and professional. Whether walking, cycling, driving, riding a bus or train, or using food and products brought by trucks and trains, everyone benefits from the smooth and efficient operation of the system.

However, many roads and bridges are in need of major repairs, many are well beyond capacity, and congestion, delays and safety concerns impact the nation's quality of life and economy. Similarly, many transit systems are dealing with increased congestion and increased ridership, and are in need of expansion or major capital improvements. State and local budgets are strained, and both the Administration and Congress have projected imminent shortfalls in the federal trust fund that has supported about one-fifth of the nation's highway and transit costs. The costs of major new transportation projects, coupled with environmental concerns and community impacts, limit the amount of new transportation construction and make it imperative to maximize the efficiency of the existing system.

The next round of federal transportation legislation will undoubtedly engage federal, state, and local policy makers—as well as the public, the business community, and others—in new discussions about how to meet these challenges. To help frame the discussion, this chapter describes the current structure and functioning of the highway and transit systems. It begins by identifying the elements that make up the system and who owns and operates each one. The chapter then explores, from an intergovernmental perspective, how the federal, state, and local jurisdictions and agencies in regions, states, and the nation as a whole work together to deliver a cohesive system of surface transportation services.

Box 1. Developing an Intergovernmental Perspective of the Transportation System

- *What are the elements of the transportation system?*
- *Who owns and operates these different elements?*
- *How do federal, state and local jurisdictions work together?*
  - *How is the system funded*?
  - *How are priorities set and plans made?*
  - *Who builds it?*
  - *Who operates and maintains it?*

This chapter is intended to provide a better understanding of existing roles and responsibilities to help inform those who are responsible for addressing future financing issues.

Transportation as a "System"

To the traveling public, the surface transportation system may appear seamless, but hundreds of state and local agencies own, operate and maintain different parts. Traveling across a metropolitan region, one could, for example, drive on roads under the jurisdiction of two state DOTs, three or four different counties' public works departments, various cities and municipalities, and a number of separate toll authorities. Buses or commuter trains might be operated by a regional transportation authority, by separate bus and rail public agencies, or by

private sector providers. Different organizations in each jurisdiction may be responsible for setting the speed limits, timing traffic signals, and erecting road signs. Separate state highway patrol, county and city police, toll authority police, and transit police may enforce state and local traffic laws, manage incident response, direct evacuations, and keep travel lanes open. County or city fire departments and emergency responders might respond to crashes and accidental spills of hazardous materials.

Underlying the physical infrastructure of roads, bridges, and transit facilities is a complex network of public and private organizations that finance, plan, build, and operate the overall system. While state and local government agencies now build and operate most of the roads, bridges, and transit systems, there are increasing opportunities for the private sector to do some of this work.

The large numbers and wide variety of government agencies with transportation responsibilities are shown in Table 1.

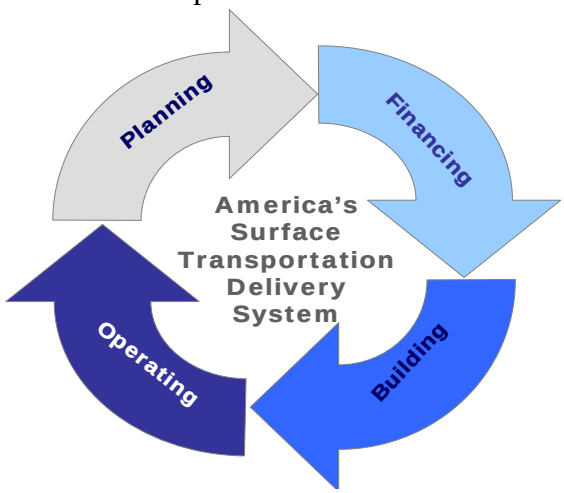
Table 1. Major Public Sector Stakeholders in Surface Transportation Programs

Federal	State	Regional Transportation Planning Organizations	Local Governments	Transit Agencies
U.S. Department of Transportation (DOT) 6 Major federal Land Management Agencies/1 3 Primary Environmental Protection Agencies/2	51 state departments of transportation (one in every state + D.C.) Other state agencies with related responsibilities	Urban 383 Metropolitan Planning Organizations (MPOs) (ranging from 1-26 per state) /3 Rural 180 Regional Transportation Planning Organizations (RTPOs)	3,034 Counties 19,431 Municipalities 16,504 Townships 767 Highway Special Districts 85 Bridge, Tunnel, and Turnpike Authorities/4	640 Urban Operating Systems (600 are public agencies) >2,000 Rural Operating Systems 561 Federally recognized Tribal Governments (eligible for rural transit grants)

SOURCE*: U.S. Census of Governments, Federal Highway Administration, Federal Transit Administration, National Association of Regional Councils, Association of Metropolitan Planning Organizations, International Bridge, Tunnel, and Turnpike Association, and Community Transportation Association of America.*
1/ U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, Department of Defense, Fish and Wildlife Service, National Park Service
2/ U.S. Environmental Protection Agency, National Oceanic and Atmospheric Administration, National Resources Conservation Service
3/ Grows with increases in the number of "urbanized areas"
4/ Estimated from lists compiled by Federal Highway Administration and the International Bridge, Tunnel, and Turnpike Association, as well as a telephone conversation with IBTTA's office on August 16, 2007.

Importance of Intergovernmental Relationships

Figure 3. A Change in One Function Impacts the Others



Effective performance of this complex, multi-jurisdictional network depends on collaboration among many government agencies and private sector entities. Yet, it is the interactions of these players that is most elusive and most important to understand when evaluating the impacts of prospective change.

Changes in any part of the physical system ripple through the entire system; changes in any function—planning, financing, building, maintaining or operating—can impact overall performance. To maximize performance, state and local jurisdictions and their transportation agencies must:

- Understand the roles, responsibilities, and capabilities of the other actors within the system
- Use common data elements and share information
- Make decisions based on this shared understanding and information

Ideally, stakeholders will collaborate on major decisions. Even with limited collaboration, if they use the same assumptions and understand the implications of their individual decisions on other actors, they can enhance system-wide performance.

Despite their best efforts and comprehensive planning and coordination guidelines imbedded in federal-aid programs, many inefficiencies crop up in the complex multi-agency, intergovernmental process of funding, building, operating and maintaining the nation's highway and transit systems, as well as their connections with other modes of transportation for the movement of both freight and passengers. Much work remains to be done to perfect this system.

Variations Across States and Localities

Due to the complexity and variations in state and local roles, responsibilities, and relationships, the process by which highway and transit services are delivered cannot be described in complete detail. Nevertheless, this report describes the general pattern of relationships and the general framework in which transportation agencies function to provide useful insights for policy discussions.

The report also provides a general description of the range of variations in these relationships that have emerged all across the United States. We know that each governmental jurisdiction and transportation agency functions under a unique set of requirements and in a unique political and cultural environment. The underlying legal requirements vary from state to state; local

governments are structured and empowered differently; and capabilities, traditions, and practices have evolved differently among the multitude of transportation providers across America.

Elements of the Transportation System

America's surface transportation system connects rural communities to urban centers, and links passengers and freight to employment and economic development opportunities.

Physically, it represents a vast network of roads, bridges, tracks, and intermodal connections that encompasses nearly four million miles of road, 11 thousand miles of transit tracks, 178,000 transit vehicles, and more than 97 thousand miles of railroads (Table 2).

In 2004, America's roads and rails moved 300 trillion ton miles (ton weight multiplied by number of miles traveled) of freight and logged 4.9 trillion passenger miles (number of passengers in vehicle multiplied by number of miles the vehicle traveled).[1]

Table 2: Surface Transportation System Components

Surface Transportation Component	Quantity
Roads and Bridges /1	
Road and Highways (miles)	3,997,462
Bridges	594,101
Public Transit /1	
Transit Vehicles	177,564
Transit Track Miles	10,892
Transit Stations	2,961
Intermodal Freight Connections /2	
Ports (ocean and river)	253
Airports Freight Terminals	99
Truck/Rail Terminals	203
Pipeline/Truck Terminals	61
Intercity Passenger Bus /3	
Intercity Buses	39,000
Intercity Passenger Rail /4	
Amtrak Route Miles	22,256
Freight Rail /4	
Class I Rail Miles	97,662

Sources: 1/ U.S. Department of Transportation, 2006 Conditions and Performance Report; 2/ Federal Highway Administration, 1999 NHS Intermodal Freight Connectors: Report to Congress; 3/ American Bus Association,2007; 4/ U.S. Department of Transportation, Transportation Statistics 2005 (2004 data).

Each mode in the surface transportation network includes significant capital infrastructure to support its activities. For transit systems, this includes all aspects of providing transit services, from vehicle and rail maintenance and fueling facilities, to dispatchers, stations, and ticket vending machines. For roads and bridges, the system includes maintenance facilities, rest areas, toll facilities, and sidewalks, plus heavy equipment. Both highways and transit systems connect to other transportation facilities including rail, water, and air to serve both freight and passenger needs.

Owners of the Roads, Bridges, and Transit Systems

The various components of the system are owned and operated by distinct entities. Other than a very small percentage of federally-owned roads on public lands, ownership and maintenance of

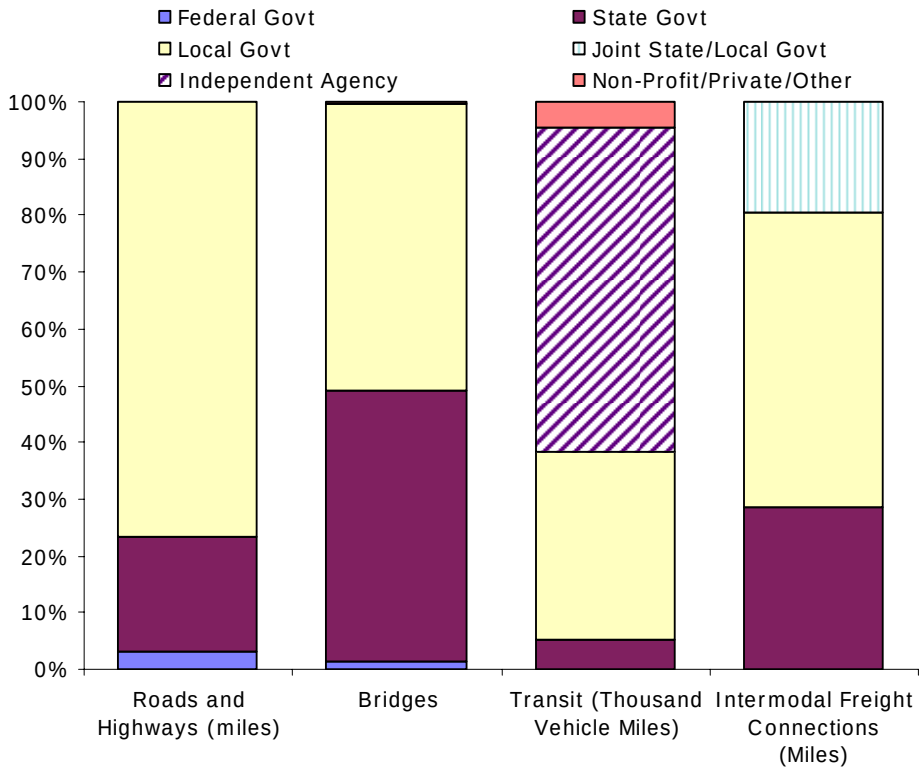
[1] Bureau of Transportation Statistics, "2007 National Transportation Statistics," Tables 1-37 and 1-46b.

almost all of the nation's roads and highways are the responsibility of state and local governments.

As illustrated in Figure 4 local governments own 77 percent of the miles of roadway in the United States, while state governments own approximately 20 percent. The remaining mileage is found on roads on federal lands, representing only 3 percent of total road miles in the United States. State and local governments own a near equal share of the nation's bridges.

Most transit systems are operated by public agencies that are established by local or state governments, and they often have elected government officials on their governing boards. Intercity passenger rail services are provided by Amtrak, a quasi-governmental organization, using federal, state and local funds to supplement revenue generated by fares and other Amtrak sources.

Figure 4. Surface Transportation System Owners



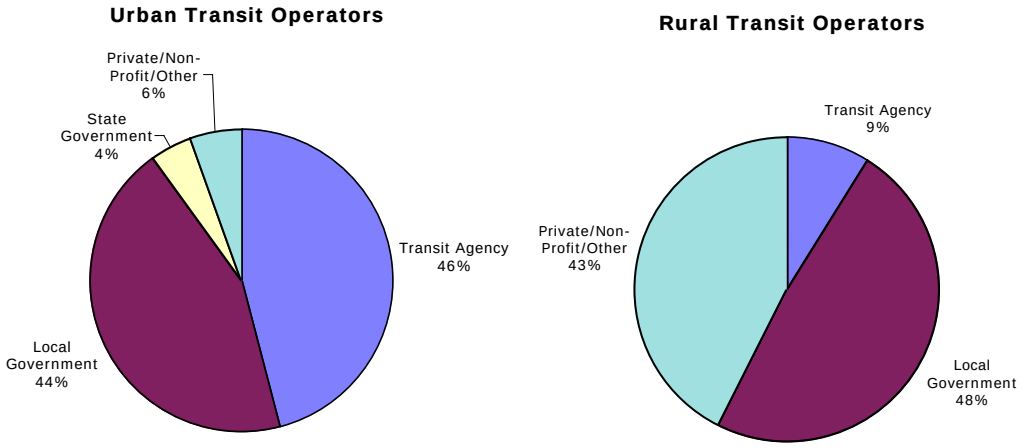
SOURCES*: U.S. Department of Transportation, 2006 Conditions and Performance Report; Federal Transit Administration, National Transit Database 2004; Federal Highway Administration, 1999 NHS Intermodal Freight.*

The most significant exception to government ownership and operation is in the freight railroad component of America's surface transportation system. All major freight railroads in the United States are owned and operated by private companies, although a few of the so called short-lines are in public hands.

Connections between and among modes of transportation (intermodal connectors) are essential to seamless and efficient transfers of people between automobiles, transit, railroads, and airports, and transfers of packages and freight between trucks, airplanes, railroads, and ships. Responsibility for these connectors is not consistently assumed at one jurisdictional level or another. More than half of the connector mileage to airports, ports, rail stations, and intermodal terminals is totally under local jurisdictional control, while another 19 percent is under joint state and local jurisdiction. Local jurisdictions, faced with a myriad of public requirements, typically do not view freight connectors as their responsibility. Where a road is under the control of a local jurisdiction, the state may not have the authority to spend state funds or may not see local roads as a priority.

The characteristics of ownership tend to vary depending on whether the road or transit service is located in an urban or rural environment. The majority of transit operations (buses, light rail, and heavy rail) in the United States are in urban areas. National data for urban transit systems indicates that almost all (94 percent) transit operators are public agencies. However, there is much higher representation (43 percent) of private and non-profit operators in rural areas, where small bus and shuttle companies, contracted demand-responsive services, and voluntary-sector health and welfare organizations play a larger part (Figure 5).

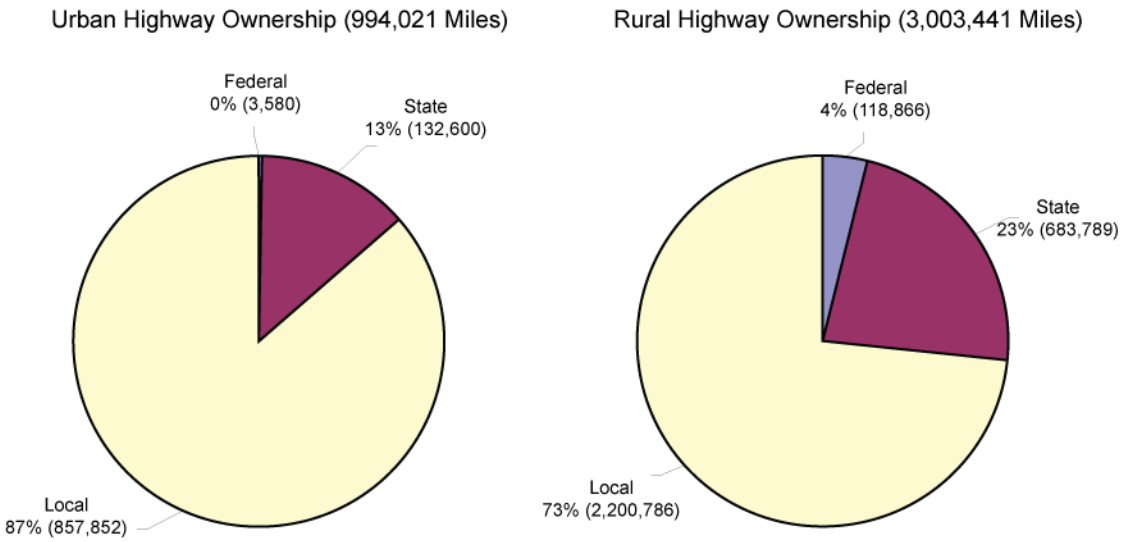
Figure 5. Urban Versus Rural Transit Operators



SOURCE*: Federal Transit Administration, National Transit Database (Urban Operators), and Rural Transit Assistance Program, 2007 Rural Transit Survey, preliminary results (Rural Operators).*

As with transit, the ownership of roads and highways in urban areas differs from rural areas (Figure 6). Although local governments own most of the roads in both areas, the state and federal miles owned are higher in rural areas than the state and federal miles owned in urban areas. In addition, the share of vehicle miles traveled (VMT) on urban highways—which are most heavily owned by local governments—is almost two-thirds (64 percent) of the total.

Figure 6. Urban Versus Rural Ownership of Highways (Miles in 2004)



SOURCE: *U.S. Department of Transportation, 2006 Conditions and Performance Report.*

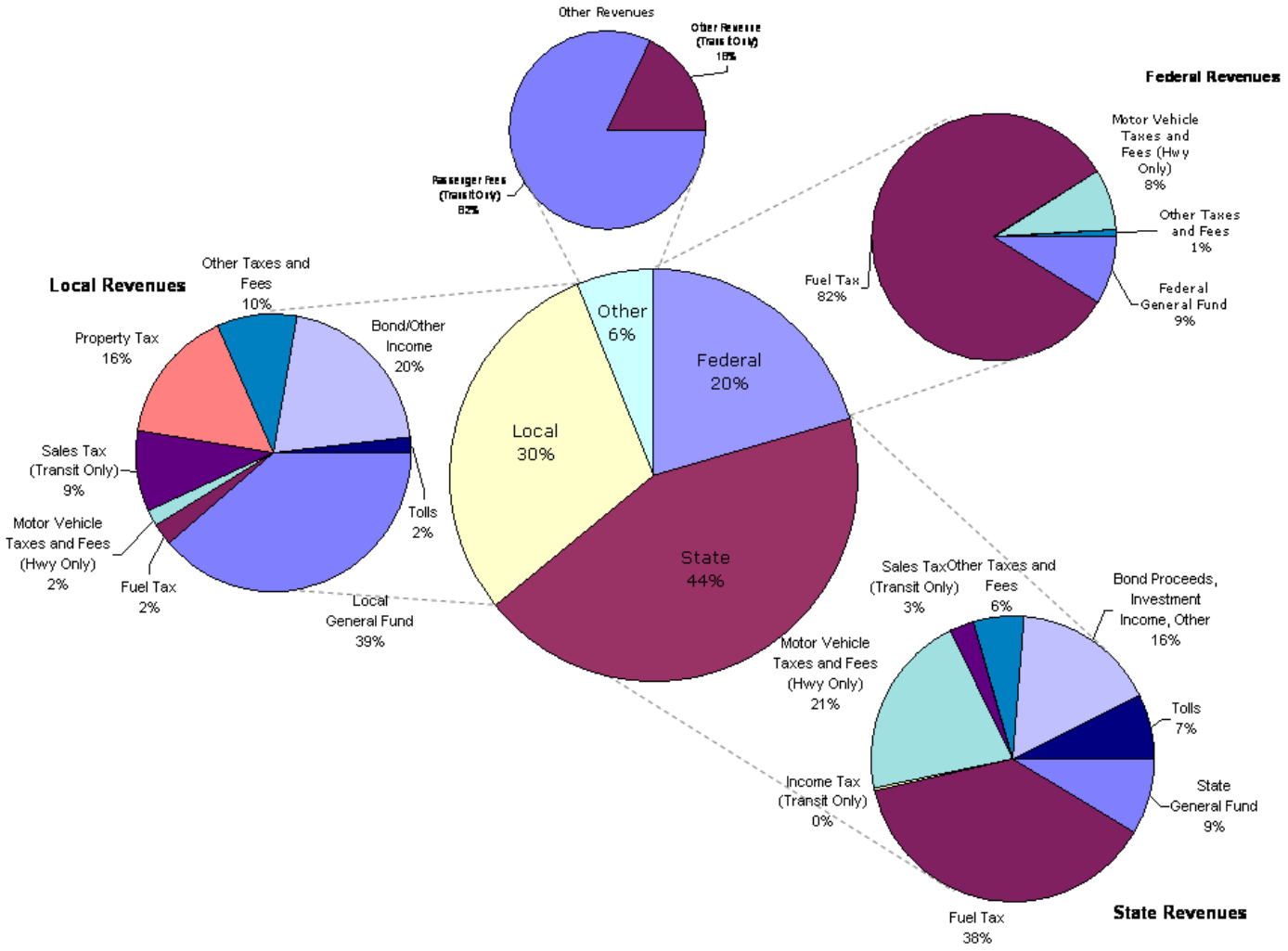
How the Surface Transportation System is Funded

In 2004, federal funding accounted for only about 20 percent of highway and transit dollars nationwide. Therefore, understanding state and local sources of transportation revenues is essential, especially if significant changes in federal funding are contemplated.

Figure 7 hows the percentage of funding in 2004 from federal, state, and local government revenue sources, and how those funds were raised at each level. States provided 44 percent, local governments accounted for 30 percent, and the federal government provided 20 percent of surface transportation funding. The remaining six percent was generated by transit fares and transit operation revenue.

Figure 8 shows for the same year (2004) how responsibilities differed for funding highway and transit programs. The federal share of funding was just over 20 percent for highways, and just under 20 percent for transit. The big difference was the much larger state share of highway funding, and the heavy reliance on local funding for transit.

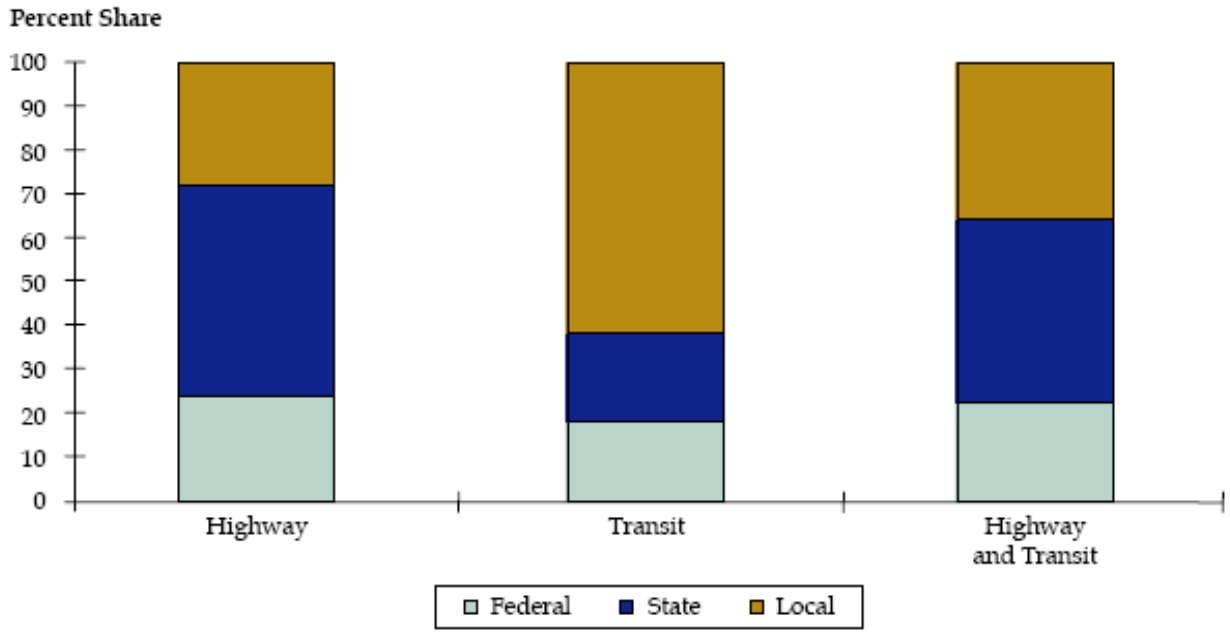
Figure 7. Highway and Transit Funding in the United States (2004)



SOURCE*: U.S. Department of Transportation, 2006 Conditions and Performance Report*

About 90 percent of federal funds for transportation come from fuel taxes and vehicle fees. At the state level, an average of 66 percent of funding for transportation comes from fuel taxes, vehicle fees, and tolls paid by users. At the local level, however, only four percent of transportation funding is derived from fuel taxes and vehicle fees. Most locally raised funding for transportation comes from general tax revenue or from property and sales taxes that are dedicated to transportation. Federal Grants to state and local governments are also important sources of funds for these governments—especially to support major capital investments.

Figure 8. 2004 Highway and Transit Funding by Level of Government



SOURCE: NCHRP Report, Figure 2.7, p. 2-12.

Federal-Aid Programs for Highway and Transit

The federal government administers a wide array of programs to support the highway and transit systems that deliver America's surface transportation services. Altogether, these federal-aid programs total nearly $50 billion each year. The Federal Highway Administration (FHWA) administers the highway programs and some flexible funding that may be used for highway, transit, and other modes. The Federal Transit Administration (FTA) administers a variety of transit programs, some of which may also be used to support other modes of transportation. Both FHWA and FTA support comprehensive multimodal transportation planning, transportation research and technical assistance, and training programs designed to improve the capabilities of transportation professionals and policy makers at all levels of government.

As shown in Figure 9, FHWA programs account for about 79 percent of the total federal surface transportation funding, while FTA programs account for about 18 percent. The remaining 3 percent is spent by both agencies to support planning, research and technical assistance, and training.

FHWA is charged with broad responsibility for ensuring that America's roads, highways, and bridges continue to be as safe, reliable, and technologically up-to-date as possible. Although state, local, and tribal governments own, operate, and maintain most of the nation's roads and highways, FHWA provides financial and technical assistance for planning, constructing, improving, and preserving state and local roads, highways, and bridges, and also provides direct funding for public roads and highways on federally owned lands and tribal lands that are not a

Figure 9: Fiscal Year 2007 Federal-Aid Highway and Transit Programs

FHWA Programs ($40 billion)

Major Formula Programs ($30 billion)

- ***National Highway System (NHS) Program*** ($6,111 million) provides funds to the states for improvements to the urban and rural roads that are part of the federally designated 163,000-mile NHS, which includes the 46,000-mile Interstate System and connections to intermodal terminals. The NHS serves major population centers, international border crossings, intermodal transportation facilities, and major travel destinations.
- ***Interstate Maintenance Program*** ($5,039 million) provides a funding to the states for on-going work necessary to preserve and improve the Interstate Highway System, which retains a separate identity within the NHS.
- ***Bridge Program*** ($4,320 million) provides funds to the states to improve the condition of their highway bridges through replacement, rehabilitation, and systematic preventive maintenance.
- ***Surface Transportation Program*** ($6,370 million) provides flexible funding to the states to be used by the states and their localities for projects on any federal-aid highway, including the NHS, bridge projects on any public road, transit capital projects, and public bus terminals and facilities.
- ***Congestion Mitigation and Air Quality Improvement (CMAQ) Program*** ($1,721 million) funds projects and programs to air-quality non-attainment and maintenance areas to support projects and programs designed to reduce transportation-related emissions.
- ***Highway Safety Programs*** ($1,256 million) provide formula funding to the states to support highway safety activities aimed at reducing traffic fatalities and serious injuries on all public roads, and at public railway-highway grade crossings.

Targeted Infrastructure Programs ($7 billion)

- ***Federal Lands Highway Program*** ($889 million) funds transportation planning, research, engineering, and construction of highways, roads, parkways, and transit facilities that provide access to and within public lands, national parks, and Indian reservations. There is a separate program for Indian reservation bridges.
- ***Other Geographic Locations*** ($5,356 millions), such as Appalachia, the Mississippi Delta, Denali, Puerto Rico, and regions along the Canadian and Mexican borders. Also funded are designated projects of national and regional significance, transportation improvements, and high priority projects.
- ***Specific Purposes and Needs*** ($280 million), such as emergency relief to restore transportation services in designated disaster areas, construction of ferryboat facilities, the elimination of highway-rail crossings in high-speed rail corridors, the preservation of covered bridges, scenic byways, and development and maintenance of motorized and non-motorized recreational trails and trail-related facilities.

Special Programs ($3 billion)

- ***Special Highway Assistance Programs*** fund a wide range of projects such as innovations to improve safety and reduce delays in highway construction work zones, safe routes for cycling and walking to schools, projects to improve the integration of transportation into the community, and promotion of state-of-the-art technologies.
- ***Other Programs*** fund activities such as innovative transportation financing, multimodal coordination, reducing motor fuel tax evasion, studies, and various pilot programs.

FHWA and FTA Support Programs ($1.5 billion)

- ***Planning*** ($1,057 million): Supports cooperative, continuous, and comprehensive planning for making intermodal surface transportation decisions in metropolitan areas and statewide. Includes highway, transit, bicycling, and pedestrian modes as well as intermodal connections.
- ***Research and Technical Assistance*** ($392 million): Supports the National Cooperative Highway Research Program, the Transit Cooperative Research Program, University Transportation Centers, other university research, the Surface Transportation and ITS

FTA Programs ($8.8 billion)

Urban and Rural Area Formula Programs ($3,986 million)

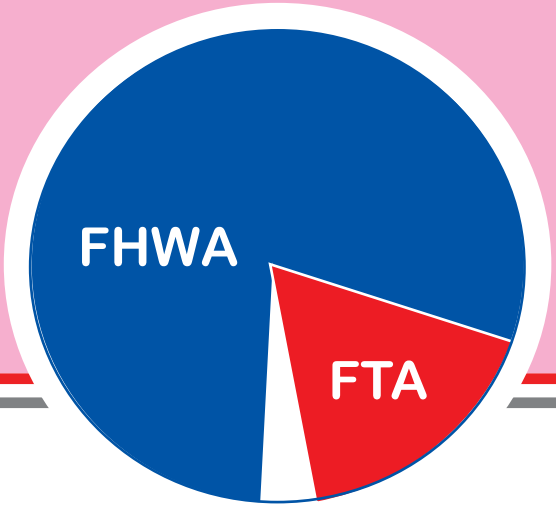
- ***Urbanized Area Formula Program*** provides capital improvement and planning funds to urban areas of 50,000 people or more. In areas with populations between 50,000 and 200,000 these funds may also be used for transit operating expenses.
- ***Non-Urbanized Area Formula Program*** distributes transit funds to the states to assist communities with populations below 50,000. This assistance may also be used to support inter-city bus service. A portion of this program is set-aside for direct federal transit grants to Indian tribal governments.

Capital Programs ($3,882 million)

- ***Bus and Bus-Related Projects*** program provides discretionary funding for buying and rebuilding busses, maintenance facilities, stations, shelters, and equipment, and for preventive maintenance.
- ***Fixed Guideway Modernization*** provides formula funding for capital improvements to existing exclusive or controlled transit rights-of-way used to rail, bus rapid transit, ferryboat, and HOV lane services.
- ***New Starts*** provides discretionary funding for extending or constructing new fixed guideway transit systems.

Special Programs ($265 million)

- ***Transit Accessibility for Special Populations***. Provides formula funding to the states to help non-profit and public agencies meet the transportation needs of the elderly and persons with disabilities, and to states and urbanized areas to meet transportation needs of individuals with disabilities, and to states and urbanized areas to transport welfare recipients and other low-income individuals to jobs and job-related activities, including reverse-commute services.
- ***Alternative Transportation on Federal Lands***. Supports public transportation and non-motorized transportation in national parks and on other federal lands—to protect those lands while making them more accessible to visitors.



Research programs, and the National Research and Technology Program to develop transit innovations, collect and analyze transit data, prepare transit policy studies, and improve transit planning techniques.

- ***Training*** ($31 million): Supports the National Highway Institute, the National Transit Institute, and other training activities.

state or local government responsibility. A majority of FHWA's funds are distributed by formula, but an increasing amount is now being distributed for individual projects.

The FTA provides both formula and discretionary grants to urban areas and (through the states) to rural communities; promotes innovation and research; provides technical assistance to transit operators; and ensures that federal funds are effectively and efficiently managed. Most FTA funding is for capital expenses and is typically provided on an 80/20 federal/local matching basis, even under its formula-based programs. For FTA's New Starts program, funding is shared 50-50.

Filling Emerging Funding Gaps

Total investment in highways has more than doubled in recent years, and the largest share has come from state and local sources. Similarly, it is the state and local investment in transit that accounts for most of the increase since the 1970s, when federal investment first began.

Through 2004, U.S. Department of Transportation data suggest that the gap between actual investment in highways and bridges by all levels of government and the estimated "cost to maintain" highways and bridges had been narrowing (Table 3). Since 2004, however, rising construction costs, primarily in large urbanized areas, have widened the gap somewhat. The gap between actual investment and the estimated "cost to improve" highways and bridges reversed direction somewhat earlier, and began increasing between 2002 and 2004.

These figures are drawn from official reports to Congress that measure the actual and estimated conditions of highways, bridges, and transit systems throughout the nation. The distinction between costs-to-maintain and costs-to-improve is the distinction between (1) keeping existing facilities in good working order and (2) adding new capacity to the systems. These estimates are based on U.S. DOT estimates of data and analyses of alternative investment scenarios.

In the 2006 C&P report, the annual "cost to maintain" highways and bridges over the next 20 years ranged from $40.7 billion to $61.0 billion under differing scenarios, and the annual "cost to expand and enhance" ranged from, $46.5 to $56.5. For transit, the annual estimates were $15.8 billion to maintain and $21.8 to improve.

Table 3. Average Annual Investment Scenario Estimates vs. Current Spending, 1997 to 2006, *Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance* (C&P) Reports to Congress

		Percent Above Current Spending	
Report Year	**Relevant Comparison**	**Cost to Maintain Highways & Bridges (Low Scenario*)**	**Cost to Improve Highways & Bridges (High Scenario*)**
1997	Average annual investment scenario estimates for 1996–2015 compared with 1995 spending	21.0%	108.9%
1999	Average annual investment scenario estimates for 1998–2017 compared with 1997 spending	16.3%	92.9%
2002	Average annual investment scenario estimates for 2001–2020 compared with 2000 spending	17.5%	65.3%
2004	Average annual investment scenario estimates for 2003–2022 compared with 2002 spending	8.3%	74.3%
2006	Average annual investment scenario estimates for 2005–2024 compared with 2004 spending	12.2%	87.4%

* **The investment scenarios are not fully consistent between reports**.

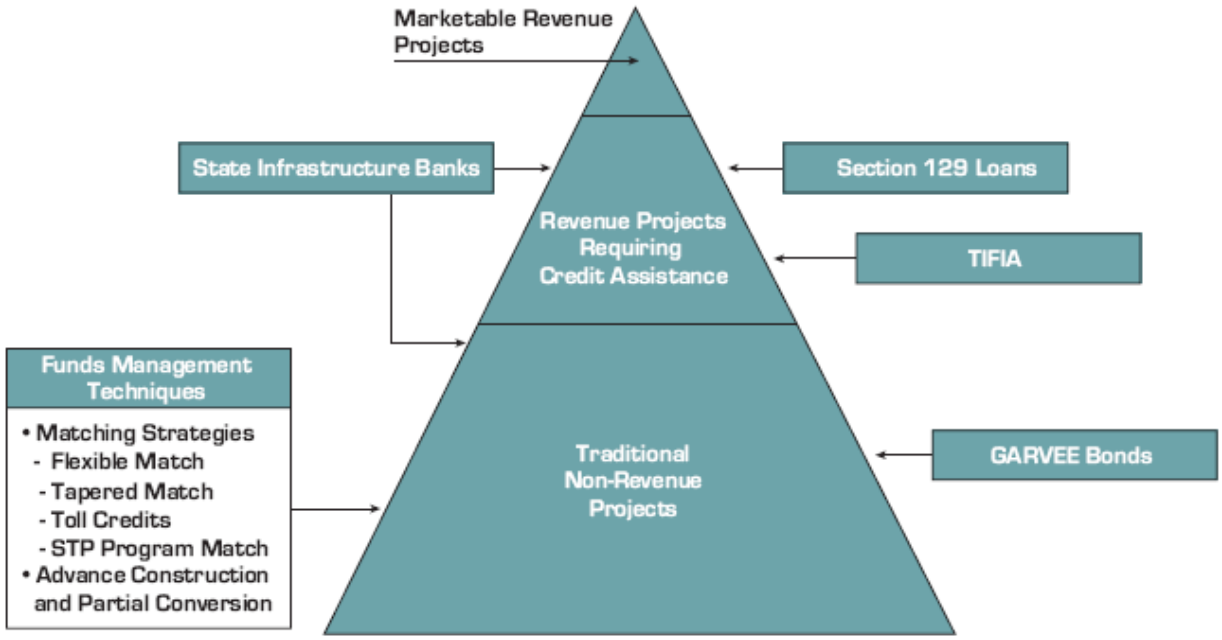
SOURCE*: U.S. Department of Transportation,* various years.

Beginning in the early 1990s, federal legislation and U.S. DOT initiatives have recognized the need to create new funding tools and expand State flexibility in using borrowed funds and private sector investments. These initiatives attempt to fill the increasing gap between transportation capital needs and available resources, without direct increases in Federal grant funding.

Today, a broader range of financing techniques is available to supplement traditional current-year transportation funding from grants and annual revenue collections. The resulting toolbox of finance techniques and strategies has been put to use for many projects nationwide, resulting in the acceleration of critical infrastructure investments.

Figure 10 characterizes how these supplemental sources of capital are being used to accelerate transportation investment. The paragraphs that follow the figure elaborate on the main techniques being used now.

Figure 10. Supplemental Sources of Transportation Financing



SOURCE: *FHWA's Innovative Finance Primer,Chapter 1*, http://www.fhwa.dot.gov/innovativefinance/ifp/index.htm

(1) *Innovative Management of Federal Funds*—The principal objective of these management techniques is to provide states with greater flexibility in managing Federal-aid highway funds by easing restrictions on the timing of obligations and reimbursements and creating a broader range of options for meeting matching requirements.

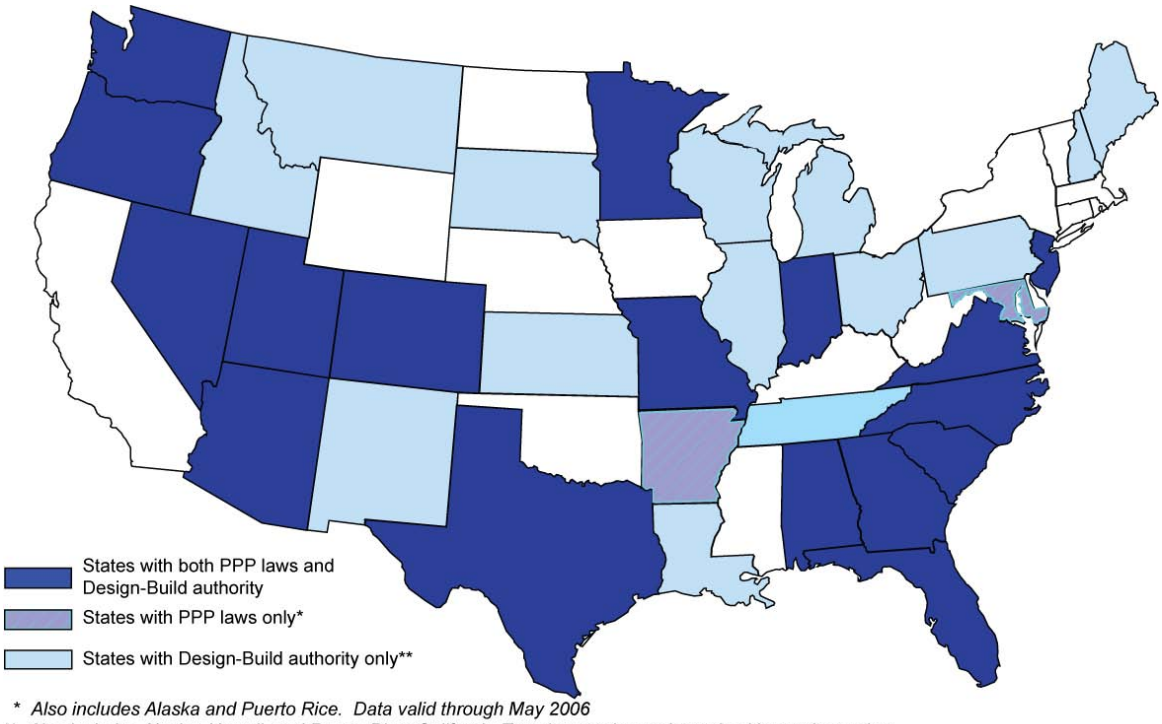
(2) *Debt Financing*—Some transportation projects or programs of projects are so large that their costs exceed available current grant funding and tax receipts, or would consume so much of these current funding sources as to delay many other planned projects. For this reason, when states and local agencies consider ways to pay for these large projects, they often look to financing the projects through borrowing. This category includes tax-exempt municipal bonds that states and local governments have used for decades, as well as the more recent Grant Anticipation Revenue Vehicles (GARVEEs) for highways and grant anticipation notes for transit. Of course, borrowing to meet immediate needs may restrict future funding options.

(3) *Credit Assistance*—These techniques provide new ways for Federal transportation funds to help project sponsors access credit (borrow) more easily. State Infrastructure Banks can offer loans and credit enhancement to both public and private transportation project sponsors. Under the Transportation Infrastructure Finance and Innovation Act (TIFIA) credit program, the Federal government provides loans, loan guarantees, and lines of credit to public and private sponsors of major surface transportation projects.

(4) *Public-Private* Partnerships—One option for increasing investment that has gained attention in some areas is Public-Private Partnerships (PPP). A PPP divides the responsibility for the project and/or its services between the public and private sectors to take advantage of the private sector's technological, management, and financial resources to supplement scarce public funds with private investment, expedite the cost-effective delivery of a project and/or services, and reduce the financial risk borne by the public agency sponsor.[2]

The federal government encourages private sector investment with a provision in SAFETEA-LU that added highway and freight transfer facilities to the types of privately developed and operated projects for which private activity bonds may be issued. State laws also play a critical role in the ability of state and local governments to use public-private partnerships. Because some PPPs have raised concerns about the relative liabilities of the public and private partners, equity among different classes of users, the use of eminent domain for privately owned or leased facilities, and other matters, some states have laws that inhibit the formation of PPPs by requiring low-bid awards on construction contracts, or by prohibiting design/build contracting, outsourcing of certain agency functions, tolling, or combining public and private funds. Other states have enacted legislation that is supportive of public-private partnerships. Figure 11 illustrates some of the variations in these state laws.

Figure 11. States with Laws that Facilitate Public-Private Partnerships



** Also includes Alaska and Puerto Rice. Data valid through May 2006*
*** Also includes Alaska, Hawaii, and Puerto Rico; California-Transit agencies and certain cities and counties; Illinois-Regional Transportation Authorities; Texas-Comprehensive Development Agreements. Data valid through 2004.*

SOURCE: *Federal Highway Administration, Federal Transit Administration*

[2] National Council for Public-Private Partnerships. "Public Private Partnerships Defined." http://www.ncppp.org/howpart/index.shtml#define

Planning and Setting Priorities

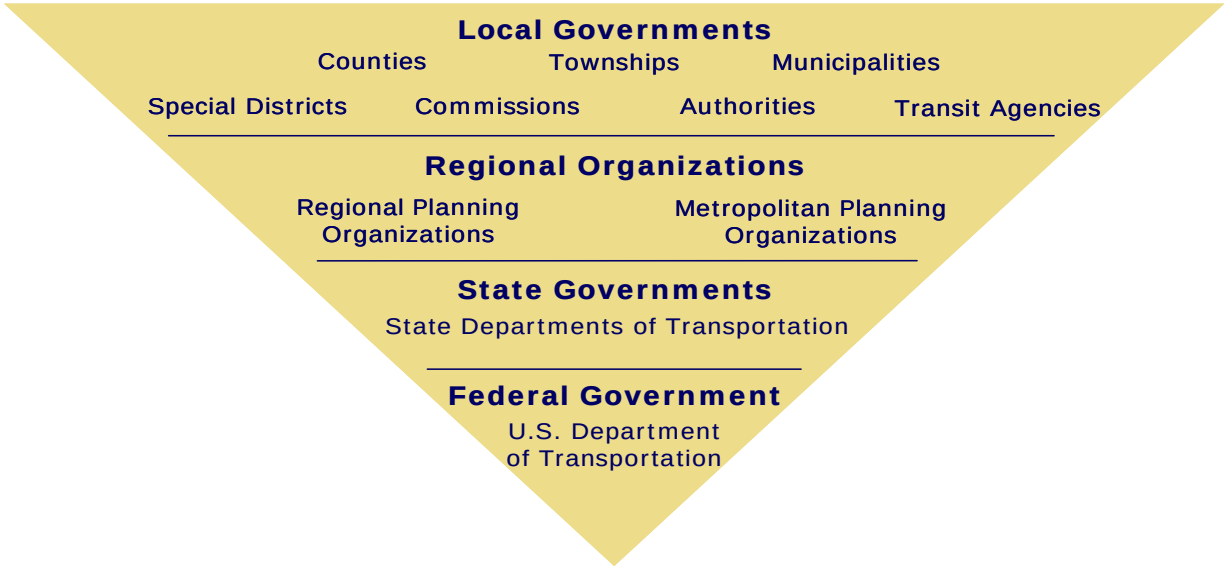
Transportation planning must be done cooperatively at both the statewide and metropolitan levels because no single agency has responsibility for the construction, operation, or maintenance of the entire transportation system (Figure 12). Federal and state laws that establish and fund highway and transit programs have significant effects on the nature and amount of transportation services provided to people in the United States, and they influence transportation decision-making at every level of government. The cooperative planning process is designed to bring these various influences together to produce a comprehensive and coordinated action plan, insofar as possible.

In general, three elements have promoted consistent transportation planning across jurisdictions:

- the statewide multimodal planning process required of state departments of transportation (SDOTs) by federal law
- intergovernmental transportation planning in metropolitan areas performed by metropolitan planning organizations (MPOs) as required by federal law
- the joint development of research, standards and good practices, and the technical assistance activities of members of the transportation community working through their national associations and through the Transportation Research Board (TRB)

Research, standards development, and guidance for good practices have been sponsored by federal and state agencies for many years. Much of this supportive activity occurs through TRB, which operates under the auspices of the National Academy of Sciences and the National Academy of Engineering. The TRB sponsors a network of some 200 committees representing every facet of the transportation community, including planning and plan implementation mechanisms. TRB also holds a very large conference every year, convenes many mid-year meetings and workshops, conducts several research programs, issues a weekly e-newsletter, and maintains a robust publications program.

Figure 12. Surface Transportation Planning: Layers of Responsibility



The federally-required transportation planning process is intended to establish procedures that help to ensure that the public's representatives and key stakeholders—including state, county, regional, and city transportation agencies—will work together to coordinate their expectations and plans over time to meet national, statewide, metropolitan and local needs as efficiently, safely, and environmentally acceptably as possible. There are, of course, natural tensions between the many different administrative agencies, legislative bodies, and individual actors that get involved, all of whom are subject to diverse political and bureaucratic pressures. The planning process is designed to bring contributions of all parties to bear comprehensively and cooperatively in a continuously coordinated process. Federal laws require that the federally-assisted statewide and metropolitan planning processes "consider" the following eight factors: (1) economic vitality; (2) safety; (3) security; (4) accessibility and mobility of both people and freight; (5) environment, energy conservation, quality of life, land use, and infrastructure; (6) intermodal system integration and connectivity; (7) efficient system management and operations, and (8) system preservation.

The results of these processes are supposed to be plans that are financially constrained and that identify discrete projects that can be scheduled and funded year-to-year. Nevertheless, the U.S. DOT Inspector General issued a report in September 2007 indicating that a growing number federal-aid highway, transit, and aviation projects are escaping the established planning and coordination process, and the Congress enacted a specific provision in 2006 that exempted earmarked transportation projects from the necessity to comply with statutory eligibility requirements. Some earmarks also give higher priority and/or more funds to eligible projects, thereby displacing or delaying projects previously scheduled by the intergovernmental planning process.[3]

Local government planning processes in many parts of the nation developed earlier than federal planning requirements and assistance, and many of its concepts have been incorporated into the statewide and metropolitan transportation planning process. In particular, the statewide and metropolitan transportation improvement program (TIP) requirements mirror the capital improvement program (CIP) feature of local planning that is used to systematically implement local public works projects of all types in support of local comprehensive community development plans. The roots of the CIP go back at least to the standard local planning enabling act of 1927 (model state legislation that has been updated from time to time). Local governments continue to develop their comprehensive plans and implement them through local planning, zoning, subdivision control, public works programs, and CIPs that provide substantial portions of the nation's transportation rights-of-way, infrastructure, and services under local authority—and often without federal or state aid. More recently, several states have developed statewide "growth management" or "smart growth" planning requirements and programs that place local planning programs in broader regional and statewide strategy frameworks.[4]

Federally-assisted transportation planning is designed to take all transportation planning and implementation into account—whether or not it receives federal funds—and the required

[3] U.S. Department of Transportation, Office of Inspector General, *Review of Congressional Earmarks within Department of Transportation Programs*, Report AV-2007-006, September 7, 2007, pp. 12-13.

[4] John M. DeGrove, *Planning Policy and Politics: Smart Growth and the States* (Cambridge, Massachusetts: Lincoln Institute of Land Policy, 2005).

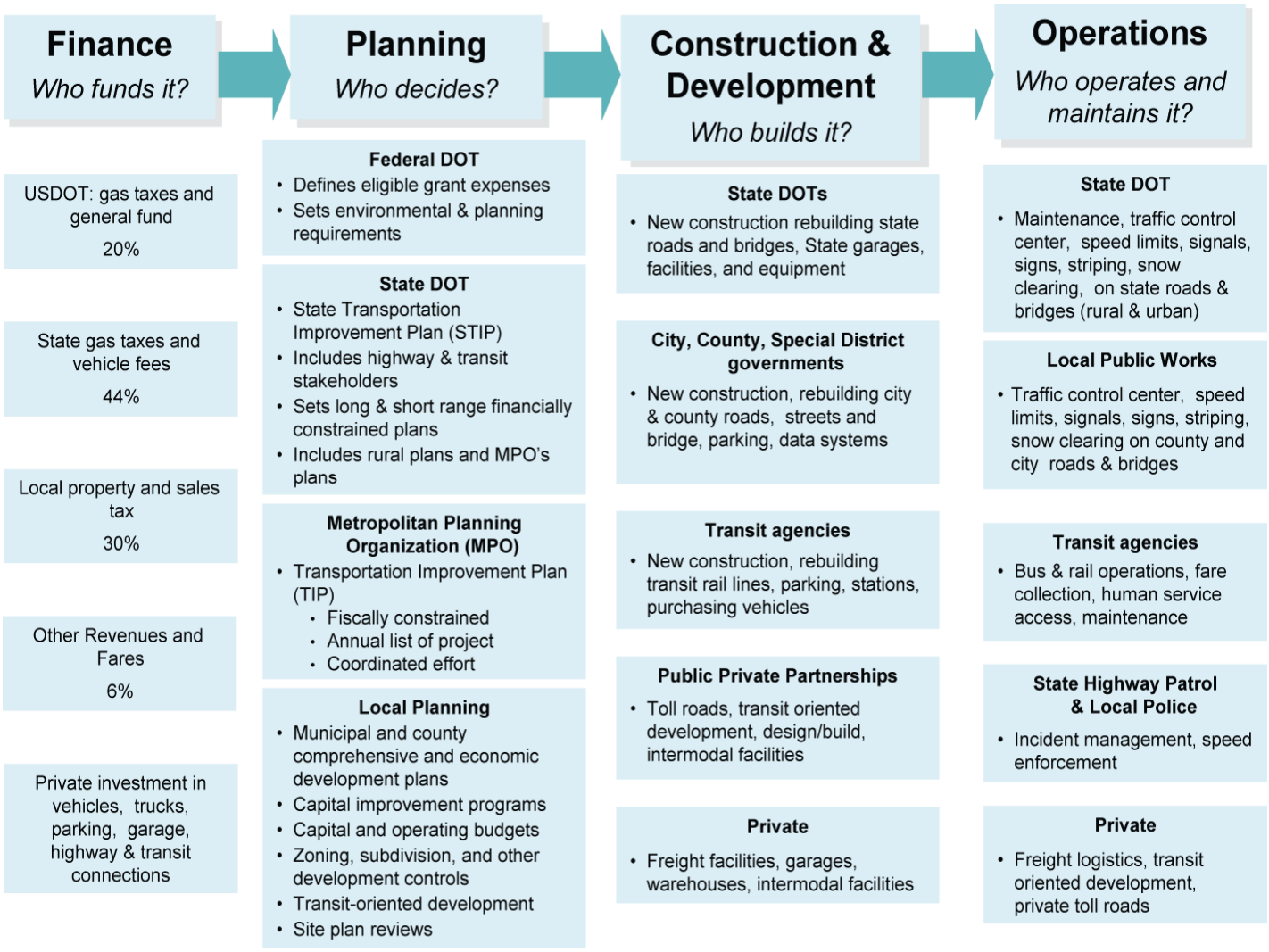
metropolitan planning process is structured to incorporate local planning into it as much as possible. Projects and operations that are federally assisted must comply with a large number of federal requirements, but non-assisted planning may not have to do so.

In the federally-assisted statewide transportation planning process, state departments of transportation are required to consult with local officials having transportation responsibilities in areas outside the jurisdiction of metropolitan planning organizations. This requirement has been implemented unevenly across the nation, as described in two reports by the Academy (May 2000; April 2001). MPOs must pass a joint certification review by FHWA and FTA every three years to help ensure the quality of their work, but there is no similar review of statewide transportation planning processes.

Operating and Maintenance Responsibilities

State and local governments build and keep America's surface transportation system running. From metropolitan planning organizations to regional transit authorities to state transportation departments to local public works and police departments, multiple entities are responsible for planning, construction, operations, maintenance, and safety. Figure 13 provides examples of the broad range of state and local jurisdictions and agencies that are partners in all aspects of the transportation system.

Figure 13. State and Local Governments Keep the Transportation System Running

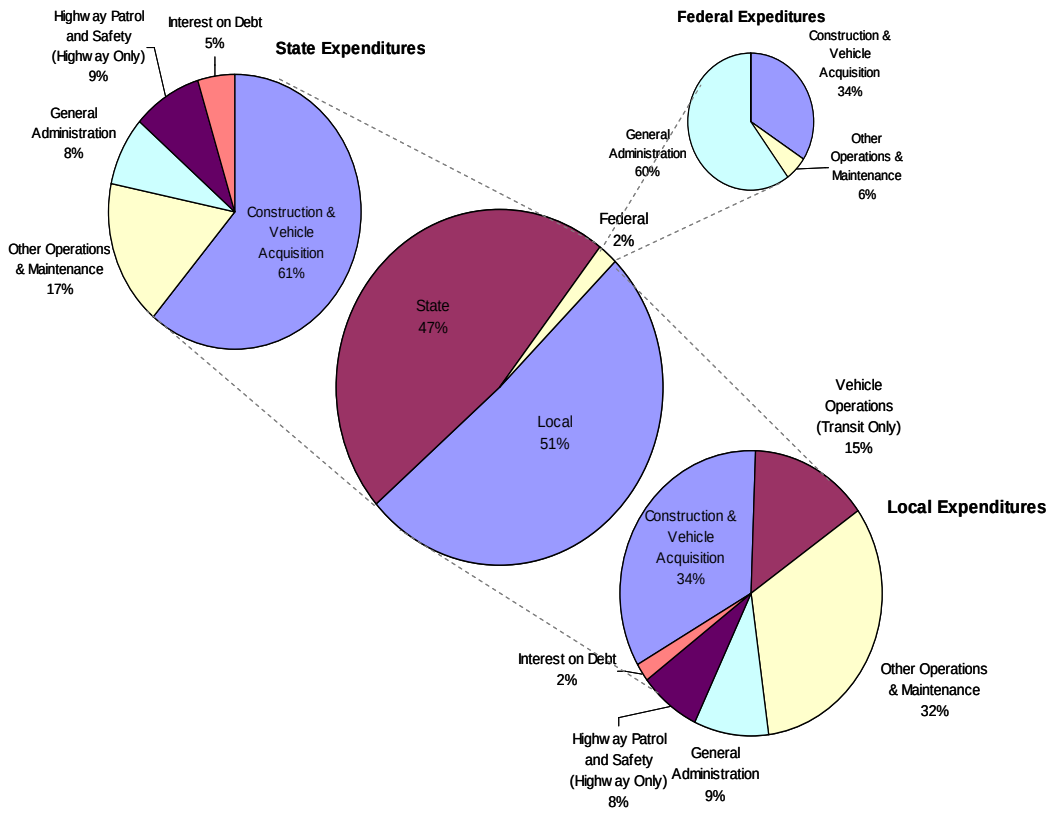


Because every state has a unique political, geographic, and demographic character there is no "typical" example. However, some patterns do emerge. On average, local governments are responsible for 51 percent of "end-point" expenditures related to road and transit construction and operations—after federal- and state-aid dollars have been received (Figure 14).[5] State governments spend an average of 47 percent directly on their own projects and the federal government directly spends and manages the remaining two percent (primarily for roads on federal lands).[6] Based upon national averages, state governments appear to take a larger role in spending for construction, while local governments spend more on operations and maintenance. Federal grants are heavily weighted toward capital investments, though these federal funds are spent primarily by state and local agencies.

[5] Local transit agencies and locally operated, non-profit transit services are included in the local expenditure category. Transit services provided by state governments are included in the state expenditure category.

[6] Individual federal agencies, upon whose lands the federal roads are located, spend additional money on them that is not reflected in these U.S. DOT appropriation figures.

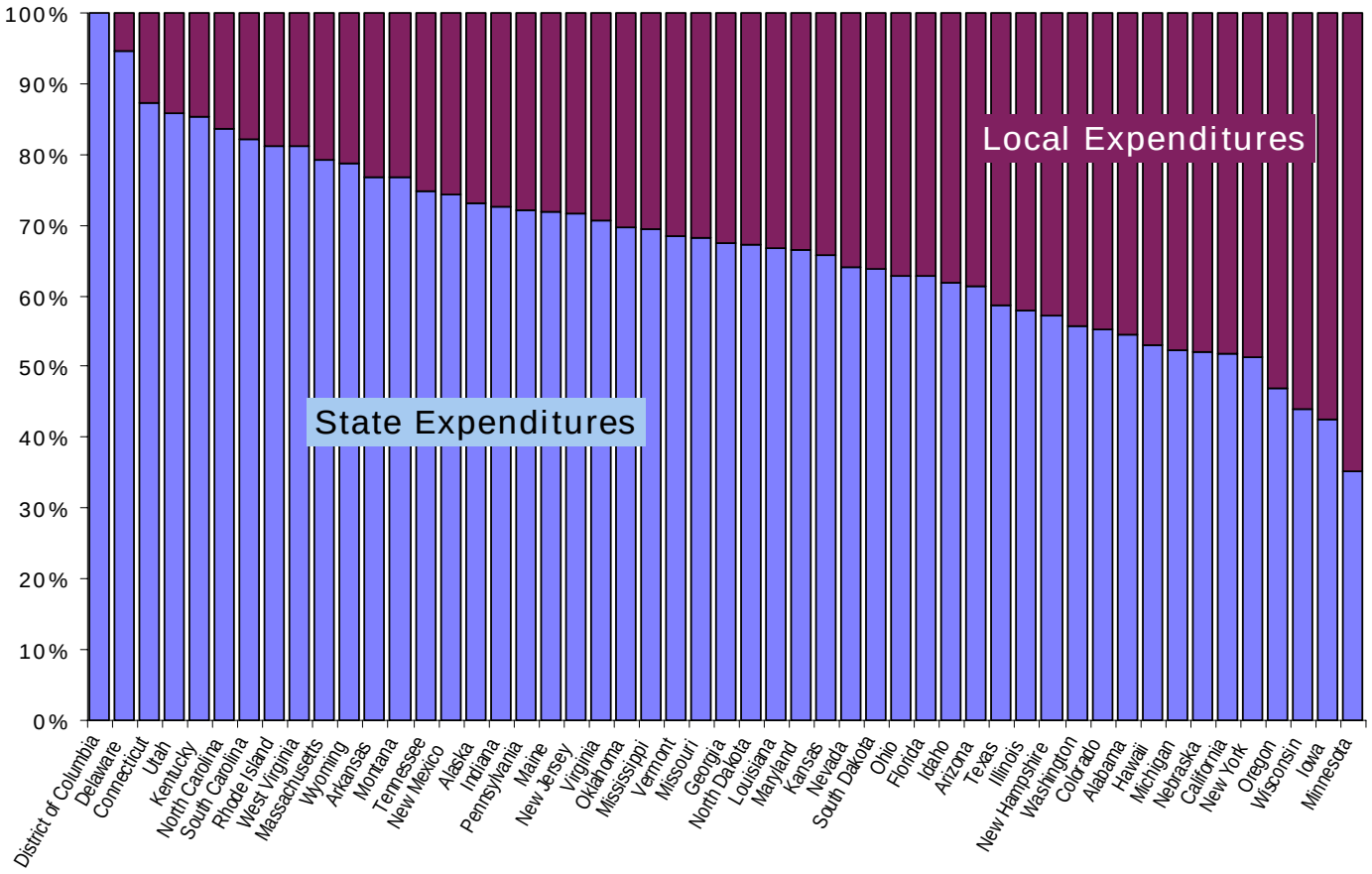
Figure 14. Highway and Transit Expenditures in the United States



SOURCE*: U.S. Department of Transportation, 2006 Conditions and Performance Report*

Despite these national averages, each state and local government is unique in its approach to operating its portion of the transportation system. The majority of transit systems are operated by local transit agencies, but the state government operates transit systems in five states. With respect to highway construction and operations, the balance between state and local government participation varies widely among states. As illustrated in Figure 15, the percent of state expenditures in highway construction and operations activities ranges from as high as 95 percent in Delaware to only 35 percent in Minnesota.

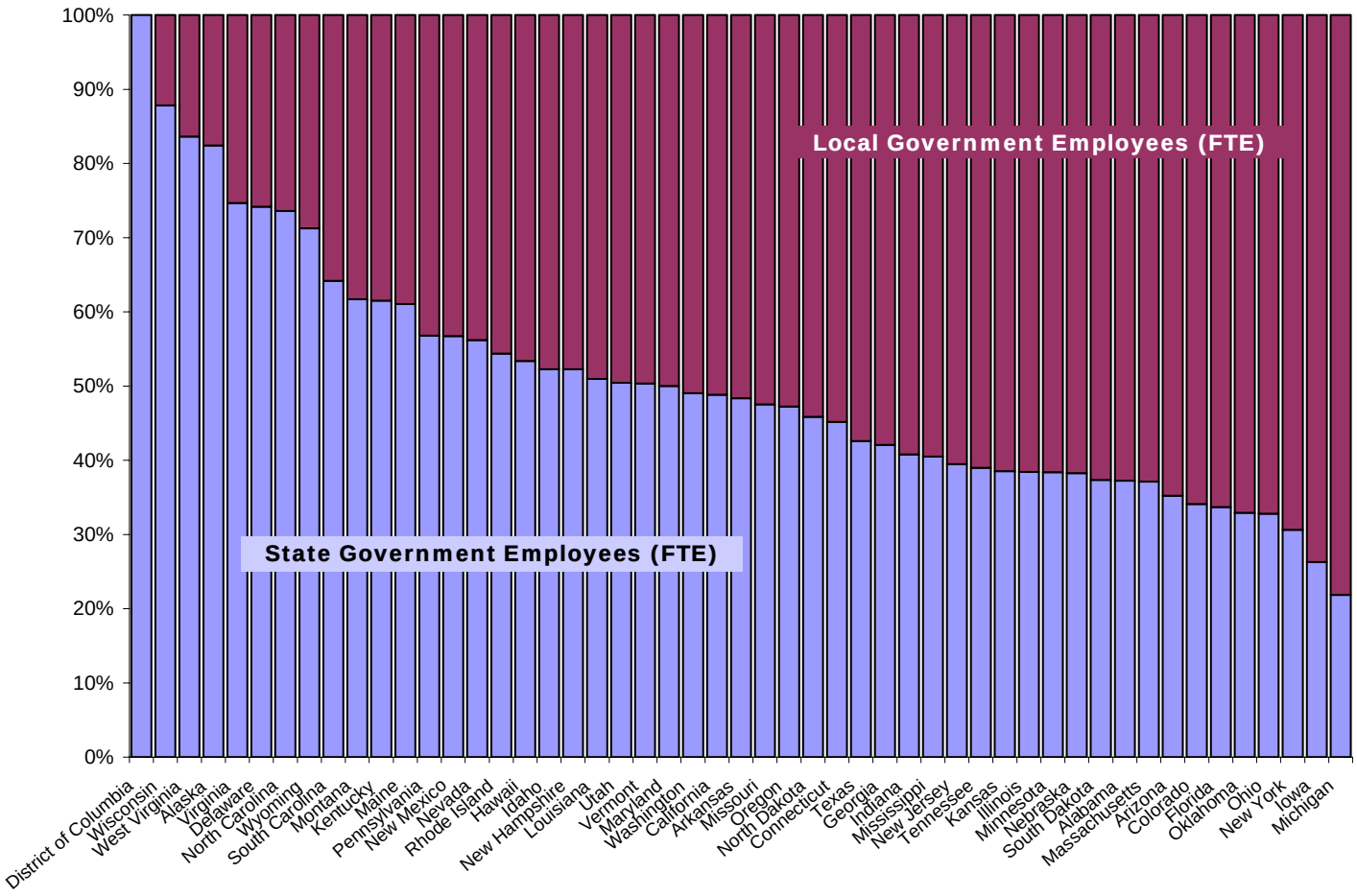
Figure 15. Share of State and Local Highway Expenditures by State (2004)



SOURCE*: Federal Highway Administration, Highway Statistics*

Figure 16 uses full-time-equivalent employees (FTEs) to measure state-by-state differences in how highway programs are staffed. Although these data are from a different source (U.S. Census of Governments) and for a different year (2002) than the finance data, they show a similar picture of tremendous variability among states. In some states, most highways and roads are built, operated, and maintained by state employees (and state contractors), while in other states most highways and roads are built, operated, and maintained by local employees (and their contractors). The range goes from nearly 90 percent state workers in Wisconsin to only about 25 percent in Michigan.

Figure 16. Share of State and Local Government Highway Employment (2002)



SOURCE*: U.S. Census of Governments 2002* (latest available figures). This census is repeated every five years.
Note: Does not include police or emergency personnel.

Examples of how state, city, and county agencies get involved in day-to-day operation of the surface transportation system can be found in Box 2. While there are no formal nationwide requirements or standards regarding collaboration on transportation operations, many agencies have created their own formal or informal agreements with neighboring jurisdictions and agencies. Ideally, jurisdictions with similar responsibilities (such as a county public works department and the state highway department) coordinate highway construction and work zones so that traffic does not back up on alternate routes. Similarly, as traffic moves through different jurisdictions, traffic congestion may be avoided by coordinating speed limits, the timing of traffic signals, and street parking enforcement. Region-wide coordination of highway and transit operations has increasingly become an essential element in congestion management planning and operations under federal guidelines and rapidly evolving practices. The goal of these guidelines and practices is to improve productivity of existing facilities. Successes in this effort are reducing the amount of new construction needed. Good practices are developing and being

applied more frequently. The examples in Box 2, however, should not be viewed as typical or average; as Figure 15 and Figure 16 showed, tremendous variability exists from state to state.

Box 2. Examples of Intergovernmental Operations Functions

State	City and County
State DOT ▪ Highway & bridge construction & maintenance ▪ Traffic control centers ▪ Traffic signs, signals, lighting, snow removal, barriers, lane marking, HOV administration ▪ Planning and emergency preparedness ▪ Hazardous materials incident response	**County and City Public Works** ▪ Roads, streets, bridges, sidewalk construction & maintenance ▪ Traffic signals timing and signage ▪ Lighting, barriers, snow removal, lane markings ▪ Planning & emergency preparedness ▪ Parking facilities ▪ Hazardous materials incident response
State Highway Patrol (for state roads**)** ▪ Traffic enforcement ▪ Emergency response & preparedness ▪ Incident management ▪ Truck size and weight enforcement ▪ Truck safety inspections ▪ Highway work zone enforcement	**City and County Police:** (for city and/or county) ▪ Traffic enforcement and control ▪ Emergency response & preparedness ▪ Incident management ▪ Highway work zone enforcement
State DMV ▪ Driver licensing ▪ Vehicle registration and fees	**Fire and Rescue** ▪ Incident response ▪ Emergency preparedness
State Toll Authority ▪ Highway and bridge maintenance ▪ Signs, lane markings ▪ Incident response ▪ Policing	**Transit:** ▪ Bus and rail service ▪ Elderly and disabled access and service ▪ Maintenance, policing, fare collection
Private Sector	
Public Private Partnerships ▪ Design/build/operate contracts ▪ Long term lease of transportation facilities ▪ Truck & rail transfer facilities	**Transit oriented development:** ▪ Maintenance of station access ▪ Parking and bus connections ▪ Pedestrian access ▪ Security
Ports and Intermodal Facilities ▪ Highway truck access ▪ Truck and trailer parking	**Media** ▪ Traffic reporters

The Federal Highway Administration, Federal Transit Administration, the American Association of State Highway and Transportation Officials, the American Public Transportation Association, the Transportation Research Board, and others in the transportation community are promoting best practices and innovative strategies to foster collaboration and increase the effectiveness of transportation operations. Regional collaboration also takes into account the activities of an array of non-transportation entities (e.g., public safety officials, major employers, chambers of commerce, convention and visitors' bureaus and special interest groups) that routinely affect or

depend upon transportation. Examples of ways such groups work together to improve the performance of the existing transportation system include:

- During incidents and emergencies, transportation system operators and public safety officials improve response times and decision-making by effectively coordinating and communicating with each other.
- During major highway reconstruction projects, public transit services and traffic operations work together to manage responses to changing demand.
- During special events that draw large numbers of people, public transit agencies, traffic operations, and public safety agencies minimize negative effects on the community by coordinating transportation operations and travel demand management.
- During rush hours, freeway ramp meters are used to adjust arterial signal systems and balance demand throughout the regional network.
- On a daily basis, traffic signals are coordinated across multiple jurisdictions to manage mobility and meet community travel needs.
- On a continuing basis, road users have access to reliable, timely, and relevant news about weather conditions and traffic situations, thanks to regional traveler information services that seamlessly deliver information across jurisdictions, agencies, and modes.
- Customers frequently move more easily between travel modes and across jurisdictions using multi-jurisdictional and multi-agency electronic payment systems for transit, parking and tolls.
- When hazardous materials are moving through an urban area they are electronically identified, monitored, tracked and coordinated by regional traffic management and public safety agencies to ensure safe, secure, and efficient intermodal movement.

The Federal Highway Administration recently released a primer on operational practices, *Regional Concept for Transportation Operations: The Blueprint for Action.* This document provides further guidance to state and local government agencies for planning and implementing congestion management and operations strategies.

Harnessing Diversity for Success

It is clear from this brief overview of how America's surface transportation system currently works that it rests on a foundation of 50 different state and local relationship structures. Despite the unifying force of federal-aid programs and planning requirements, the bulk of the financing, workforce, and action underpinning the nation's surface transportation services are state and local, and the division of roles and responsibilities for getting the job done is different in each state. These differences reflect the diversity among the constitutions, laws, political and administrative cultures of the states, as well as their specific transportation needs and their available resources to meet those needs. Creatively harnessing this diversity is the key to success for the nation's surface transportation system.

This assignment to harness diversity presents a significant challenge, however, because of a lack of nationally recognized performance standards. Beyond some very clear environmental standards that have statutory and regulatory enforcement—especially air quality compliance, wetlands protection, and highway runoff management—and a few mostly safety-related federal mandates such as helmet laws and minimum drinking ages—national performance standards for surface transportation systems like those found in U.S. DOT's strategic plan are not directly reflected in the federally required, collaboratively developed statewide and metropolitan transportation plans, action programs, and accountability structures that are in place at the present time. Intergovernmental performance management processes so not currently provide accountability for achieving shared outcome goals.

CHAPTER 2
THE CHALLENGE OF FRAMING TRANSPORTATION FINANCING AS AN INTERGOVERNMENTAL ISSUE

The growing gap between available highway and transit funding and the unmet needs of those programs, which has been recognized by Congress and others, has two sides to it. The demand side—consisting of program needs and expectations—largely reflects agreed upon program missions and the system planning required to carry out those missions. It is arrived at over time by consensus processes that combine technical, citizen, and political components. The supply side—consisting largely of available financing—is subject to debates over how efficiently the available funds are being utilized. The gap is the difference between these two sides of the equation. It can be filled by increasing funding, or decreasing program expectations, or doing some of each.

In the intergovernmental context, the gap can also be filled—from the viewpoint of any particular government or level of government—by arranging for another level of government or the private sector to pick up the tab. These options to shift responsibilities are frequently discussed when financial times are tight and a previous consensus on program missions no longer is as strong as before. Such discussions may involve redefining missions, as well as the roles of federal and state grant programs in carrying out the mission, and appropriate roles for private organizations.

The current highway and transit funding gap is triggering such discussions now, as it should, and the August 1, 2007 collapse of the Interstate 35W Bridge in Minnesota has heightened those discussions. Therefore, the first intergovernmental challenge is to make sure that the intergovernmental implications of any proposed shifts in program missions, financing arrangements, and the relative roles and responsibilities of the federal, state, and local governments are fully explored.

This section of the Forum's report addresses this challenge in three parts. First, it examines the current consensus about expectations for program performance and the relative roles and responsibilities for meeting those expectations. Next, it examines the present size of the gap between revenues and expenditures—and current estimates of its likely growth. And finally, it examines the prospects for changing the revenue side of the equation.

The Current Consensus about Performance Expectations

U.S. DOT's highway and transit programs have been striving to become more performance-based for many years. Since 1968, the highway program has been required to report the condition and performance of all the nation's highways to Congress. In 1984, Congress extended this reporting requirement to the nation's transit systems. Subsequently, these two reports were combined. The most recent edition of *Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance*, issued in 2006, is based on 2004 data (the latest available comprehensive figures). It compares the most recent performance measures tracked by

the federal government with prior years to provide a sense of recent trends. Many of the data are generated by state, metropolitan, and local transportation agencies.

For highways (including streets, roads, and bridges), the 2006 report states that:

- Total Highway spending by all governments increased 44.7 percent from 1987 to 2004.
- Federal highway spending accounted for 22.4 percent of the total in 2004, but it accounted for 43.8 percent of highway capital investment that year.
- Highway spending for system rehabilitation increased to 51.8 percent of the total in 2004—representing a continuing shift from building the system to rebuilding it.
- Most highway miles (76.5 percent) remained local; 20.4 percent were state; 3.1 percent were federal.
- Urban congestion and travel times increased in urban areas of all sizes.
- Fatality and injury rates both continued to decline through this reporting period.
- "Good" ride quality on highways increased somewhat, with rural roads leading the way. However, the mileage of all main roads providing "good" or "acceptable" rides declined slightly.

For all forms of transit, the 2006 report states that:

- Transit system coverage, capacity, and use in the United States continued to increase. Ridership increased 15.8 percent from 1997 to 2004—rising from 40.2 billion passenger miles traveled to 46.5 billion.
- Of the nation's 640 urban transit operators, 600 are public agencies; most are local; a few are state agencies.
- The average condition of urban buses remained about the same.
- The average condition of transit rail cars improved slightly.
- Average operating speeds experienced by riders were up a bit, and crowding was down slightly.
- Transit fatalities were about the same or lower, except on light rail systems; injuries declined on all types of transit.
- Local governments were the largest source of revenues for transit (34.6 percent); system-generated revenues (largely fares) were next (28.1 percent).
- State and federal aid programs contributed smaller amounts (19.7 percent and 17.6 percent respectively).

Although most of these trends are in the right direction, they still leave very substantial gaps to be filled as documented and described later in this report.

U.S. DOT has been a strong leader among federal agencies in performance-based strategic planning ever since the earliest years of implementing the *Government Performance and Results Act of 1993*. Its most recent Strategic Plan for Fiscal Years 2006-2011 establishes formal strategic goals for the Department and its agencies in:

- Safety
- Reduced Congestion
- Global Connectivity
- Environmental Stewardship
- Security, Preparedness and Response
- Organizational Excellence

Each of these goals has outcomes, performance measures, and milestones. The department's individual modal administrations (Federal Highway Administration, Federal Transit Administration, and others) further detail these goals, measures, and milestones in their own long range strategic plans and annual performance plans. The details of those plans change continually, reflecting the realities of program experience, actual funding levels, and revised priorities established by successive reauthorization acts. The U.S. DOT's strategic planning process and the periodic congressional reauthorization process both provide opportunities for significant amounts of intergovernmental input to federal goal setting.

U.S. DOT is also among the strongest federal government leaders in developing and supporting metropolitan and statewide planning processes that provide the foundation for meeting national goals. These sub-national planning processes have grown and matured greatly over the past 40-some years as a result of evolving federal standards and substantial federal financial and technical assistance. These sub-national transportation plans are now fiscally constrained—to ensure they will generate realistically fundable systems and projects. These plans are also required to be coordinated across transportation modes, are thoroughly evaluated to ensure compliance with national environmental standards, and are developed with broad stakeholder and public involvement designed to ensure local and state support for specific implementation projects proposed for Federal financial assistance.

Box 3 illustrates the goals structure that has evolved over time to guide metropolitan and statewide planning processes. It contains six main goals, with more specific related sub-goals under each one. The six goals are: improved mobility for people and goods, reduced congestion, greater safety, enhanced critical infrastructure protection, more effective environmental protection, and higher levels of social equity (often referred to as environmental justice). These outcome-oriented performance goals undoubtedly apply differently in each state and metropolitan area, so the planning process in each place tailors the plans to meet the conditions found there.

The statutory federal "planning factors" required to be considered in all statewide and metropolitan transportation planning are consistent with these four goals, although they are structured slightly differently. Currently, they place greater emphasis on inputs (such as system

operation and preservation) and they do not bring social equity forward strongly. Box 4 compares the planning factors with the goals.

Box 3. Goals/Visions/Service Level Agreements

Mobility and Economic Vitality Up ↑
- People
- Goods
- Global connectivity and commerce facilitated
- All major population centers connected to national transportation systems

Safety Up ↑
- Deaths (from accidents) reduced
- Injuries (from accidents) reduced
- Hazardous materials accidents/consequences reduced

Environmental Protection Up ↑
- Air quality improvement
- Noise reduction
- Water pollution control
- Energy efficiency
- Climate change avoidance
- Wetlands and habitat protection
- Hazardous materials spill response and clean-up times, and consequences reduced

Congestion Down ↓
- Shorter, more predictable commute times
- Non-commute trips more convenient too
- Incident management efficiency improved
- Robust mode-choice available
- Efficient community development patterns
- Just-in-time inventory/delivery reliability
- Uncongested access to ports, airports, intermodal transfer points

Critical Infrastructure Protection Up ↑
- Natural disaster consequences minimized
- Terrorism/security consequences minimized
- National defense facilitated
- Facility and Equipment Maintenance

Social Equity Up ↑
- Equal access by various demographic groups
- Economically distressed communities avoided

Box 4. Planning "Factors" Compared with Outcome-Oriented Goals

Statewide and MPO Planning Factors*	Performance Goals
1. Economic Vitality	▪ Mobility Up
2. Safety of Transportation System	▪ Safety Up
3. Security	▪ Critical Infrastructure Protection Up
4. Accessibility and Mobility of People and Freight	▪ Mobility Up/Congestion Down/Social Equity Up
5. Environment, Energy Conservation, Quality of Life, Land Use, and Infrastructure	▪ Environmental Protection Up/Congestion Down
6. Intermodal System Integration and Connectivity	▪ Mobility Up
7. Efficient System Management and Operation	▪ Congestion Down
8. System Preservation	▪ Safety Up/Critical Infrastructure Protection Up

*Source: DOT, "Statewide and Metropolitan Transportation Planning Final Rule," *Federal Register*, February 14, 2007, pp. 7264-7270.

The intergovernmental and industry dialogues that establish, renew, and refine these goals are continuing and dynamic. It stretches back into the 1960s, and has established a strong tradition of collaborative goal-setting. The following recent case illustrates how this process works to surface state and local thinking at the national level.

On July 23, 2007, The American Association of State Highway and Transportation Organizations (AASHTO), along with seven other national associations representing a broad range of transportation interests, issued a new vision document, *Transportation: Invest in Our Future—A New Vision for the 21st Century*. It represents a substantial amount of continuity with the past, but also adds several new elements as well as a set of recommendations for improving the financing of existing and new elements of the service delivery system. One new element in this proposal is a national system of Critical Commerce Corridors. This multimodal system would be designed to remove bottlenecks in freight movement and separate it somewhat from the present highway system to relieve the pressure of growing truck traffic on other roads and highways in those critical geographic areas, and to help keep America competitive in the global marketplace. Funding for this new system is proposed to be separated from the Highway Trust Fund to relieve financial pressures on it by providing new funding from freight industry sources.

The organizations that partnered with AASHTO on this particular effort were:

- American Automobile Association
- American Council of Engineering Companies
- American Public Transportation Association
- American Road and Transportation Builders Association

- American Trucking Associations
- Association of American Railroads
- The Associated General Contractors of America

Of course, many other organizations also submit their own visions and proposals from time to time, and several other current ones were reviewed for this Forum report. Examples include the Surface Transportation Policy Partnership's *From the Margins to the Mainstream: A Guide to Transportation Opportunities in your Community* (2006); National Association of Counties (NACo) testimony before the National Transportation Commission, March 21, 2007; and National League of Cities (NLC), 2006 Transportation Infrastructure and Services (2006).

These kinds of dialogues are encouraged as an essential part of the ongoing dialogue about revising goals and performance measures over time as the U.S. DOT's strategic plan and program legislation are revised periodically. Although U.S. DOT's plan tends to focus more on the federal role, it sets a framework for the statewide and metropolitan planning that fleshes out the nation's more complete surface transportation plan.

The agreements on visions and goals that evolve from these continuing dialogues—including associated social and environmental policy goals and regulations—help to determine the relative federal, state, and local roles and responsibilities for both financing and delivering the transportation services that ultimately are reflected in federal and state legislation. In turn, these agreements provide a way of setting the public expectations against which unmet transportation "needs" and priorities can be calculated and responded to in adopted statewide and metropolitan transportation plans and action programs.

Yet, despite all this performance-based work, no tightly organized accountability process exists in America's surface transportation programs. There are no statutory standards for service levels to be achieved, no direct roll-up of local, metropolitan, and state performance measures that are linked to federal-aid funding decisions, few if any performance targets other than air-quality conformity, and few or no consequences when levels of service decline. The fact that so much responsibility for highway and transit services delivery resides with state and local officials substantially diffuses accountability for performance, but it does not make it impossible.

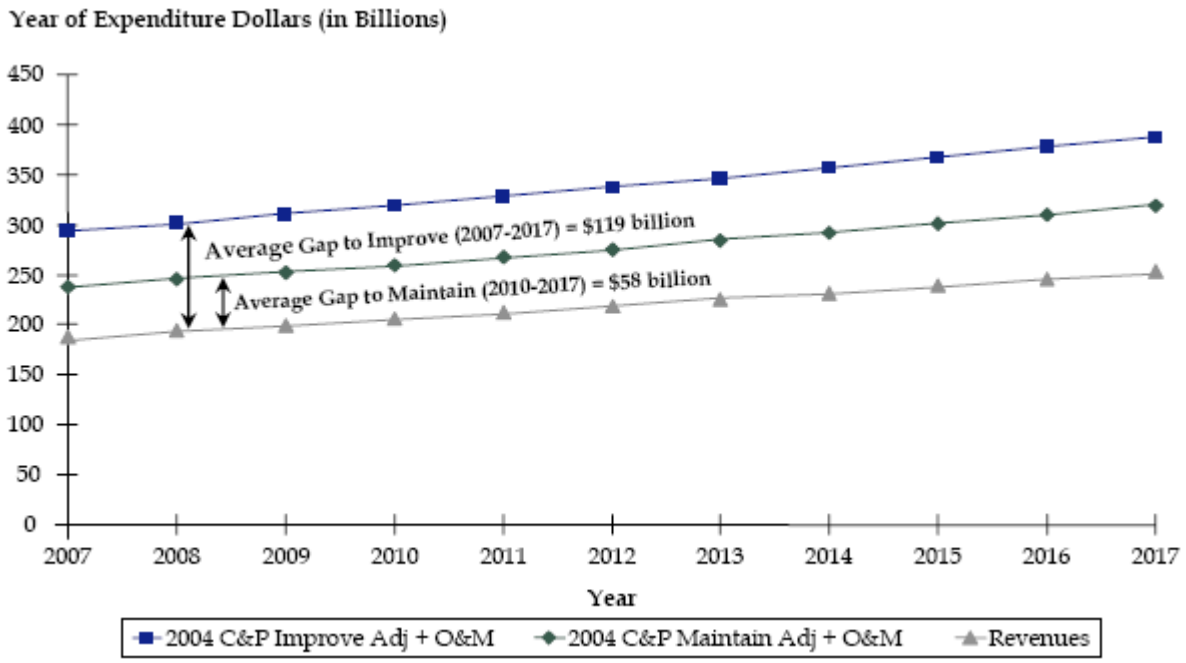
Recognized Gaps between Available Funding and Program Needs

The 2006 *Conditions and Performance Report* estimates the current capital costs to fully maintain the existing highway and transit systems, as well as the costs to expand and enhance existing services to levels that DOT system-wide benefit-cost analysis indicates would be justified. In both cases, the levels of potentially justifiable investment are significantly higher than the existing levels of investment being provided by all levels of government and supplemented by the private sector. Although the quality of available national data, analytical methods, and estimates are controversial, policy briefs prepared for the National Governors Association and the U.S. Chamber of Commerce cite these findings. And, the most recent reauthorization act for the federal highway and transit programs—SAFETEA-LU passed in

2005—established two separate national commissions to study the future of those programs and the revenue sources that support them. Both commissions are at work now (in late 2007).

The Transportation Research Board's December 2006 NCHRP report provides a thorough exploration of *Future Financing Options to Meet Highway and Transit Needs, Contractor's Final Report for NCHRP Project* 20-24 (49). The NCHRP report extends the forecasted investment and demand rates through the 2007-2017 decade and finds that the gap between them will continue to widen if nothing is done to increase revenues. Figure 17 shows how the gap-to-maintain existing systems, and the gap-to-improve them are both expected to widen.

Figure 17. Highway and Transit Needs and Revenues 2004 C&P Funding Gap Analysis



SOURCE: NCHRP Report Figure 2.9, p. 2-16.

Looking at this picture, the Transportation Research Board added the unsustainability of the transportation finance system to its top-nine list of Critical Issues to focus on in 2006 (the latest one adopted). The TRB Executive Committee's description of the unsustainable finance issue in its Critical Issues document (pp. 6-8) is shown on the following shaded page.

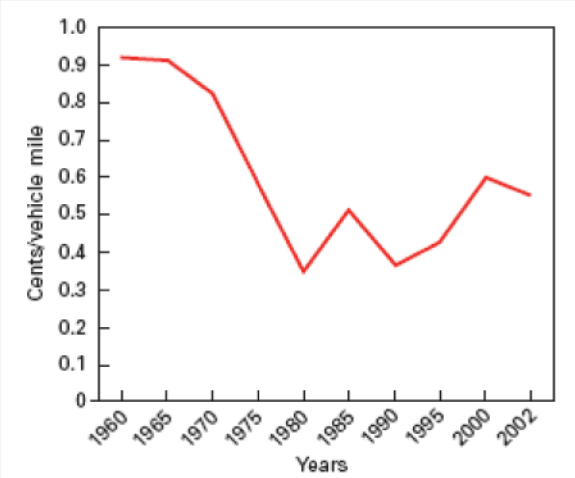
Finance

Inadequate Revenues

The difference between transportation demand and supply has become so great that the increase in congestion experienced by travelers should come as no surprise. All modes must contend with aging infrastructure and capacity problems, without adequate revenues to respond. In part, the mismatch results from methods of financing publicly owned facilities:

- For highways, the financing system based on gas taxes established more than 50 years ago has served the nation well but in recent years has not kept up with demand and the effects of inflation on revenues (Figure 4)….

Figure 18. Real Gas Tax Receipts Per Passenger Vehicle Mile Traveled, 1960-2002 (in 1984 dollars)



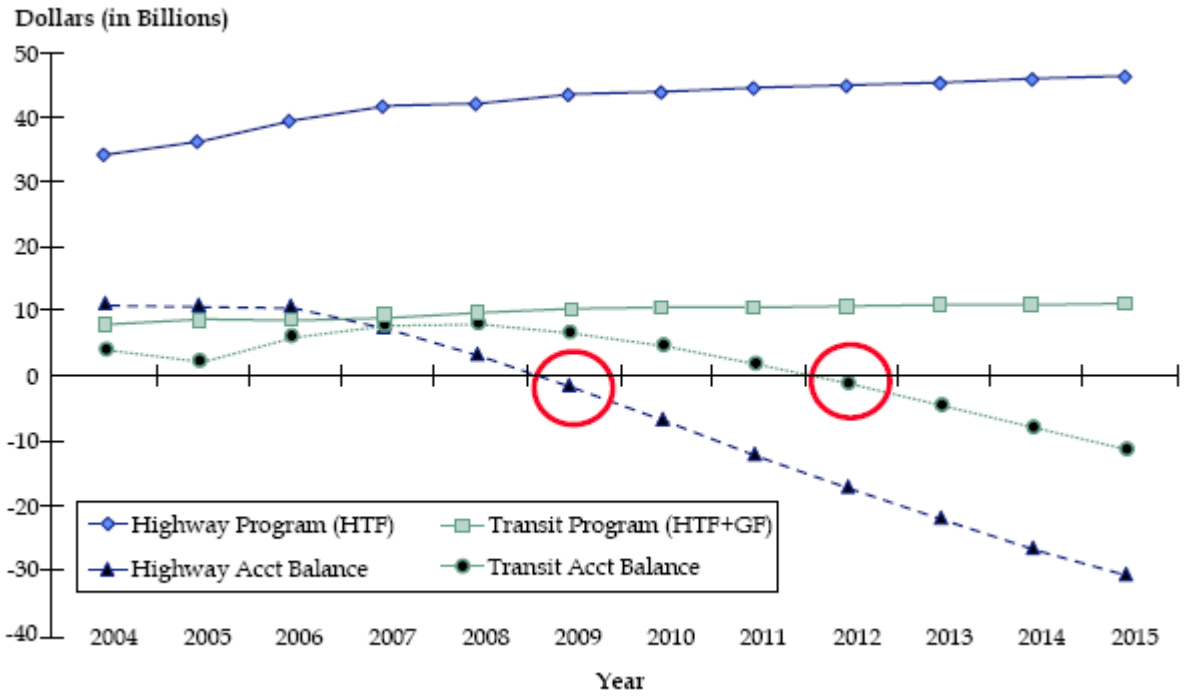
- After several decades of increased funding and despite sharp increases in ridership in recent years, the nation's public transit systems face considerable financial problems. The expansion of transit systems expands the requirements for operating funds, which largely come from fares and from state and local government sources. Such sources are not increasing as fast as necessary.

Until the recent sharp run-up in gasoline prices, public opinion polls showed that voters favored fuel tax increases if the revenue would be devoted to improvements in roads and transit systems. In response to capital needs in surface transportation, states and localities are opening up other sources of revenue, such as sales taxes, road tolls, and other user fees. In November 2004, general election, voters approved 72 percent of state and local referenda to raise or extend taxes dedicated to transportation. Although new revenue streams are needed, some tax sources—such as sales taxes—move away from a user pays principle and place a disproportionate burden on those who have low incomes. Moreover, these fundamental shifts in financing have significant implications for a national, systems-level approach to transportation policy…

The past finance strategies for public investment in highways…have much to recommend them: they are funded by users, are inexpensive to administer, and have provided steady revenues for building new capacity and operating systems. But exclusive reliance on these approaches cannot continue. Supplements include more direct charging at the time of highway use and debt financing or revenue bonds repaid by user fees. Perhaps more importantly, wiser investment of scarce resources, along with revenue-raising mechanisms that give users incentives to choose the most cost-effective means of travel, will become a larger component of transportation finance.

Figure 19 shows how the currently authorized federal spending for highways and transit impacts the Trust Fund's account balances for both highways and transit. According to this analysis, the highway balance is expected to turn negative in 2009, followed three years later by the transit balance. Speculation has begun to suggest that substantial cuts in currently authorized spending levels may be necessary, given the current highly constrained federal budget environment. (Walters)

Figure 19. Estimated Highway and Transit Program Levels and HTF Account Balances Through 2015



SOURCE: NCHRP Report, Figure 2.10, p. 2-17.

On July 11, 2007, half a year after this TRB analysis was completed, the Administration released its mid-year budget review for FY 2008, and announced that the Trust Fund's shortfalls were becoming more serious than previously expected. (*Roll Call*, 6) Projected shortfalls by the end of FY 2009, were expected to be at least $3.8 billion (instead of $238 million), headed for $9 billion in 2010 and $15 billion in 2011. Congressional decisions to release Revenue Aligned Budget Authority (RABA) funds would increase the projected FY 2009 shortfall to $4.3 billion. CBO's estimate of the August 2007 shortfall was $5.1 billion in the highway account by the end of FY2009. (*Transportation Weekly*, September 5, 2007, p. 2)

In placing DOT's transportation programs on its High Risk List, GAO explained that:

> The nation's economic vitality and its citizens' quality of life depend significantly on the efficiency of its transportation infrastructure. This efficiency is threatened by increasing congestion…
>
> As congestion increases, the federal government faces the challenge of providing funds to help maintain and expand the nation's transportation system and ensuring that these funds are used efficiently. However, revenues from traditional funding mechanisms may not keep pace with the demand. Furthermore, the nation's long-term fiscal challenges limit the ability of decision makers to look to other revenue sources that are currently funding security and other vital needs, raising questions about the ability of federal programs to provide the robust growth that many transportation advocates believe is required to meet the nation's mobility needs…
>
> Revenues to support the Highway Trust Fund—the major source of federal highway transit funding—are eroding…that erosion will continue with the introduction of more fuel efficient vehicles and alternative-fueled vehicles in the coming years, raising the question of whether fuel taxes are a sustainable source for financing transportation…funding authorized in the recently enacted highway and transit program legislation is expected to outstrip the growth in trust fund receipts…will steadily decline and reach a negative balance by the end of fiscal year 2011…
>
> In the face of these constraints, state and local governments are pursuing alternative mechanisms….

Another view on the current condition of transportation facilities is provided by the latest report card on the nation's infrastructure issued by the American Society of Civil Engineers. This report card gave bridges a C, roads a D, and transit a D+. ASCE also gave airports, navigable waterways, and railroads—for which highways serve as the "last mile" in an increasingly vital global freight supply line—Cs and Ds. The August 2007 Interstate 35W bridge collapse in Minnesota was a visible reminder that current conditions need attention.

Thus, many groups agree that something should be done to bring transportation revenues back in line with established and growing demands for transportation services. Obviously, these infrastructure needs must compete for federal, state and local funds with other program purposes—and the needs in almost every other program area also exceed the funding available. So, clear and persuasive justification for essential transportation spending, and also a convincing means of prioritizing transportation projects will be necessary to obtain needed funding. Demand management and improved operations to help reduce the need for new capital investment will be important parts of filling recognized funding gaps, but they are not expected to be sufficient by themselves.

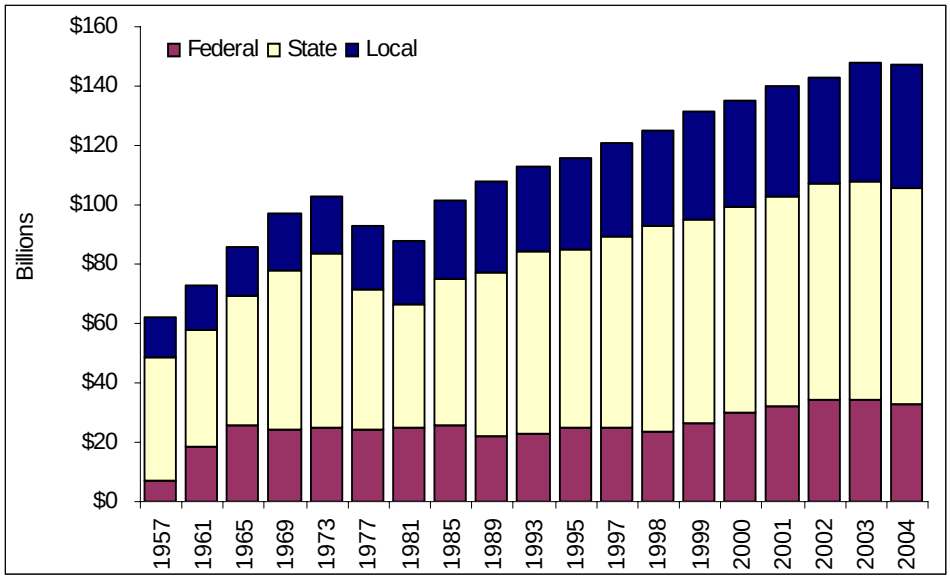
Glimmers of Hope

When governments make the case effectively that increased investments in transportation will produce positive results, research has shown that voters generally approve additional revenues. The largely positive results of recent referendums and initiatives for transportation have been widely reported (NCHRP and NCSL). But the success of these state and local revenue enhancement efforts seem to depend on two conditions: (1) a clear focus on improving performance and results for voters and consumers of transportation services, and (2) a clear and equitable link between the increased revenues and improved performance. In the past, dedicated

motor fuels taxes effectively made this link, but as travel modes have become more diverse, and as dedicated user fees have come to provide a smaller proportion of overall transportation revenues, these important links may be weakening. Referenda endorsing dedicated local property and sales tax receipts tap beneficiary-pays sources of revenue, but they often are less directly related to users than the federal and state fuel and vehicle tax shortfalls for which they are compensating.

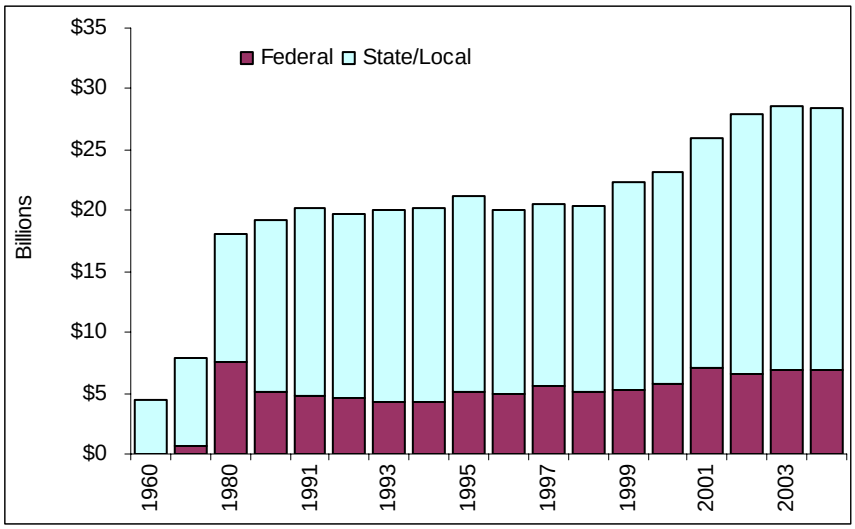
As the local governments take greater responsibility for raising revenues to meet highway and transit needs, they rely more heavily on the general fund, property taxes, and sales taxes (64 percent, combined) than do the states (12 percent) and the federal government (9 percent). Figures 20 and 21 show the inflation-adjusted growth in highway and transit spending over the past four decades. The federal contribution to highways has been largely flat since 1965. At the same time, federal contributions to transit grew rapidly from 1970 to 1980, then dropped back substantially in 1990 when operating assistance was discontinued, and gradually climbed back nearly to the 1980 level by 2004. During this time, the combined state and local funding climbed steadily. For highways, the amount of federal funding remained almost flat while state and local dollars both grew significantly. As shown later in Table 5 (p. 56), state motor fuel taxes are now higher than the federal tax in 33 states. In addition, states have authorized local option fuel taxes in 16 states, though this tax has not yet become a major revenue generator at that level.

Figure 20. Highway Expenditures by Government Type (1957-2004) in 2004 Dollars



SOURCE*: U.S. Department of Transportation, 2006 Conditions and Performance Report, from Highway Statistics Summary to 1995, Table HF-210; Highway Statistics, various years, Tables HF-10A and HF-10. Inflation adjustment—Bureau of Labor Statistics Inflation Calculator.*

Figure 21. Transit Expenditures by Government Type (1960-2004) In 2004 Dollars



SOURCE: *U.S. Department of Transportation, 2006 Conditions and Performance Report, from National Transit Database/Office of Management and Budget. Inflation adjustment – Bureau of Labor Statistics Inflation Calculator*.

Overall, however, the shift to larger shares of funding responsibility by states and local governments may be making it more difficult to sustain revenues at levels consistent with demonstrated program needs. This difficulty occurs because these government's revenues are generally not as directly related to the services being delivered, thereby making them harder to justify relative to the spending needs of other programs.

Recent policy initiatives to encourage public-private partnerships (PPPs or P3s) and shift more responsibility for raising transportation investment capital to the private sector—coupled with highly visible accountability for results—may help to off-set the loss of direct links between funding and performance.

Transportation revenue systems need to be redesigned to reflect these shifts, as well as the evolving program performance demands. Certainly, revenues should not be expected to raise enough to fund all possible economically justified transportation projects. The old project "wish lists" are no longer as unconstrained as they were in the past. Most projects and investment plans are now better justified by benefit-cost analysis, fiscally constrained state and metropolitan planning, thoughtful trade-offs among operations, maintenance, reconstruction and new construction, efficient coordination among transportation modes, and alternative land development patterns. Even so, not all "justified" investments can be funded. Careful prioritization is still needed, and it is more often being reasonably and effectively built into the state and metropolitan planning processes. For the most part, transportation spending that does occur is fairly well justified, reasonably high priority, and intergovernmentally supported.

Even politically earmarked projects—which are often cited by critics to question the efficiency of transportation programs—often were drawn from fiscally constrained, environmentally

compliant system plans in the past, or were retrofitted into such plans before being implemented. The highly visible cases of unjustified projects that have sometimes come to light, and political controversies over which modes are being assisted more than others (rightly or wrongly), have been more the exception than the rule.

Nevertheless, it is important to minimize this practice. Earmarking has grown rapidly in the last few years. In FY2006, according to U.S. DOT's Inspector General, it accounted for 15.5 percent of FHWA's appropriation and 28 percent of FTA's appropriation, and 99 percent of these earmarks skirted the normal planning process in some way. Although some earmarked projects would have been funded even without the earmark, others were of lower priority, and a few would have been ineligible for funding without a new provision in the FY2006 appropriation law that exempts earmarked projects from the normal eligibility requirements. (U.S. DOT, Inspector General's Report, September 7, 2007, p. 5). This growing phenomenon undermines the planning process and damages the credibility of U.S. DOT programs.

Recent Trends in Transportation Financing

Present financing of the nation's highway and transit programs has been pieced together from a very wide range of revenue sources drawn upon by the federal, state, and local governments. Table 4 lists the main sources currently being used and shows which levels of government are using them.

Table 4. Main Revenue Sources Supporting Highway and Transit Programs

Revenue Sources	Used By			
	Federal Government	State Governments	Local Governments	Transit Authorities
Fuel Taxes	*	*	*	
Vehicle Taxes and Fees	*	*	*	
Tolls and other User Fees		*		*
Transit Fares and Other Revenues Generated by Operations		*	*	*
Beneficiary Charges (impact fees, tax increment financing, mortgage recording fees, etc.)		*	*	
Property Tax (dedicated)		*	*	*
Sales Tax (dedicated)		*	*	*
Other Dedicated Revenues (lotteries, cigarette taxes, room taxes, rental car fees, etc.)		*	*	*
General Fund (income, property, sales, and many other sources)	*	*	*	*
Intergovernmental Transfers (federal and state governments)		*	*	*
Bond Market Debt		*	*	*

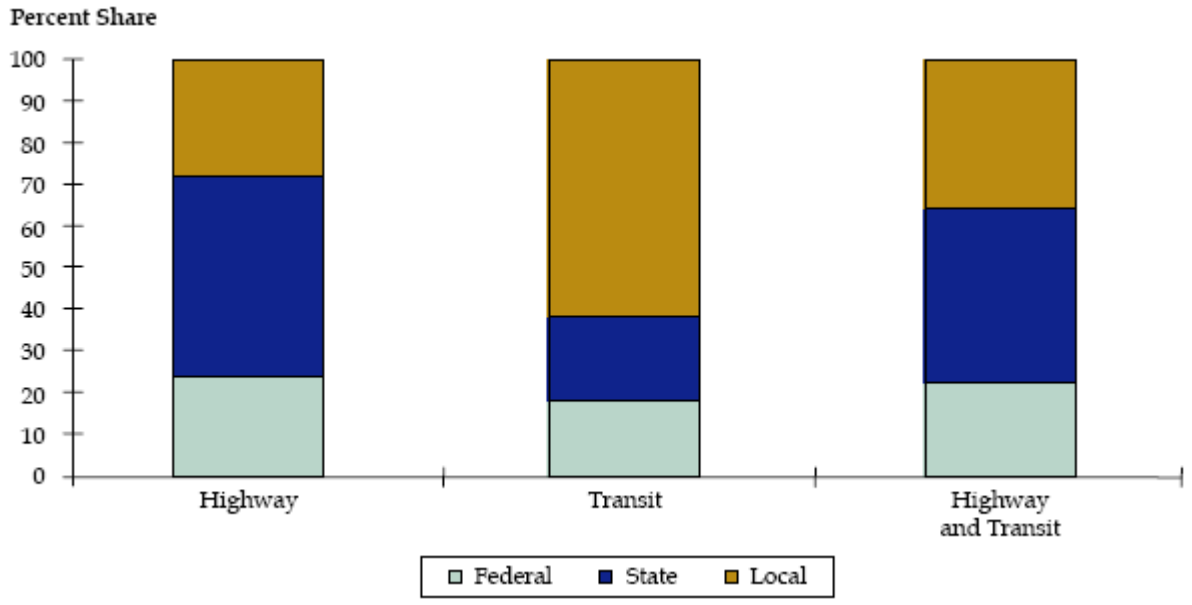
SOURCE: Based on NCHRP, Table 3.1, p. 3-2, and other sources.

It can be seen from Table 4 that all levels of government make use of multiple revenue sources. The same or very similar sources often are drawn on multiple times. All three levels of government use some form of motor fuels and vehicle-related taxes, as well as the general fund.

The fuel and vehicle-related taxes have been the mainstay of the large federal and state highway programs for many years, and they provided reliable and sustainable support until recent years. The state and local governments also rely on other special dedicated taxes, tolls and fares, general funds, and miscellaneous sources. However, they mix the revenues together in different proportions from state-to-state and from locality-to-locality. Now, as federal aid—based mostly on fuel and vehicle taxes, with some supplementation from the general fund—is becoming less certain, other sources are becoming more important at the state and local levels of government.

For 2004, overall results of the combined revenue raising efforts, in rounded proportions, show that the states raise about 50 percent of all highway funding for total capital and operating purposes (while being responsible for only about 20 percent of all roads); local governments raise about 60 percent of all capital and operating funding for transit (while operating almost all transit systems); and the federal government supplies roughly 20 percent of the capital and operating funds spent on each of these modes (while owning and operating almost no facilities itself). When funding for both modes is combined, local governments supply about 35 percent of all capital and operating funds, the states provide 45 percent, and the federal government adds about 20 percent. Clearly, intergovernmental transfers of the revenues raised are a prominent feature of this complex financing system. These revenue raising relationships are shown graphically in Figure 22—separately first for highways and transit, and then combined.

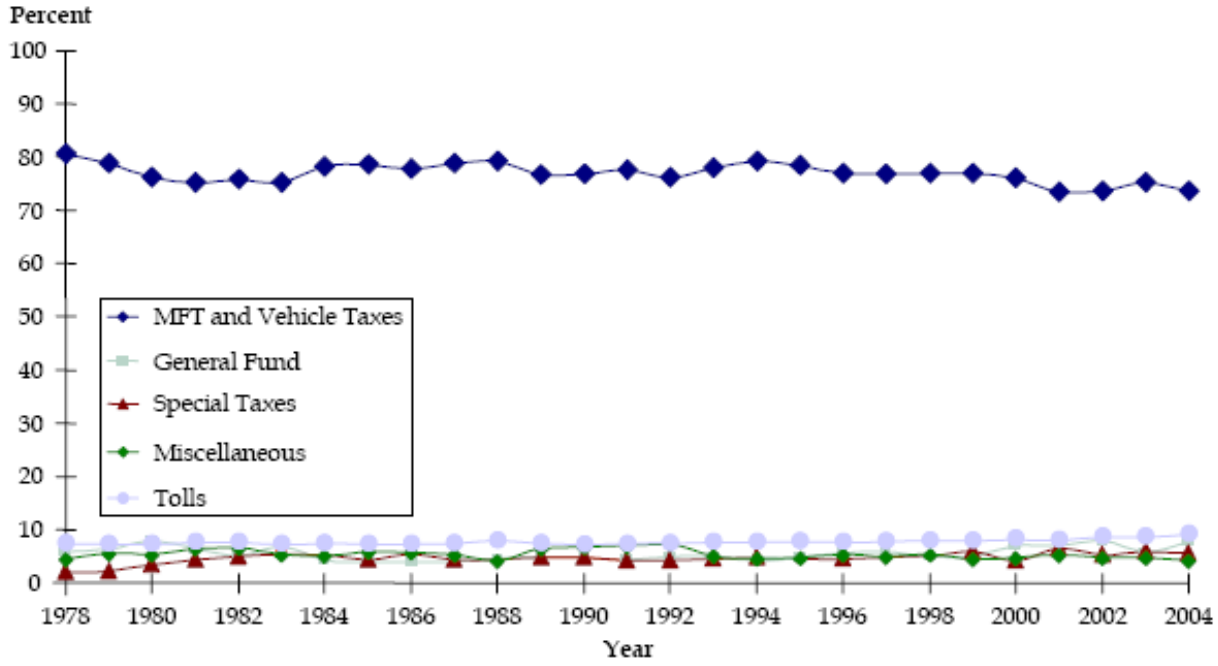
Figure 22. 2004 Highway and Transit Funding by Level of Government



SOURCE: NCHRP Report, Figure 2.7, p. 2-12.

Figures 23 and 24 show, respectively, how the state and local highway funds have been raised over the 1978 - 2004 time period. State highway funding nationwide has been dominated (around 80 percent) by dedicated motor fuel and vehicle taxes, but this dominance has been slipping gradually. This slippage has put pressure on the other four state sources to increase. All these other sources have been quite small (well under 10 percent in earlier years), but each has moved up toward 10 percent as the motor fuels and vehicle taxes have slipped. State general funds, special transportation-dedicated taxes, tolls and miscellaneous sources, together, are moving up toward 25 percent of all state transportation funds. Toll collections are most important at the state level.

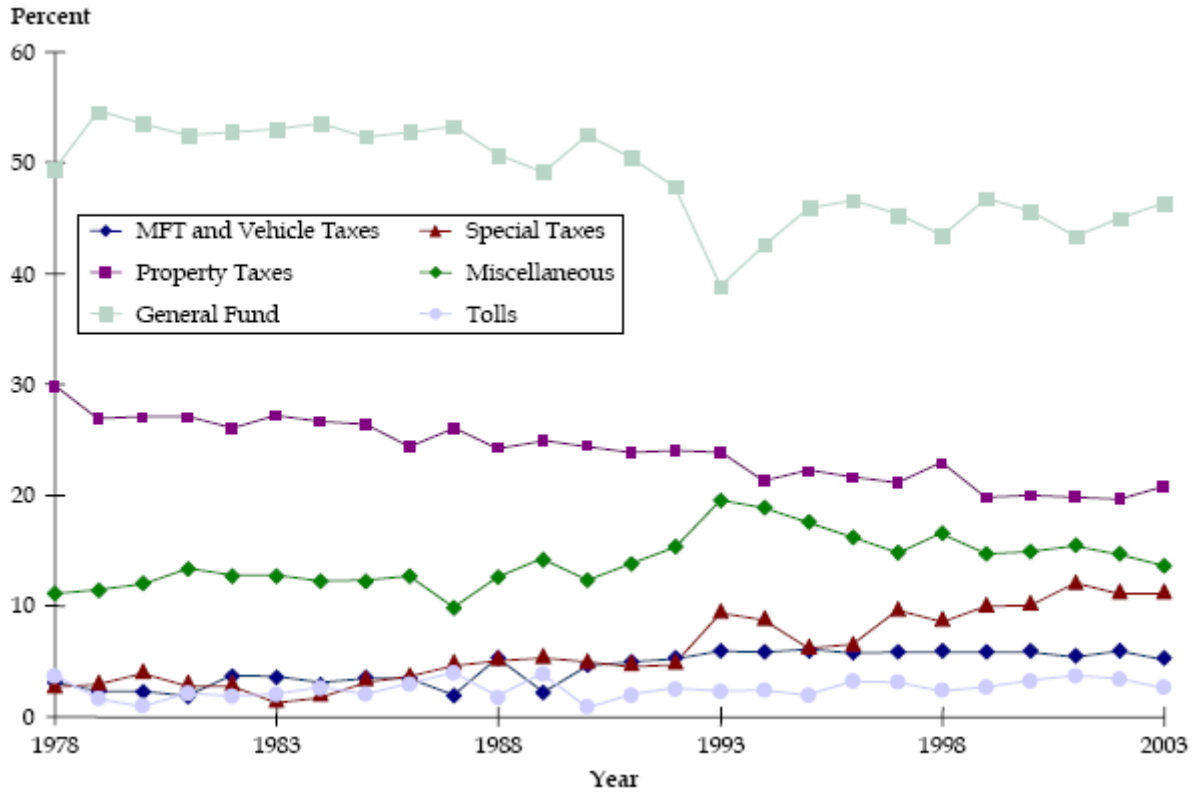
Figure 23. State Highway Funding Sources Fiscal Years 1978-2004



SOURCE: Highway Statistics, Table LGF-1., as reported in NCHRP Report, Figure 2.2, p. 2-6.

Figure 24 shows how local highway funds—which predominantly serve local needs—have been raised over the 1978-2003 period. General funds and property taxes have dominated these revenue systems, although they have been declining in proportion to other sources. Motor fuel and vehicle taxes—the mainstays of federal and state transportation financing—have grown some at the local level, but still contribute only about 5 percent of locally raised revenues. Tolls also contribute less than 5 percent at this level of government—where approximately 80 percent of the roads are managed. Special taxes dedicated to transportation (largely retail sales) have grown fastest, but still yield only about 10 percent of the total. Miscellaneous revenues grew strongly until 1993, but have dropped since then to the level of special taxes.

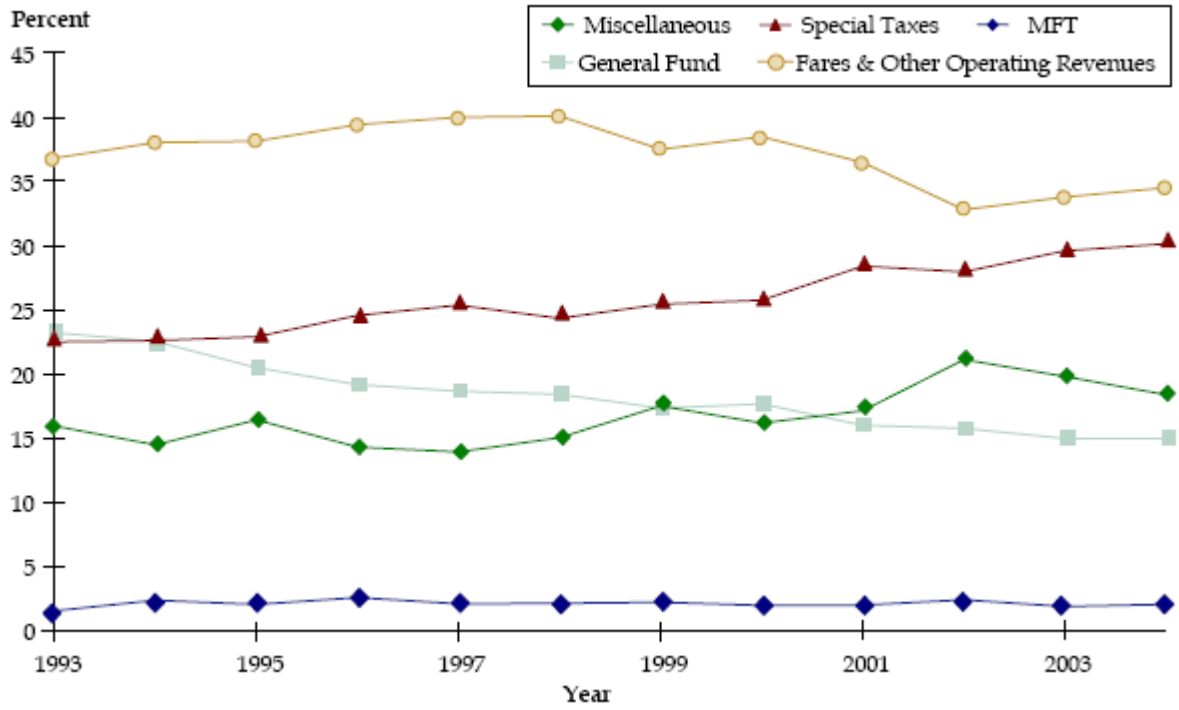
Figure 24. Highway—Local Funding Sources



SOURCE: Highway Statistics, Table LGF-1, as reported in NCHRP Report, Figure 2.4, p.2-8.

Figure 25 shows that state and local revenues raised to support transit have been dominated by fares (now about 35 percent of the total) and special earmarked taxes such as retail sales (now about 30 percent). Revenues from fares have been dropping some as the proportion provided by the special taxes has risen. Motor fuel taxes provide about 15 percent, but general funds have dropped from over 20 percent to about 15 percent. Miscellaneous sources contribute only a couple percent of state and local transit revenues.

Figure 25. Transit—State/Local/Agency Funding Sources



SOURCE: NDT Data, as reported in NCHRP Report, Figure 5, p. 2-9.

Several factors help to explain why these interlocking revenue systems are becoming less able to provide the funding needed to meet transportation demands.

- Most immediately, the mainstay motor fuels taxes have not kept pace with either inflation in general or with the even faster rising cost of street and highway construction. Because the federal tax—and the similar tax in most states—is not indexed to costs, it must be explicitly raised by Congress and state legislatures if it is to maintain its buying power—and this has not happened on a regular basis.
- The motor fuels tax is also structured in most cases as a cents-per-gallon tax. So, as fuel efficiency goals are realized over time, this source will yield less revenue in relation to the amount of travel that needs to be accommodated. This effect is expected to be gradual, but eventually it could become significant and could create pressure to reduce federal and state aid for transportation.
- Spending from the federal Highway Trust Fund has been exceeding revenue proceeds by about $5 billion per year recently.
- Federal and state general funds are experiencing significant demands from other programs that are likely to limit their role in filling transportation financing gaps.
- Reductions in federal and state aid for transportation would shift greater responsibility for raising revenues to local governments that already rely more heavily on general revenues

to support transportation. Transportation costs cannot easily be escaped by local governments because most roads and transit systems belong to them.

- Many transportation costs are imposed by federal-aid requirements. Reductions in the amount of federal aid—without equivalent reductions in requirements for planning, analysis, public involvement, environmental protection, open access, homeland security and more—can be expected to increase arguments about unfunded federal mandates.
- Raising additional revenues for transportation is likely to be most difficult and least equitable for local governments because of their limited geographic extent, smaller and often less diverse populations, and few opportunities to spread impacts over a broader base.

If current levels of federal aid for transportation programs are not maintained, adjustments to the present intergovernmental finance system will need to be made by state and local governments. Chapter 3 describes many options for enhancing revenues.

CHAPTER 3
THE CHALLENGE OF UNDERSTANDING OPTIONS TO STRENGTHEN FINANCING

As Congress, the two national transportation finance commissions, and many others wrestle with the issue of providing sustainable financing mechanisms to support demonstrated surface transportation program needs, many proposals are being offered for consideration by diverse parties. Evaluating these proposals requires consideration of three fundamental sustainability criteria: (1) the ability of the revenue sources to keep up with inflation and buying power within its program area, (2) the ability to stay in step with program demands—as they grow or recede along with changes in those demands, and (3) whether the revenues are dedicated to the program—so they will be there when needed. Examining these three criteria provides a point of departure for understanding the options that are on the table.

Linking Performance to Funding

Transportation services are very closely related to market forces, and they can be "priced" similar to the way other services and products are priced in the marketplace, so they can grow in step with demand and continue to meet performance goals. In fact, many of the largest components of transportation are financed that way now—including the vehicles that individuals and businesses buy and pay to operate and maintain. Highways, streets, roads, and public transportation have been and are now financed largely with user-pay and beneficiary-pay fees—rather than with general taxes. Gas taxes, vehicle taxes, tolls, transit fares, and public parking fees—dedicated to the support of transportation programs—are examples.

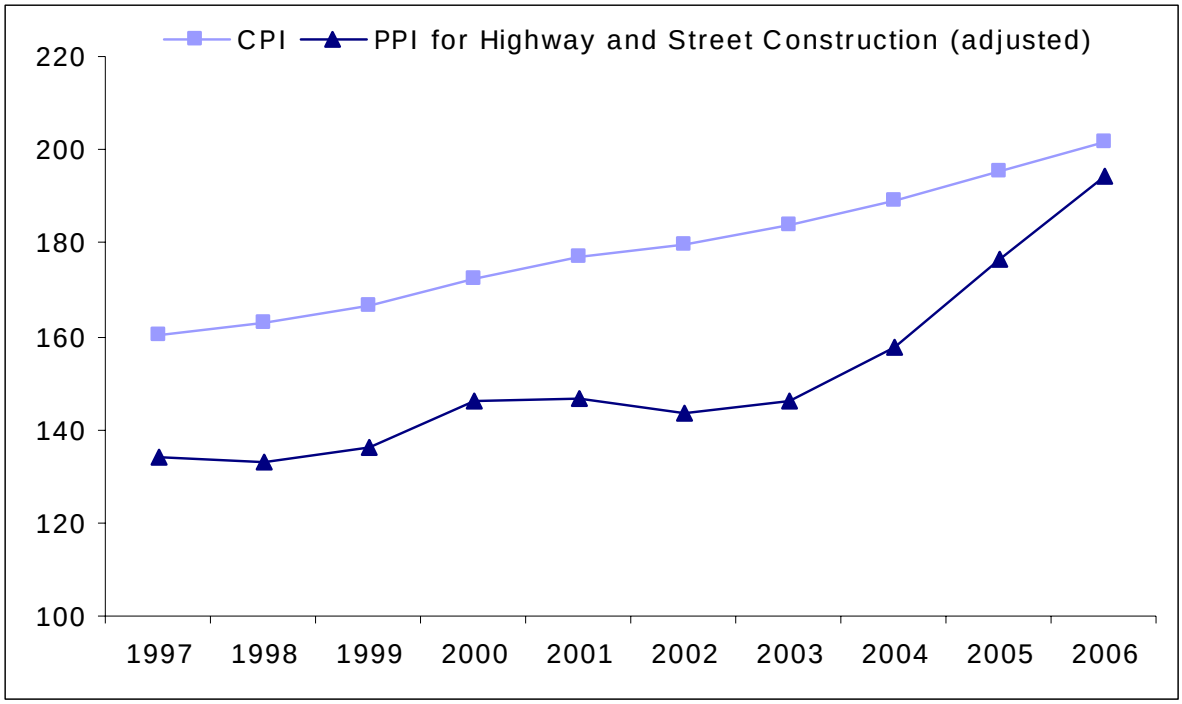
About 90 percent of federal highway and transit revenues is raised from user fees, and two-thirds of the state revenues come from the same place. Although local governments draw on these sources much less than the state and federal governments (around 12 percent, counting transit fares), much of the transportation money they spend comes from user-based state and federal aid. The user-pays principle has been well accepted for many years, and it has served the highway and transit programs well until recently. The Forum Principals believe that this principle should remain a significant feature of the nation's transportation finance system in the future—even as this system is reformulated to reflect changing forces arising from new technologies, changing program needs, new energy policies, and enhanced environmental protection policies.

Adjusting for Cost Increases

Many technically feasible ways are available to keep dedicated fuel and vehicle revenues in step with inflation and with changes in transportation-related buying power. Inflation adjustments are made automatically in many governmental programs on both the revenue and payment sides of the ledger. In transportation programs, a few states have indexed their motor fuels taxes to inflation; although some state legislatures have intervened to keep automatic increases from taking effect, this approach may have some advantages over having to specifically enact the equivalent tax increase on a regular basis. The federal gas tax, for example, has not been increased for 14 years, and the increase needed now to maintain its 1993 buying power (if

measured by the general cost-of-living inflator) would be 10 cents according to the December 2006 NCHRP report. That's a lot compared to less than a penny per year if these inflation increases had kicked in regularly over this same time period. The amount of this adjustment would have been somewhat greater (and perhaps more realistic in the last few years) if based on the increases in costs of road-building. Figure 26 compares these two cost indexes.

Figure 26. BLS Producer Price Index Highway and Street Construction Compared to Consumer Price Index



PPI is adjusted to match CPI index year.
SOURCE: Bureau of Labor Statistics

Meeting Changing Program Needs

Getting revenues to stay in step with program demands may be more difficult. The present motor fuels taxes have not been tracking this recently, because they are based on the number of gallons of fuel used instead of the miles traveled. As energy policies have encouraged increased fuel efficiency, the amount of revenue generated per mile driven has declined (see Figure 4, presented earlier). A tax based on vehicle miles traveled is being explored as an alternative that may reflect travel demand better and could also combat congestion, but it would have the downside of penalizing drivers of more efficient vehicles—sending confusing energy and environmental policy messages. It would also have substantially increased tax collection costs during the transition to new equipment. This alternative was pilot-tested in Oregon recently. Box 5 describes how it might work. In 2009, the Oregon Department of Transportation intends to draft model legislation based on the results of the pilot program for the State Legislature to consider.

Box 5. How Oregon's VMT Tax Would Work

The Vehicle Miles Travel (VMT) tax is a form of road pricing in which the driver is charged based on the use of the vehicle, rather than the use of a particular road (tolls), or the amount of gasoline consumed (motor-fuel tax). Unlike toll road readers which employ "smart road" technology or identification labels on vehicle windshields, information on miles driven is recorded either by GPS devices installed in the vehicle or by the vehicle's odometer. The GPS devices use existing satellite technology to track location, speed and miles traveled. The odometer-based system works in combination with a wireless communication device installed in the vehicle to collect VMT data. In both cases drivers are charged the VMT fee at the gas pump.

Some argue that the VMT tax would hinder the adoption of smaller, more fuel-efficient vehicles, is regressive, and would hurt drivers in rural areas who generally drive longer distances. Others argue that the VMT tax is technologically feasible and is fairer since it adheres to the users-pay principle on which the motor-fuel tax is based.

The VMT tax system was successfully tested in Oregon through a pilot program established by the state legislature. Results published in a November 2007 report show that the VMT tax concept is feasible but more development and testing, political support and automobile manufacturing and motor fuel distribution industry acceptance are needed before it can be implemented on a broad scale. Based on the results of the pilot program, the Oregon Department of Transportation suggests phasing in the program statewide over the next thirty years.

SOURCES: Oregon State University, College of Engineering, David S. Kim and J. David Porter, *Technology Development and System Integration for a Vehicle Miles Traveled Based Revenue Collection System Prototype, Final Report, Appendix F*. June 2005. Oregon Department of Transportation, *Oregon's Mileage Fee Concept and Road User Fee Pilot Program, Final Report*, Salem, Oregon, November 2007.

Transit fares are demand-linked—reflecting ridership directly—but they cover only 35 percent of costs. In addition, it is difficult to raise fares to a higher level because doing so would discourage the ridership that public policy is trying to encourage for environmental and energy conservation reasons. Using motor fuel revenues for transit—as has been done in recent years—provides a general proxy for increasing travel demand and would be even better in this regard if that tax was tied more directly to increases in travel demand.

Designing these revenue sources to reflect desired policy incentives and capacities to meet program demands on a sustainable basis will be complex and will require some balancing of factors. It also will require continuing attention as the relationships among the factors as they evolve over time. There is not likely to be any single best answer for all time, but satisfactory accommodations can likely be agreed to from time to time to approximate program needs if all the parties keep working at it together.

Some states have increased their motor fuel taxes more frequently than the federal government. As of 2006, when NCSL compiled available gas tax data, most states had rates that exceeded the federal rate of 18.4 cents; some also have added a gasoline sales tax to the cents-per-gallon tax and authorized local option fuel taxes (see Table 5). State and local governments are also exploring other revenue enhancing operations to help meet their highway and transit responsibilities, as discussed later in this report.

Table 5. State-by-State Gas Tax Rates: 2006

Rank	State	Cents/Gallon Rate	Major Add-Ons
1	Wisconsin	32.9	Δ
2	Pennsylvania	31.2	
3	Washington	31.0	* L
4	Rhode Island	30.0	
5	North Carolina	29.9	
6	Ohio	28.0	
7	Montana	27.0	L
8	Nebraska	26.1	
9	Maine	25.9	Δ
10	Connecticut	25.0	*
11	Idaho	25.0	
12	Utah	24.5	
13	Kansas	24.0	
14	Oregon	24.0	* L
15	New York	23.9	
16	Maryland	23.5	
17	Massachusetts	23.5	
18	Delaware	23.0	
19	Nevada	23.0	* L
20	North Dakota	23.0	
21	Colorado	22.0	
22	South Dakota	22.0	L
23	Arkansas	21.5	
24	Iowa	20.7	
25	West Virginia	20.5	*
26	Louisiana	20.0	
27	Minnesota	20.0	
28	Tennessee	20.0+	L
29	Texas	20.0	
30	Illinois	19.0	* L
31	Michigan	19.0	*
32	Vermont	19.0	
33	Kentucky	18.5	
U.S. (Federal)		**18.4**	
34	Alabama	18.0	* L
35	Arizona	18.0	
36	California	18.0	* L
37	Indiana	18.0	*
38	Mississippi	18.0	L
39	New Hampshire	18.0	
40	Virginia	17.5	L
41	Missouri	17.0	
42	New Mexico	17.0	L
43	Hawaii	16.0	* L
44	Oklahoma	16.0	
45	South Carolina	16.0	
46	Florida	14.9	* L
47	New Jersey	14.5	
48	Wyoming	14.0	
49	Alaska	8.0	L
50	Georgia	7.5	* L

LEGEND

* State adds significant other taxes to this base
Δ Indexed to inflation
L Local option fuel taxes also authorized
\+ Information received during review of this report indicates that this rate was raised to 21.4 cents several years ago.

33 States assess higher gas taxes than the Federal government

17 States have gas tax rates lower than the Federal government

SOURCE: NCSL, *Surface Transportation Funding Options for States*, May 2006, Appendix A.
Note: Source document did not include the District of Columbia

Revenue Options being Considered by Many Parties

NCHRP's December 2006 report, *Future Financing Options to Meet Highway and Transit Needs*, describes three illustrative scenarios for using various combinations of federal, state, and local revenue sources to increase transportation revenues and reduce the gap-to-maintain and the gap-to-improve the nation's highway and transit systems.

These illustrative scenarios suggest what might be technically feasible, but the revenues actually generated would depend upon actions taken by many separate political processes, including those in Congress, the state legislatures, potential voter referendums and initiatives, and votes by the governing bodies of over 3000 counties, around 20,000 municipalities, over 16,000 townships, approximately 743 highway districts, and more than 600 public transit agency boards. So the impression given by these nationwide scenarios may be overly optimistic. Further complicating matters is the fact that many local governments that have been "enabled" by their state to enact local option taxes have not exercised those options.

Table 6 shows the federal, state, and local revenue sources considered in the first two NCHRP scenarios—an "aggressive" one that could fill both gaps by 2016, and a "less aggressive" one that would fill the gap-to-maintain by 2010, but would fill the gap-to-improve only half-way by 2017. The third scenario only does what would be necessary to guarantee the solvency of the federal Highway Trust Fund through 2015. Table 6 also assesses the theoretical revenue-raising potentials of each of the candidate revenue sources, and shows the governments that are currently using each source.

Table 6. Candidate Revenue Sources

Specific Revenue Tool	Modes: Highway/Bridge: Preservation, Maintenance	Modes: Highway/Bridge: New Capacity	Modes: Transit: Operations, Maintenance	Modes: Transit: Capital	Scope: Program	Scope: Project	Yield: Potential[a] Yield	Locations Used
Fuel Taxes								
Motor fuel excise (per gallon) tax	●	●		●	●		H	All states, Federal
Indexing of the motor fuel tax (can be indexed to inflation or to other factors)	●	●		●	●		H	FL, IA, KY, ME, NE, NC, PA, WV
Sales tax on motor fuel[d]	●	●		●	●		H	CA, GA, HI, IL, IN, MI, NY
Petroleum franchise or business taxes	●	●		●	●		H	NY, PA
Vehicle Registration and Related Fees								
Vehicle registration and license fees	●	●			●		H	All states
Vehicle personal property taxes	●	●			●		M	CA, KS, VA
Excise tax on vehicle sales dedicated to transportation	●	●			●		H	CT, IA, KS, MD, MI, MN, MO, NC, NE, OK, SD, VA; Federal for heavy trucks
Tolling, Pricing, and Other User Fees								
Tolling new roads and bridges		●	●	●		●	M	About half of states (e.g., TX, FL, VA)
Tolling existing roads	●	●	●	●		●	L	VA proposed, others considering
HOT lanes, express toll lanes, truck toll lanes		●	●	●		●	M	CA, CO, GA, MN, TX
VMT fees	●	●	●	●	●		H	OR testing; recommended by 15 state-pooled fund study
Transit fees (fares, park-and-ride fees, other)			●		●		H	All transit agencies
Container fees, customs duties, etc.		●			●	●	M	CA
Beneficiary Charges and Local Option								
Dedicated property taxes	●	●	●	●	●		H	Many local governments
Beneficiary charges/value capture (impact fees, tax increment financing, mortgage recording fees, lease fees, etc.)		●		●		●	L	Many states and localities (e.g., CA, FL, OR, NY)
Permitting local option taxes for highway improvements								
• Local option vehicle or registration fees	●	●			●	●	M	AK, CA, CT[b], CO, HI, ID, IN, MS[b], MO, NE, NV, NH, NY, OH, SC, SD, TN[b], TX, VA[b], WA, WI
• Local option sales taxes	●	●			●	●	H	AL, AZ, AR, CA, CO, FL, GA, IA, KS, LA, MN, MO, NE, NV, NM, NY[b], OH, OK, SC, TN, UT, WY
• Local option motor fuel taxes	●	●			●	●	M	AL, AK[b], FL, HI, IL, MS, NV, OR, VA, WA
Permitting local option taxes for transit								
• Local option sales taxes			●	●	●	●	H	AL, AZ, CA, CO, FL, GA, IL, LA, MO, NV, NM, NY, NC, OH, OK, TX, UT, WA
• Local option income or payroll tax			●	●	●	●	M	IN, KY, OH, OR, WA
Other Dedicated Taxes								
Dedicate portion of state sales tax	●	●	●	●	●		H	AZ, CA, IN, KS, MA, MS, NY, PA, UT, VA
Miscellaneous transit taxes (lottery, cigarette, room tax, rental car fees, etc.)			●	●	●	●	L	Various states and localities
General Revenue Sources								
General Revenue[c]	●	●	●	●			H	Most states and localities

[a] Potential Yield; H= High, M= Medium, L= Low.

[b] Revenues go into General Fund but can be earmarked or used for transportation.

[c] For purposes of this report, the leveraging of tax subsidies through tax credit bonds and investment tax credits is treated effectively as producing revenue from general fund sources for transportation.

[d] In some states, revenues from sales taxes on motor fuel are not dedicated or only partially dedicated to fund transportation needs.

SOURCE: NCHRP, Table ES.1, p. ES-5.

To generate the aggressive and less aggressive intergovernmental gap-filling scenarios, certain revenue-source enhancements were chosen from Table 6 for illustrative purposes by the NCHRP consultants. Table 7 shows the choices they made for Scenario 1 and Scenario 2.

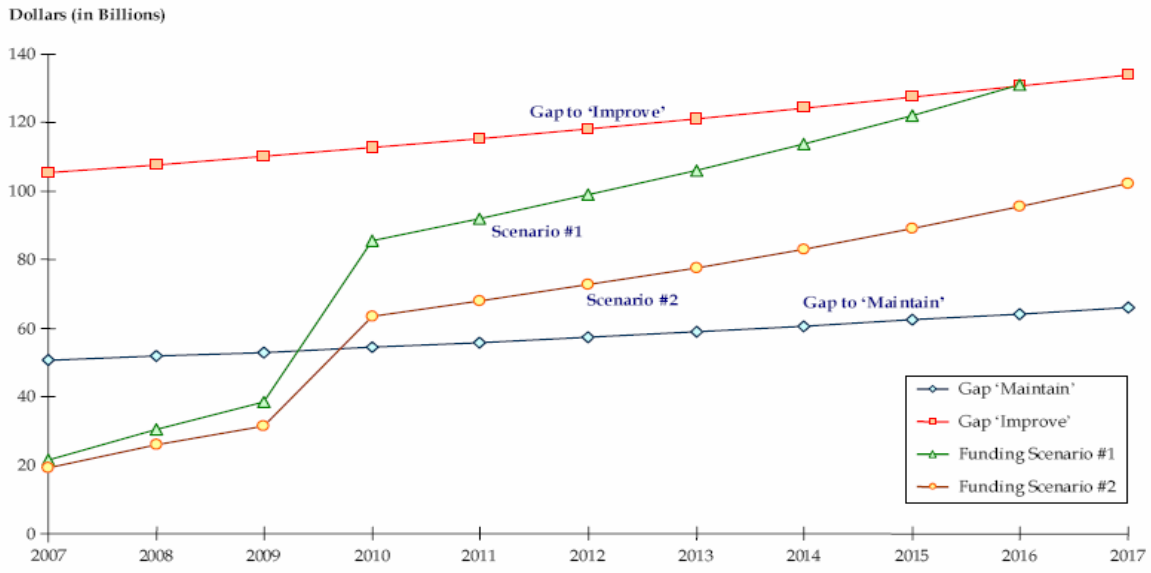
Table 7. Description of National Gap Closing Scenarios

Scenario 1 – Aggressive	Scenario 2 – Less Aggressive
This scenario chooses actions from Table ES.2 at their most aggressive levels as follows: • Federal fuel tax increase of 10 cents plus indexing; • Other HTF enhancements; • Freight revenue enhancements; • State fuel tax increases averaging 5 cents with indexing; • State sales taxes on fuel, vehicles, and general one-half cent; • Aggressive tolling; and • Local option taxes, beneficiary charges, transit fees, etc.	This scenario chooses the following actions from Table ES.2: • Federal fuel tax increase of 5 cents plus indexing; • Other HTF enhancements and some freight revenue; • State sales tax on fuel, motor vehicles, and general one-half-cent sales tax; • Tolling; and • Local option, beneficiary, transit fees, etc.

SOURCE: NCHRP 20-24 (49), Table ES.3, p. ES-9.

The annual gap-filling estimates of these two scenarios 2007-2017 are shown on Figure 27.

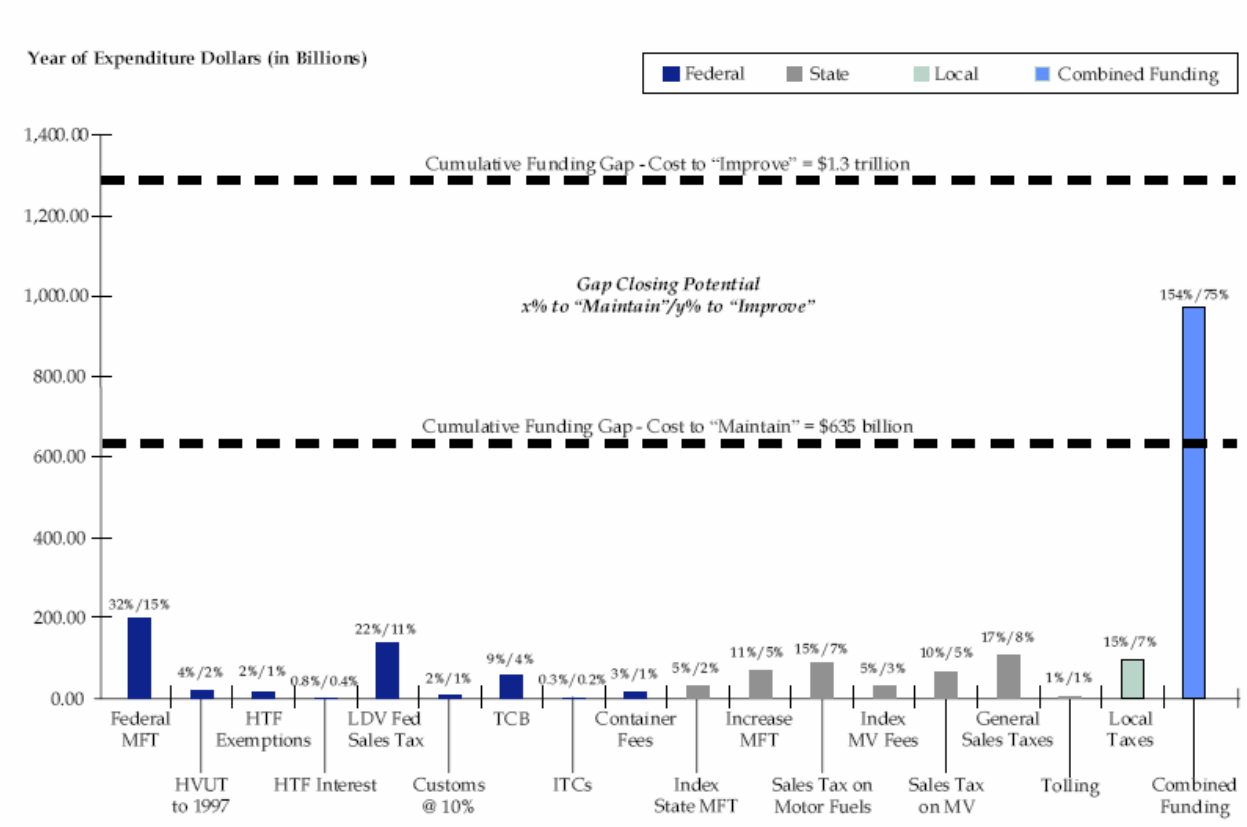
Figure 27. Annual Gap Closing Potential of Revenue Sources



SOURCE: NCHRP, ES-3, p. Figure ES.3, p. ES-11.

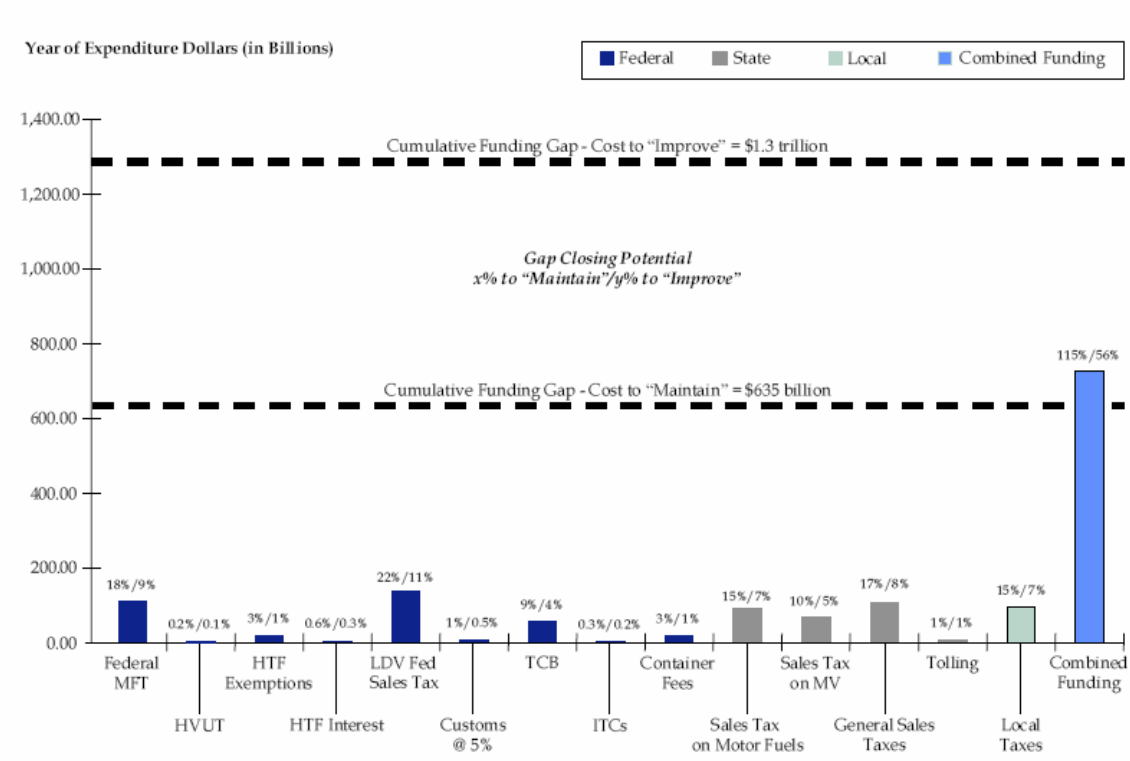
Figures 28 and 29 show the relative contributions made by the various revenue sources included in the two gap-filling scenarios. In Scenario 1, the main contributors are: federal fuels and vehicle taxes and tax credit bonds; state motor fuels taxes, sales taxes on vehicles, and the general sales tax; and local taxes (various types combined). The Scenario 2 list, which produces less new revenue, uses similar sources at the federal level (with some lower rates), uses fewer sources in the states, and is about the same at the local level.

Figure 28. Cumulative Gap Closing Potential of Revenue Scenarios (Scenario #1)



SOURCE: NCHRP 20-24 (49), Figure 6.2, p.6-17.

Figure 29. Cumulative Gap Closing Potential of Revenue Scenarios (Scenario #2)



SOURCE: NCHRP 20-24(49), Figure 6.3, p. 6-18.

Although the new concept of a VMT tax is included in the list of candidate revenue sources, it was not chosen to be part of either NCHRP gap-filling scenario. It was judged to be practical for widespread use only after the time-frame of this analysis (ending in 2017). Other analysts have come to the same conclusion.

"Congestion taxes" also were not explicitly called for in either NCHRP scenario. However, increased tolling was included in both scenarios—and was to be used more aggressively in Scenario 1 than in Scenario 2.

Nevertheless, tolls are not major contributors to the success of either NCHRP gap-filling scenario. They are used chiefly by state governments for relatively few, very high profile bridge, freeway, and ferry facilities. Overall, they contribute less than five percent of highway funding. Although the use of tolls is sure to increase, even a doubling of these revenues over the ten-year life of the NCHRP analysis would leave this source relatively small in its overall impact although perhaps important in meeting demands for new capacity.

Since tolls are at the heart of most current and proposed public-private partnerships (PPPs) for transportation, their magnitude suggests that the impact of PPPs on solving the overall fiscal crisis in transportation will be relatively modest and uneven from place to place. PPPs surely will be very important, even essential, to the success of some large projects, but they should be kept in perspective. In some cases, they can reduce project costs (and therefore the demands for increased revenues), and they can introduce better fiscal discipline into the public sector—just as

using the bond market does by establishing sound financial practices as conditions of favorable credit ratings. However, PPPs generally do not generate a new revenue source. Instead, PPPs generally transfer a public revenue source (such as future toll collections) to the private partners in exchange for restrictions on future public decisions designed to ensure that those decisions will not jeopardize the expected flow of funds to the private partners. The private sector often is more fiscally risk-averse than the public sector, and frequently negotiates hard to leave as many financial risks as possible in the public sector.

The third NCHRP gap-filling scenario—to keep the federal Highway Trust Fund healthy at the current SAFETEA-LU authorization levels—would require eliminating current HTF exemptions, recapturing interest on HTF balances from the U.S. Treasury, enacting a five-cent fuel tax increase in 2010, and indexing that tax from then on.

Among the many gap-closing scenarios developed by others, is the often cited one prepared for the U.S. Chamber of Commerce the year before the NCHRP report. It is summarized in Box 6.

Box 6. National Chamber Foundation Study: Future Highway and Public Transportation Financing

Short-Term Strategies (2005-2009)

- Index federal motor fuels tax rates to inflation.
- Index state motor fuels taxes to inflation.
- Close exemptions to keep federal motor fuel tax fully dedicated to transportation.
- Credit interest earned on Highway Trust Fund balances to the HFT.
- Dedicate 10% of U.S. Customs import revenues to transportation.
- Authorize greater state and local use of tolling.
- Stimulate state and local borrowing for transportation.
- Provide federal tax credits to stimulate private investment in public transportation.

Mid-Term Strategies (2010-2015)

- Tax alternative-powered vehicles to capture their highway use more fully.
- Subsidize purchase of alternatively powered vehicles from general funds, not from highway user revenues.

Long-Term Strategies (beyond 2015)

- Reduce reliance on motor fuel taxes.
- Implement mileage-based VMT revenue system—federal, state, and local.
- Vary VMT rates by vehicle weights.
- Index VMT rate to inflation.

SOURCE: Cambridge Systematics Inc., Future Highway and Public Transportation Financing (Washington, DC: National Chamber Foundation, 2005).

Not included in any of these scenarios are emerging proposals for carbon taxes and carbon sequestration projects originating in energy and climate-change policy areas. These options can be expected to play larger roles in future transportation funding debates.

Because all the scenarios under consideration would require a great deal of federal, state, and local action to become effective, it is necessary to consider how they could be implemented.

Practical Considerations in Tapping New or Enhanced Revenue Sources

Although model state legislation, model local ordinances, public education campaigns, and technical assistance by national associations of state and local governments might be able to facilitate some semblance of nationwide action, this effort would undoubtedly be long and arduous. The NCHRP report recognizes these implementation challenges and devotes its final chapter to them. The chapter includes some helpful case studies that may be instructive to those who have responsibilities for raising new revenues. Box 7 summarizes the general sequence of steps that the NCHRP report authors believe are likely to be required to effectively raise additional revenues at each level of government.

Box 7. Steps Required to Implement New or Enhanced Revenue Sources

1. Develop a consensus on the scope of current and future transportation needs and on the importance of acting to address them.
2. Develop a specific plan and program of investments for which additional funding is needed and demonstrate what benefits are expected from the proposed investments—including specific, measurable performance and service level improvements.
3. Identify clearly established roles, responsibilities and procedures for executing the plan and implementing the proposed improvements.
4. Describe the revenue sources in detail, and provide the rationales for their use.
5. Design and carry out a public education and advocacy plan and campaign.
6. Develop sustained leadership and demonstrate sustained support.
7. Plan and lay out a clear and reasonable timetable.

SOURCE*:* NCHRP 20-24 (49), p. 7-1.

The NCHRP report also cites the recent history of highway and transit revenue increases at the state and local levels of government as reasons to be optimistic that this effort could succeed.

Recognizing Important State-by-State Differences

As the states work to adjust their transportation funding sources, some will have more difficulty than others because of their many constitutional and statutory differences, the diverse structures and capabilities of their local governments, demographic and geographic differences, differences in their financial capacities and efforts, and other factors. Essentially, each state, in combination with its local governments, approaches its transportation challenges with a unique "personality." These personalities have been formed over many generations of tradition and practice, and are not easily or quickly changed.

This Forum did not have the resources to catalogue all the salient differences among the states, but the following examples illustrate their nature.

- **State Fiscal Blood Pressure.** Each state has a measurable "fiscal blood pressure" that affects its practical ability to raise additional revenues. This measure—developed years ago and reported regularly by ACIR— compares the state's fiscal capacity (the size and health of its various tax bases) to the extent to which it is already tapping that capacity (tax effort). States with weak tax bases are generally more likely to be tapped out and unable to raise much more revenue (high blood pressure), while others may still have significant amounts of untapped resources (low blood pressure). By way of practical examples, a low population state (requiring relatively low services) with large extractive industries that can be taxed may have a surplus of revenues over expenditures. Similarly, states with high-income populations may have stronger tax bases than low-income states. (ACIR, 1993)
- **Local Fiscal Capacity.** Many local governments have little authority to raise additional revenue without going to the state legislature for special permission each time they need it. Relatively few local governments have a significant amount of "fiscal home rule." Local home rule (authority for local governments to act on their own authority) varies greatly from state to state—and often by the type of local government and the type of power to be exercised as well. Home rule powers are generally more limited with respect to taxing than for powers to realign their organizational structures, undertake new functions, or determine personnel matters. Municipalities often are granted greater home rule powers than counties. Local home rule powers are granted by constitutions in some states, and by statute in others—making a difference in how easy they are to change. (ACIR, 1981)
- **Relative Importance of Transportation in the Bureaucracy.** Measured by employment (full-time equivalents), highway and transit workers make up between 1.55 percent and 15.26 percent of state workers. For local governments, the comparable range is 1.57 to 8.21. Highway workers are more important in state governments than transit workers; only eight states have transit workers, and only five states operate transit services. In local governments, highway and transit workers provide a fairly comparable presence; both range up to about 5.20 percent of all employees, and local governments in only two states do not employ transit workers. In nine states, the local government workforce is more heavily weighted toward transportation than the state workforce. (U.S. Census of Governments, 2002)
- **Urban vs. Rural States.** Urban and rural transportation systems and services are quite different, so the extent of urbanization heavily influences the nature of the transportation function from state to state. The percent of the state's population that is urban ranges from 94.44 to 38.18 percent. (U.S. Census of Population) Half the states have populations that are 71.63 percent urban or more, while four states have populations that are more rural than urban.
- **Corridor States**. States with substantial volumes of through truck and auto traffic are often willing to support taxes and tolls that fall heavily on the out-of-state traffic.

- **Organizational Factors.** The relative influence of the various instruments of government also varies tremendously from state to state. For example, some states have strong governors, while others have strong legislatures and others have a more balanced sharing of powers. In states where voter initiatives and referendums are prevalent, the state's legislative powers are shared more directly with the voters. Local governments are more powerful in some states, than in others, and sometimes it is the counties that are stronger, while the cities are stronger in other states. State departments of transportation also vary in strength among the states. And regional planning organizations exhibit great variations in strength and influence from state to state. States with very large numbers of local governments often tend to rely on regional councils more than states with so few local governments that they prefer to deal with them directly rather than through a regional intermediary. Some states make maximum use of special districts (usually for single functions such as highways or transit), while other states rely more heavily on their general purpose city and county governments for those same functions.
- **Other Factors.** Some states are more pro-business than others, making them more likely to use public-private partnerships. States also vary widely in the extent to which they are innovators (always the first to try new ideas) or traditional (the last to try anything new). Growth management offers a case in point; a dozen or so states have taken on this land-use/infrastructure coordination innovation since the 1970s, while the others have not yet embraced it. At another level, some states more than others are characterized by top credit ratings and excellent management. In addition, some states are more prone than others to borrow money to fund capital projects, and to utilize federally provided credit enhancement tools.

Officials in each of the states are well aware of these "temperaments" in their own state, but national policy makers seldom have a good feel for the great diversity that exists. Their tendency—largely because of the need to simplify for the sake of manageability—is to assume that all states are roughly the same. And that can make implementation of national policy harder—as has been experienced, for example when establishing MPOs, achieving interstate cooperation, defining relationships, and working out the details of fiscally constrained planning. If national policy makers had something like a personality profile of the states to consult when drafting or considering new laws and regulations, they might be able to accommodate the differences better by considering a broader array of implementation options.

A key concept here is that the "personality" of one state is neither better nor worse than another, but different—as is the case with the individuals taking a personality test.

Considering all these practical considerations and differences among the states, rebalancing these complex intergovernmental finance systems should be based on a renewed understanding of the relative roles of the federal, state, and local governments in transportation programs. The next chapter of this Forum report begins with that topic.

CHAPTER 4
THE CHALLENGE OF FOCUSING ON INTERGOVERNMENTAL IMPACTS WHEN STRENGTHENING TRANSPORTATION FINANCING

The intergovernmental relationships in today's highway and transit programs described in preceding pages represent only a current snapshot. These relationships have not always been as they appear today, and they are likely to continue evolving in the future. Each new generation has reviewed and reestablished these programs to respond to its own needs. Today's funding crisis provides an opportunity for today's policy makers and intergovernmental partners to do so.

The nation's transportation programs have been highly intergovernmental since their beginning. This essential function of government has a significant role in everything from international relations to national development and access to every individual parcel of land. So the cross-government nature of transportation is nothing new.

A brief review of how these two federal programs became what they are today can provide important insights for considering the new intergovernmental surface transportation pact that this generation is being called upon to form now.

Traditional and Evolving Federal Roles

The federal government has had a strong constitutional role in transportation ever since the Constitution was ratified more than 200 years ago. This role derives from two specific provisions of Article 1, Section 8 of the Constitution, which sets forth the powers of Congress, as well as other more general provisions. One of the specific powers provides for regulation of commerce among the states and with foreign nations; another provides for establishment of a postal system—including post roads. The Constitution also gives Congress power to raise money to be spent for the general welfare (the fundamental legal underpinning of all federal grant programs), and to enact any laws necessary to carry out all of its enumerated powers.

The federal role with respect to roads has continued to evolve from its constitutional roots over the years. The first big expansion of the federal role came in the early 1900's with the initiative to "get the farmers out of the mud," and a Bureau of Public Roads was established. This program operated largely with federal assistance to the states for development of county roads designed to improve the "farm to market" transportation system needed to properly facilitate agricultural markets. In the 1950s, the federal government established the nationwide system of modern freeways for national defense and interstate commerce purposes. This Interstate System was designed to connect all of the then-existing metropolitan areas (major population centers) of the United States with each other. Federal urban mass transit programs were added to the nation's transportation portfolio in the 1960s—first as an urban development tool within the Department of Housing and Urban Development, and then moved into the Department of Transportation (DOT)—shortly after the Bureau of Public Roads came over from the Department of Commerce when DOT was formed in the late 1960s.

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) more fully integrated the highway and transit modes with each other in recognition of the close synergies and trade-offs between them in the quest to maximize mobility for the American people and minimize adverse environmental impacts. Both programs—though still separate—fund projects developed under common intergovernmental planning processes at both the statewide and metropolitan levels. ISTEA also required these planning processes to provide for intermodal connections to air, rail, water, cycling, and pedestrian transportation systems. Federal standards also have been tightened over the years to address the air, water, and noise pollution impacts of transportation projects and systems, and to improve safety from accidents, natural disasters, terrorism, and the transportation of hazardous materials. This interlocking set of goals, standards, and intermodal planning practices has become common practice throughout the nation because of the strong federal financial and technical assistance to statewide and metropolitan planning over the past forty years. The new authorization enacted in 2005 (SAFETEA-LU) continued this evolution by adding further details to the environmental factors that need to be considered, and by adding a whole new "planning factor" to cover security. (FTA Fact Sheet)

Past Dialogues about Changing the Federal Role

At key points in history, major changes in transportation have come up for direct debate. Perhaps the most notable times were 1916 when systematic federal grants to state highway departments began, and in the mid 1950s when the new nationwide system of Interstate and National Defense Highways were mapped out and a dedicated Highway Trust Fund was established to fund its construction. The 1950's also began federal sponsorship of several urban transportation studies that laid the groundwork for later federal MPO planning requirements.

These turning points all focused on needs to expand the federal role. However, in the 1980s, as the originally designed Interstate Highway System was nearing "completion," a serious debate began about reducing the federal government's future role in surface transportation. The federal role was already less central to railroads, airlines, waterways, and pipelines—because of the relatively heavier roles played by private companies in those modes. The central question was whether it was time for the federal government to withdraw from the highway program and let the states take responsibility for the completed systems of post roads, farm roads, urban roads, and the Interstate system itself. The U.S. Advisory Commission on Intergovernmental Relations (ACIR) took up the issue of "devolving" this federal program to the states—with appropriate "turnbacks" of the federal tax base on motor fuels. Some of the states had long chafed under the numerous federal mandates that are attached to this program—dealing with construction wages, safety, environmental protection, driving ages, motorcycle helmets, and many other matters—so there was some sympathy among the states for the idea that they might be able to get "out from under" these "onerous" and expensive requirements, keep their own money (the amounts of federal gas tax collected within the state) at home, and spend it as they saw fit.

In its 1987 report on this issue, ACIR did not consider devolution of responsibility for the Interstate Highway System to be appropriate. Instead, it stressed the immediate need to stabilize the highway funding situation and limit devolution to action by the Congress (not by the Administration acting alone). It also urged immediate improvements in state-local cooperation on highways, and viewed the turnback of non-Interstate highways as a long-term goal. This was

not the first turnback proposal the Commission had evaluated, and over the course of its studies of the broader issue, it "urged the development of turnback packages in consultation with…members of the intergovernmental community…" and "cautioned that such fundamental change in authority requires careful attention to matters of transition and of state-local relations."

Efforts to develop and implement turnback proposals—designed to be dollar-neutral at the national level—have been tried at least as far back as President Eisenhower's Federal-State Action Committee in the mid-1950s, but they have always foundered on the problem that the amount of revenues turned back to each state did not match the amount of funding responsibility turned back to each state—so there always have been winners and losers among the states in these proposals, even though the total national revenues relinquished equaled the total cost of meeting the responsibilities returned to the states If extra funds are available to make sure that no state is a financial loser, this problem can be worked out, but that has seldom been the case.

The 1987 highway turnback proposal did not move forward. In fact, the federal role in highways and transit continued to evolve. A new 150,000 mile National Highway System (NHS) was designated by Congress to encompass the originally designated 41,000-mile Interstate System as well as other main highways of "national interest." This new focused federal aid system was based on external and internal studies of post-Interstate needs, as well as detailed consultations with each state. The NHS replaced much more extensive Primary and Secondary systems, to better focus the use of limited federal funds. Investments in Secondary and Urban roads was continued through a more generalized Surface Transportation Program. (Interview with Kevin Heanue, 8/30/07) These two systems have grown to their present sizes of 162,000 and 47,000 miles (*Transportation Weekly*, August 15, 2007, p.8)

In the 1990s, as NAFTA unfolded, it began to be realized that even the Interstate Highway System itself, which was mainly east-west, needed some augmentation to accommodate the new north-south NAFTA connections and international gateways growing between Mexico and Canada. The NHS legislation allows the Secretary of Transportation to approve state requests for additions to the NHS and Interstate systems, and modest additions have been made.

As reauthorization of ISTEA approached in 1997, bills were introduced in the House and Senate to cut the transportation-dedicated portion of the federal gas tax to 2 cents and limit its use to maintenance of the Interstate Highway System. EPA became concerned about what this might mean for environmental protection. As one of the largest federal-aid programs, ISTEA had made DOT one of the largest funders of environmental protection, particularly for air and water quality, and for wetlands protection. EPA gave a grant to the Eno Transportation Foundation to explore the implications of withdrawing this major source of support from its implementation effort. Eno convened a Forum on the subject and published the proceedings in 1997—as a contribution to the reauthorization dialogue.

The Eno Forum did not take positions or definitively answer the question of precisely what would happen if the federal gas tax were cut as proposed, but it did lay out several interesting facts. For example:

- Several environmental requirements apply whether or not any federal money is available to fund compliance. Thus, reduced federal highway funding would simply make it more difficult for the state and local governments to comply with these provisions.
- The loss of federal transportation planning funds would likely reduce the number of strategic studies available to help establish thoughtful compliance programs.
- 25 states had NEPA-like requirements that would likely keep state-generated transportation programs environment-friendly, but the state-generated programs might not necessarily be as large as, or similarly configured to the needs of the federal-state programs they would replace.
- To replace the loss of revenues being received from the federal Highway Trust Fund, 37 states would need to raise their own gas taxes by no more than the reduction in the relinquished federal tax. The other 13 states—and the District of Columbia—would have to raise their own gas taxes enough to cause price increases at the pump.
- It was impossible to tell what each of the states would actually do if confronted with the proposed turnback.

This turnback proposal failed in Congress as had the previous ones before it. However, these intergovernmental dialogues about the nation's surface transportation programs show how complex and interrelated the issues are, provide a context for the present dialogue, and strongly suggest that issues about the proper role of the federal government in transportation will and should continue to be vigorously debated. State authority in transportation is primary in many respects, and the link to federal performance goals is often tenuous. So it should not be surprising that these questions remain in play.

Intergovernmental Implications to Consider when Changing the Federal Role

Now, as globalization accelerates, efficient connections to major ports and facilitating the movement of containerized freight among the water, rail, and highway systems—in the context of just-in-time deliveries—are becoming exceedingly important. This trend has fundamentally increased the federal interest in system-wide considerations even while causing very great local congestion issues. Unexpected delays in these increasingly critical global supply chains are growing—and becoming very serious risk-management concerns for many companies' logistics managers. Box 8 lists some of these concerns.

Box 8.

Top Reasons Why Companies Embark on Supply-Chain Risk-Management Initiatives*

- Logistics/delivery reliability
- Reduced commodity and material cost volatility
- Reliability/continuity of supply
- Inventory management
- Overall supply-network cost

* Companies with annual revenues of at least $15 billion

SOURCE: AMR Research (Cited in *CFO* magazine, September 2006.)

For this and other reasons, the turnback concept slipped out of view—at least for now—and U.S. DOT's current strategic plan continues to outline a robust federal role as a partner with the State DOTs, MPOs and transit agencies in achieving well established and congressionally authorized performance goals.

Assuming the current mix of roles will hold for the brief remainder of the SAFETEA-LU authorization, the immediate task is to realign the weakening financial system with it. The Forum's foundational concept for considering this strengthening effort is the "whole-of-government" concept—which means that the federal, state, and local governments each should adjust its own revenue system with a clear understanding of what it can expect from the others and how the impacts of actions at one level of government might most likely affect the other levels. (Academy, July 2006)

Examples of how these mutual adjustments could work are provided by the *Unfunded Mandates Reform Act of 1995* (Public Law 104-4, 2 USC 1501) and Executive Order 13132. This act (UMRA) requires a fiscal notes process whereby the costs to state and local governments that would be imposed by pending legislation in Congress must be estimated and disclosed to the members of Congress before the proposal comes to a vote. This disclosure could be used to support debates in Congress about means of mitigating the costs to state and local governments. Any such legislation coming up for a vote without this note attached to it can be deferred—by a point-of-order raised by any member—until the required information is made available. Somewhat similarly, Executive Order 13132 requires each agency proposing either a new law or new regulation to provide a federalism assessment of its potential impact upon the affected state and local governments. When regulatory proposals are printed in the *Federal Register* for review and comment, and when potential legislative proposals are circulated for comment before being released, this added information could facilitate better informed comments.

UMRA has had a modest effect by providing an incentive for intergovernmental legislation to be designed so as to avoid the dollar threshold that triggers an impact analysis and the congressional point-of-order mechanism that allows any individual member of Congress to stop a floor vote on any bill that violates this provision. However, legislation involving conditions of federal financial aid was intentionally exempted from the fiscal notes process when UMRA was enacted in 1995. Thus, the grant condition issues addressed in this report are not covered by that act.

According to GAO, the Federalism Executive Order—which is designed to assess broad intergovernmental impacts—is not being implemented. (GAO, 1999) So it represents another lost opportunity to foster intergovernmental dialogue on matters such as those being discussed here. In addition to making the most of this opportunity, a previous Intergovernmental Forum on Revenue Systems recommended:

> The President's Budget should include a report on the status of the intergovernmental fiscal system. The report should have discussions of the prospective consequences of new revenue and spending proposals as well as recently enacted changes affecting all levels of government, including accounting for preemptions and under funded mandates. (Academy, July 2006)

The Academy's Panel on Federal Preemption recommended, in its May 2006 report, that both of these deficiencies at the federal level be remedied. And the Intergovernmental Forum on Revenue Systems reinforced these recommendations in its July 2006 report. Both of those steps would be essential to developing a sound intergovernmental understanding of the various proposals for adjusting the current transportation finance system to achieve sustainability over the 2010-2017 timeframe. Similar procedures at the state level would provide better adjustments among state and local revenue systems.

Two additional steps would also be necessary. One would be to maintain a strong effort at each level of government to update the revenue systems they use continuously. The other would be to carefully plan intergovernmental transitions, so that actions by one level of government can be anticipated and accommodated by other governments before they become effective.

On the issue of updating revenue systems, healthy ones are more able to produce needed funds than systems that have been allowed to grow stale and out of date. Here is a short list of some of the key tax modernization issues that need to be, and are being, wrestled with on a continuing basis to ensure that the main sources of transportation funds remain as productive and equitable as they may need to be.

- Local property and sales taxes most frequently become the sources relied on when the need for enhancing transportation revenues is not met by the federal and state governments. Modernizing both of these taxes—to keep them productive and equitable—has been a long-time concern of state and local officials. (ACIR, 1974, Part 3)
- For property taxes, the emphasis has been on limiting their financial impacts on the poor and elderly (with so called "circuit breakers"), providing property tax relief by the state (by authorizing alternative local revenue sources or by sharing state revenues with local governments), and providing "equalization" payments by the state to help balance the uneven tax capacities among property-rich and property-poor localities in relationship to their service delivery demands. This latter point became especially important in the 1980s with respect to meeting local school needs equally in each school district, and it became a constitutional issue in many states under state "equal protection of the laws" provisions. These court cases led to state equalization formulas for education aid programs in many states—to help level unequal local property-tax bases. The 1980s also brought direct legal limitations on how much local property taxes could be raised—the so called property tax revolt (Proposition 13)—which began in California and spread to many other parts of the nation.
- With respect to the retail sales tax, many states make heavy use of it for their own general purposes (even using it instead of state income taxes in some states), and do not authorize local governments to use it, or limit the amounts and/or purposes for which this revenue source may be used by local governments. Even when authorized, local sales taxes may be required to be coordinated with the overlying state sales tax in some fashion. As retail sales have been eclipsed by service businesses and mail-order sales (including sales over the internet), this tax source has not kept pace with the growth in this business sector.

The federal government has stood in the way of the state and local governments collecting sales taxes when the transactions take place across state lines. So, like the gas tax, the sales tax base is declining relative to the program demands it is attempting to finance.

- Local governments seldom have access to toll projects, since those projects are usually large geographically and designed to be distinct from the strictly local transportation system. Congestion pricing, which is a variant on tolling, has yet to be aggressively used.
- Motor fuels and vehicle taxes are used mainly by the federal and state governments. Many local governments are not authorized to enact their own taxes of these types, and most that have been authorized have not experienced this option.
- Local government use of debt often is monitored closely and limited by state supervision of local debt limits. It is also constrained and disciplined by bond-market requirements to demonstrate exactly how local bonds will be paid off. "General obligation" bonds are secured by the general revenues of the local government, but many large, long-term projects are based on specifically dedicated revenues from sources that cannot be used for any other purpose.
- Unlike the federal government, state and local governments generally cannot run deficits. This is a constitutional requirement in all except one of the states.

The general point that emerges from this brief summary is that local government revenue sources often are limited by state laws and constitutions, by voter referendums and initiatives (especially in western states), by the private money markets, by the circumstances of their limited geographic reach, and occasionally by the federal government as well. Raising additional revenues locally usually is not a simple matter of deciding locally to do so; it is a highly intergovernmental adventure. Having healthy, up to date revenue sources that can grow with service demands—and state and federal partners that are sympathetic to this local government need—is a very valuable, even essential, asset to local governments that want to do their part to help fund transportation needs. All of these complex revenue-raising issues remain to be worked out, state-by-state and locality-by-locality.

It is easy to see from these local revenue examples that it will take time for local governments to adjust to any new needs for them to make up for revenue shortfalls that may result from major reductions in federal or state aid for their transportation programs. The same is also true for the states. In most cases, the states will need action by the state legislature to make these adjustments. And, several states still convene their legislatures only every other year. Thus, the best case scenario—with a new tax enacted the same year it is introduced in the state legislature—is that all states could adjust within two years. Compounding this scenario at the local level is the fact that many local governments will also need to wait for the state legislature to authorize new revenue authority for them before they can put it in place for their own jurisdiction. Then, of course, it may take federal action as well—as in the case of modernizing the state and local retail sales tax to allow it to be collected when interstate mail-order and internet sales are involved. This issue which has been under consideration in Congress for at least 30 years without any resolution.

The bottom line is that state and local adjustments to major federal financing changes in the highway and transit programs will take a significant amount of time to become effective.

CHAPTER 5
RECOMMENDATIONS[7]

Having reviewed all the information above, the members of the Intergovernmental Forum on Transportation Finance have concluded that the gap between surface transportation needs and the financial resources required to meet them is large, immediate, and also long-term. It needs urgent attention now by Congress, the Administration, and policy makers in the nation's state and local governments, as well as continuing attention over the years ahead.

Based on these conclusions, the Forum makes the following six interrelated recommendations:

1. Congress and the Administration should take immediate action to ensure the sustainability of the federal Highway Trust Fund, and should work with the nation's state and local governments to ensure sustainable financial resources adequate to maintain existing surface transportation infrastructures and operations in the future, as well as to support the improvements in capacity needed to improve performance.
2. National surface transportation performance goals and the intergovernmental roles and responsibilities needed to achieve these goals should be established collaboratively.
3. All levels of government should maintain the revenue-raising principle that the users and beneficiaries of surface transportation systems and services should pay as much as possible of the costs of providing established levels of service.
4. In establishing intergovernmental and public-private roles and responsibilities for raising needed surface transportation funds, public policymakers should examine a wide range of sources and scenarios.
5. When examining these revenue raising scenarios, public policymakers should consider the intergovernmental impacts of proposed actions for each level of government, relative to the other levels of government.
6. When the federal and state governments make major changes in their surface transportation financial assistance programs, they should provide transition time to allow the governments receiving assistance to adjust to these shifts.

Each of these recommendations is described in greater detail below.

Recommendation 1: Take Prompt Action to Sustain the Federal Highway Trust Fund and Other Surface Transportation Revenue Sources.

Anticipated shortfalls in the ability of the federal Highway Trust Fund to meet established surface transportation needs are real and substantial. This situation has been well documented in U.S. DOT's 2006 *Conditions and Peformance* report, as well as other sources, and represents a consensus among all the sources the Forum consulted. The most recent budget reviews by the

[7] Jim Kolb and Jim Tymon participated in the discussions at the meetings of the Principals Group, but do not necessarily support all of the recommendations in this report.

Administration and estimates by the Congressional Budget Office available to the Forum confirmed this assessment. And the sudden collapse of the I-35W Bridge during the Forum's study highlighted the urgency of the issue.

However, this consensus has not been well articulated or communicated to the public. To protect national, state, and local public interests, the long-term shortfalls must be addressed beginning in 2009 and the immediate problem in the HTF needs attention even sooner. The specific magnitudes of the gaps to be closed vary from one source to another, and they are revised from time to time. Continuing analysis of these gaps, and intergovernmental dialogues about relative responsibilities should be maintained. But action is also required. A "do nothing" scenario will have severely negative consequences, and should be avoided.

Higher levels of funding by federal, state, and local governments are essential to both maintain and improve the nation's aging transportation infrastructure. New capital investments—as well as adequate funds to support sound operations, regular maintenance, efficient multimodal system design, and innovative congestion reduction initiatives—are necessary to close existing and projected financial gaps to maintain existing facilities and to meet new program needs. The financing system should have incentives for state and local governments that take innovative steps to address their own needs.

Recommendation 2: Collaboratively Establish National Performance Goals and Intergovernmental Roles and Responsibilities to Achieve Them.

Intergovernmental collaboration should be intensified whenever major shifts in highway and transit program designs and financing are being contemplated. Many mechanisms are already in place to accomplish this objective. These mechanisms include U.S. DOT's strategic planning process, conferences and listening sessions, and the legislative process in Congress. Similar processes occur in the states as they interact with their local governments. But these routine processes may not be adequate when major shifts are under consideration. In most years, they become quick and routine, more appropriate for considering incremental adjustments to existing programs than to rethinking basic visions and performance goals or revised levels of service, restructuring and realigning governmental roles and responsibilities, and reshaping the underlying revenue sources to match new expectations.

The Forum Principals recommend that special efforts be made to utilize these familiar planning, budgeting, and legislative processes more intensively and more openly at times like the present when a financial crisis and major program reorientations are on the table. One important objective should be to keep program goals and requirements in proportion to financing capabilities. If funding is to be reduced, performance expectations should also be reduced to explicitly reflect that decision. If funding is to be increased, performance expectations should also be increased. Open dialogues among governments on these matters are likely to produce better results, regardless of specific levels of funding, because they are likely to unlock creative problem solving to a greater extent, as well as to explore a greater range of options, and their intergovernmental impacts, than a more closed or less intensive process. These collaborations should address all public roads down to "the last mile" of the global supply chain.

The bottom line of this recommendation is to establish agreed upon performance expectations—based on national, state, and local needs—and the intergovernmental reporting and accountability mechanisms for achieving them. Building upon the growing number of outcome-oriented performance measures and emerging standards that are becoming available—such as numbers of fatalities and injuries per vehicle miles traveled, number of bad-air days per jurisdiction, and levels of congestion in critical areas—systematic, analytically-based planning, coordination and action programs should be strengthened and emphasized. Legislative earmarking of unplanned projects—whether by Congress or the state legislatures—should be deemphasized. Funding is too scarce to be wasted on unplanned, ineffective, and inefficient projects that do not add up to important results aligned with national and sub-national performance goals for reducing congestion, sustaining national and regional competitiveness in the global economy, increasing personal safety, and enhancing homeland security. Earmarking is destructive of the sound and productive intergovernmental planning processes that have been painstakingly built into the nation's surface transportation programs over the past 40 years. It detracts from the trust and cooperative relationships that have been nurtured by the intergovernmental planning process and that add great value to the nation's surface transportation systems.

Recommendation 3: Maintain the Principle that Users and Beneficiaries Should Pay to Meet Established Needs to the Greatest Extent Possible.

The user-pays and beneficiaries-pay principles have served the nation's highway and transit programs well, and they should remain at the heart of future surface transportation financing programs. Fuel taxes, vehicle fees, transit fares, dedicated sales and property taxes, and other such dedicated revenue sources provide direct and visible relationships between the revenues raised and the services provided. These links provide highly valuable accountability signals between the governments that are providing the services and the publics that are paying for them. It is vital to maintain and strengthen these links as options are considered to supplement the fuel tax and broaden the revenue base for surface transportation programs.

All of the scenarios the Forum examined for increasing revenues to meet demonstrated needs incorporated the user and beneficiary principles. The Forum believes that increased fuel taxes and/or indexing may play a key role in sustaining these principles.[8]

Transferring greater responsibility for transportation to local governments (which already rely much more heavily on general fund revenues than the state and federal governments) would make it more difficult to honor these principles unless states authorize greater local government access to user-based and beneficiary-based revenues, and local governments use this authority. Consideration of future revenue raising responsibilities should take into account the uneven capacities of the different levels of government to raise new revenues, including the lack of access to user fees by many local governments.

Recommendation 4: Examine a Wide Range of Scenarios for Increasing Revenues.

[8] Four members of the Forum did not agree with inclusion of this sentence.

All practical scenarios for increasing revenues, like existing financing for highways and transit, appear likely to be intergovernmental and to consist of multiple sources of funds. No clearly "best option" has emerged from the analyses the Forum saw. Continuing analyses and intergovernmental collaboration appear to be necessary to arrive at satisfactory adjustments to existing revenue sources that will be capable of meeting demonstrated needs as they are identified and agreed to from time to time. This will likely become a continuing effort, as the forces of new technologies, new fuel sources, further globalization, continuing population growth, and many other dynamics continue to place changing demands on U.S. highway and transit systems.

Both traditional and new sources of revenues should be considered for strengthening surface transportation financing. Traditional sources such as taxes and fees on fuels, vehicles, sales, and property frequently become outdated. They need constant attention to remain productive and reflective of the growing demands they must satisfy. Several examples have been provided in this report of the need for modernizing the taxes that are now being used to fund highway and transit programs—as the revenue bases on which they draw shift with the times and as their yields erode. New revenue sources, such as VMT taxes and carbon taxes, would need to be established—with new technologies for collection and administration. Strong political leadership and transitional financing may be needed to put these new sources in place. Targeted federal research on the related national issues of technology, privacy, and vehicle equipment should be provided. Enhanced tax compliance and enforcement efforts may also be required to avoid erosion of both traditional and new revenue sources.

Raising revenues to meet transportation goals will inevitably intersect directly with related policy areas such as energy consumption and global warming, and indirectly with many other policy areas that rely on transportation services, not to mention unrelated programs that could make productive use of these revenues if they were not committed to transportation. With respect to the direct intersections between transportation, energy, and global warming, 33 percent of the U.S. carbon footprint is transportation-generated, and 55 percent of U.S. petroleum consumption is transportation-based. Almost 1000 local governments have decided to grapple with this set of interrelated issues, as have the majority of states.

For immediate solutions to shortfalls, scenarios based on already established revenue sources should be given priority. For longer-range solutions, new sources may play larger roles.

The federal government is, by far, in the best position to provide the robust national research required to move forward expeditiously toward nationwide solutions to America's urgent need for improved surface transportation revenue systems. Implementation of new revenue collection systems, of course, will be largely the responsibility of state and local governments in cooperation with fuel producers, retailers, manufacturers of vehicles, and makers of fuel-dispensing equipment. However, the new GPS, telecommunications, and software technologies needed to support effective, efficient, and equitable collection still need development and testing, as well as national standards to ensure nationwide interoperability. The path-breaking Oregon VMT tax pilot study mentioned earlier in this report illustrates this point. For all the excitement it has generated, it was only a small proof-of-concept effort. Left to a natural course of evolution, its sponsors estimate a 30-year timeline for full implementation. But with a concerted

effort, they see the potential for shortening this period to ten years. Recognizing that nationwide interest in new revenue systems like this is increasing rapidly, the federal government should immediately lay out and fund a research agenda to effectively address these issues in a timely manner.

Recommendation 5: Consider the Intergovernmental Impacts of Financing Proposals.

Whenever significant shifts in funding levels or mechanisms, or in program designs, are being considered, they are likely to create intergovernmental impacts that should be fully and carefully explored before they are enacted. More specifically, the Forum recommends that formal intergovernmental impact analyses be conducted and considered to better inform the federal government's legislative process, budgetary process, and regulatory process, and that the same types of analysis be conducted and considered in state legislative, budgetary, and regulatory processes. The "fiscal notes" process currently in place to a limited extent under the *Unfunded Mandates Reform Act of 1995* (UMRA) should be broadened to cover proposals to change federal-aid programs. This model should be applied within the states as well.

In addition, the federal government's Federalism Executive Order should be more actively used to generate robust consideration of intergovernmental impact issues in the federal budget and rulemaking processes. This executive order also should be used as a model for the states.

The Forum also recommends that the President's budget contain a special analysis every year of the status of the intergovernmental fiscal system, including discussion of prospective consequences of new revenue and spending proposals, as well as the observed impacts of recently enacted changes affecting the state and local governments. The states also should consider using similar budgetary provisions.

Although recommendations like these have been proposed and considered for many years, the Forum Principals believe that the fact they have not been adopted or implemented earlier makes it more urgent than ever for Congress and the President to take action now. It is well known that proposed legislation affecting revenues and grant conditions can impose intergovernmental impacts as large as or larger than the "unfunded mandates" currently defined within the scope of UMRA.

Major cuts in federal aid either place great pressure for revenue increases on state and local governments, or cause reductions in expected program performance, or both. Federal-aid cuts also may be passed along to local governments as cuts in state-aid programs. And the local revenue sources tapped as the sources of last resort to sustain program performance are often less user-based and more regressive than the funds they replace.

For these reasons, the Forum Principals emphasize the need to amend UMRA now, and to strengthen the capacity within the federal government and throughout the nation to perform intergovernmental impact assessments.

For these purposes, the federal government should maintain current information about the key characteristics of the states and their local governments that affect how the state and local

governments are able to adjust to changes in federal-aid programs. Some such characteristics related to transportation finance issues are explored in this report in a preliminary way. This exploration is designed to suggest the types of analyses that should be brought to bear in intergovernmental impact assessments. An understanding of these state and local government characteristics is essential to assist in developing federal provisions that will be practical for more states to take advantage of, and provisions that will prove to be productive.

Currently, out-of-date and incomplete data on transportation spending by individual state and local units of government, on the states' relative fiscal capacities and levels of tax effort, and on other characteristics makes it difficult to assess probable impacts on the states and their local governments arising from proposed federal actions. The U.S. Census of Governments and the U.S. DOT statistical programs should be funded adequately to capture the data and apply the analytical methods needed to support improved assessments of intergovernmental financial impacts. Recent reductions of transportation-related data from the American Community Survey and other federal sources are eroding the quality of transportation studies.

Recommendation 6. Provide Transition Time for Major Shifts in Financing

When the federal government enacts significant shifts of financial or other conditions in its financial aid programs, it should provide reasonable periods of time to allow the affected state and local governments to adjust their own programs to work effectively in complementary ways. The states should adopt similar policies when making major changes to their state-aid programs.

As pointed out in this Forum report, it can often take two years or more for a state government, or a local government, to adjust to changes in federal-aid programs—particularly in states where the legislature meets only every other year. At the local level, governments often must get state permission to make adjustments in their financial systems before they can even begin to make their own changes. In almost all cases, this can be a complex undertaking. Some sort of phase-in provisions might be devised to begin implementation in stages.

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CONSORTIUM LEADERSHIP AND FORUM PLANNING COUNCIL

The Intergovernmental Forum on Transportation Finance was established in December 2006 through a consortium of organizations with the participation of the Administration and senior congressional aides. The individuals listed below had key roles in providing leadership and staff support to the consortium at that time.

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Donald J. Borut, Executive Director, National League of Cities
C. Morgan Kinghorn, then-President, National Academy of Public Administration
Larry Naake, Executive Director, National Association of Counties
Robert J. O'Neill, Jr., Executive Director, International City/County Management Association
William T. Pound, Executive Director, National Conference of State Legislatures
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APPENDIX B

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APPENDIX B

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Tillie A. Fowler—Consultant. Tillie Fowler has 11 years of experience working with government agencies and elected officials in Washington and Atlanta, GA. Her main focus has been on surface transportation and aviation issues. Ms. Fowler has served as Special Assistant to the Assistant Secretary for Transportation Policy at the U.S. Department of Transportation (USDOT) and Director of Intergovernmental Affairs for the Federal Motor Carrier Safety Administration at USDOT. Prior to joining USDOT, Ms. Fowler spent two and a half years handling Representative Johnny Isakson's transportation committee assignment and appropriations projects, and was a legal and legislative assistant for the National Commission to Ensure Consumer Information and Choice in the Airline Industry, and was Chief of Staff for Congresswoman Ginny Brown-Waite from Florida. Ms. Fowler received her law degree from Washington College of Law at American University and her bachelor of arts from Emory University.

Susan Bell Knisley—Consultant. In her capacity as a Senior Technical Expert, ASE, Inc. (a subsidiary of Booze Allen Hamilton), Severna Park, Maryland (2004—present), Knisely has consulted with the U.S. Department of Transportation (USDOT) on major studies for the Federal Transit System (FTA) on Oversight, Quality, Design; for the Federal Motor Carrier Safety

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Katherine A. Mattice—IPA, National Academy of Public Administration. Katherine Mattice is the Chief of the Policy Review and Development Division in FTA's Office of Budget and Policy, where she manages a staff of policy analysts and economists working on issues ranging from transit-oriented development to innovative financing. Most recently, Ms. Mattice has been the managing director for the implementation of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for all Users (SAFETEA-LU) legislation, helping to facilitate the development of new regulations, reports, and guidance documents. From 2001 to 2005, she was a program analyst in the Office of Policy Development working primarily on New Starts and several initiatives for the Administrator, including a nine-month assignment to the Senate Committee on Banking, Housing and Urban Affairs to work on drafting the SAFETEA-LU legislation. Before working at FTA, Ms. Mattice spent eight years as a management consultant working on several major environmental and technology programs for the U.S. Department of Energy. She has a Bachelor of Arts in Political Science from the University of California, San Diego, and a Master of Public Administration from the Maxwell School at Syracuse University.

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