

Commission Briefing Paper 5C-02

Characteristics of the Federal-aid Surface Transportation Program

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Introduction

This paper is part of a series of briefing papers to be prepared for the National Surface Transportation Policy and Revenue Study Commission authorized in Section 1909 of SAFETEA-LU. The papers are intended to synthesize the state-of-the-practice consensus on the issues that are relevant to the Commission's charge outlined in Section 1909, and will serve as background material in developing the analyses to be presented in the final report of the Commission.

This paper presents information on how national needs are projected within the context of the overall Federal-aid surface transportation program – and its modal programs. Within the Federal-aid surface transportation program, the national needs and interests have been projected via the scope, focus, and scale of funded activities together with related federal regulations, standards and incentives promoting national objectives. The primary feature of the program has been Federal capital fund apportionments – defined in terms of eligible uses intended to support investments that state/local governments -- individually and collectively -- would be unlikely or unable to support on their own.

Historically, the major funded activities have focused on the development of infrastructure: the interstate and regional highway networks and major urban transit facilities. Within this framework, the program has both grown and changed in terms of the balance of Federal funding for federal vs. state/local priorities, the discretion allowed in use of federal funds approaches to funding allocation. This evolution has been responsive to the general trends in US intergovernmental relationships – as well as to a changing policy consensus regarding key transportation national needs.

Background and Key Findings

The federal role in surface transportation has evolved over the years. Understanding past evolutionary trends may be useful in considering potential changes in the federal role in key surface transportation programs.

- Over time, the roles of public and private sectors have become increasingly intertwined, reflecting the benefits of closer coordination and cooperation.
- The Federal government's role in surface transportation is derived from the constitutional roles of the Federal government as well as specific legislation and administrative policy.
- National priorities and state-local priorities differ. Federal surface transportation programs have increasingly reflected a policy compromise between funding targeted national systems – such as the Interstate, bridge and fixed guideway transit programs –

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and providing flexibility in the use of Federal funds to allow state and local governments to meet a wide range of unique needs.

1. Introduction

Effective projection of national needs and interests within the Federal-aid surface transportation program is affected by both the scope and scale of the program. “Scope” has several key dimensions which describe the role of the federal government regarding a particular national transportation objective and how it is embodied in the Federal-aid program. These dimensions are combined and configured in different ways within the Federal-aid program activities for each surface mode. The discussion in the subsequent sections 2 through 10 describes the basic dimensions of scope and scale including:

- Public vs. private sector roles
- Passenger vs. freight orientation
- Rationale for Federal involvement
- The Federal/state/local partnership
- Systems of national interest
- Capital project funding emphasis
- Program funding allocation
- Leverage of Federal aid
- Flexibility in the use of Federal funds

The discussion in section 11 describes recent trends regarding these dimensions.

Two papers provide related material: Paper 07-003-1 *Federal Roles and Related program Mechanisms* provides some trends from the history of the Federal-aid program; Paper 07-003-2B *Development of Future Federal Surface Transportation Program Options* provides examples of future options for the Federal-aid program that might be considered as alternatives arrangements of the key dimensions of the Federal-aid program discussed in this paper.

2. Public vs. Private Sector Roles

The transportation services tradition within the US economic system grows out of the historic free-enterprise market economy. Within this context, transportation expenditures for transportation services and facilities are overwhelmingly private, but leveraged by the small (14-15 per cent) public investment in key public infrastructure – of which about one quarter is Federal. This history of government involvement within each mode reflects a set of evolving boundaries between the public and private sectors as modal demand, economics and competition have shifted during the last century. Over time, the roles of public and private sectors have become increasingly intertwined, where there is consensus that there are substantial public benefits.

3. Passenger vs. Freight Orientation

As suggested in Exhibit 1, each mode is a combination of public and private interests. Freight transportation ownership and operation is primarily in the private sector – although truck transportation is heavily dependent on publicly-provided highways. Passenger transportation is

mixed; for example, private vehicular transportation operates on publicly-supported roads while urban transit is substantially public. All modal operations have some public regulation for safety.

Exhibit 1: Modal Roles

Function			
Modes	Passenger Operations	Freight Operations	Infrastructure Development
Highway	By private auto or public bus or commercial (intercity) bus over public roads	By private commercial carrier over public roads	Public
Intercity rail	By public rail entity over private or public guideway	By private carrier over private RR	Private
Urban rail	By public transit entity over public guideway		Public
Interregional waterborne	Public ferry over public waterways	By private vessel over public waterways	Public

Modal roles continue to evolve – in both directions. Highways have been in the public sector for over a century, although private toll roads may be making a comeback. Most private transit was taken over by state and local governments in the post-war period and Federal financial support was subsequently provided. A similar pattern has occurred with commuter and intercity passenger rail. Meanwhile, private freight transportation – both trucking and rail -- has been increasingly deregulated regarding price and operations, although safety is a significant Federal regulatory concern. Inland and intracoastal waterways are outside the jurisdiction of the USDOT and are maintained and expanded by the US Army Corps of Engineers.

4. Rationale for Federal Involvement

Within the public sector, Federal involvement is not based on systems ownership or operation. (The Federal government does not own any infrastructure except the national forest and public lands roads.) States generally own the upper-level highway systems and develop, operate, and maintain them. Regional authorities perform the same functions for the metropolitan transit systems. As owner-operators, State and local governments (and their regional authorities) have their own highway and transit goals and programs that can be meshed with Federal transportation program (and must be, to receive Federal aid).

The Federal government’s role in surface transportation is derived from the constitutional roles of the Federal government as well as specific legislation and administrative policy. These defined Federal interests and their origins include:

- *Supporting needs that are national in scope* relating to constitutional responsibility for interstate commerce, national defense and security – particularly as it may be embodied in systems that are interstate in character.
- *Pursuing general national welfare objectives* that are embodied in Federal policy broadly – including transportation – such as health, safety, environment, energy, and civil rights.

- *Promoting transportation-specific objectives* such as mobility options, safety and health are embodied in Federal regulations in trucking, facility design standards, planning requirements, etc.
- *Supporting political interests of Congress* such as job creation and economic development as embodied in specific program authorization and apportionments.
- *Promoting maximum equity* within the context of funding allocations to meet national needs.
- *Capturing economies of scale and efficiency* in the administration of nationwide programs such as research, tax collection and uniform standards.

The current transportation program is a reflection of these broad federal interests as they have evolved over time within each modal program -- many of which were defined during the last fifty years.

5. The Federal-State-Local Partnership as the Basis of the Federal-aid Program

There are seven principal modal administrations within USDOT involved with surface transportation, each with separate modal programs under a general policy structure developed by DOT management. These modal administrations include the agencies addressing the major public infrastructure (FHWA and FTA), safety-oriented agencies (NHTSA, FMCSA, FRA, and PHMSA) and special support for private modes such as ocean shipping (MARAD). Under the Federal system of government, these modal agencies work with state and local governments in the context of a voluntary partnership through Federally-assisted, state/local administered programs, on a mode-by-mode basis. (The direct Federal involvement with passenger rail (Amtrak) and waterways (USACE) is an exception to this pattern.) Within the Federal-aid partnership tradition, the Federal role is a combination of policy-setting, program activity administration, technical assistance, financial support, and regulation.

The most influential feature of the Federal-aid program is financial assistance. Such assistance is intended to support investments in the national interest that states or transit authorities -- individually and collectively -- would be less likely or able to support on their own. The Federal-aid program typically co-funds these program activities through program and activity-specific funding apportionments to state/local recipients that require state or local matching funds. These funds -- although voluntary to recipients -- are accompanied by conditions defining eligible use and by various regulations and standards that are designed to promote the specific Federal intent.

Major Federal interest is felt in those areas with the most substantial Federal investment, particularly related to public infrastructures, including highways, transit, waterways and intercity passenger rail. Federal involvement with modes that are privately-owned -- such as freight rail and marine transportation -- have been more limited and focused on safety regulation with financial support limited to credit enhancement. Most recently, a greater concern for freight transportation has led to more direct cooperation with private modes.

6. Systems of National Interest as a Key Federal Program Focus

Transportation, by its nature, is dependent on infrastructure networks at various scales for each mode and functions. The major focus of Federal-aid programs -- measured by proportion of dollars invested -- has traditionally been on the development of needed network and major

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facility components that involve scales and costs otherwise not supportable via individual state/local initiatives. Program activities that embody these national interest issues have included:

- Development of major modal networks of national interest such as a uniform national, interregional, intercity highway system, national passenger rail system, and inland waterway system
- Support of capital intensive urban support modes such fixed guideway transit and other major capital-intensive investments
- Preservation and operations of Federally-funded assets at a cost-effective level
- Promotion of other national-interest transportation functions (tourism, economic development, technology development, mobility of the elderly, disabled or low income individuals
- Regulation of certain national interest transportation facility and operation qualities (environment, vehicle size, safety, and air quality)

Other Federal-aid programs – constituting a small proportion of federal aid -- target broad state and local needs such as congestion and community development. Since Federal aid is voluntary, and since national interest priorities and state-local priorities necessarily diverge, the specification of eligible uses of Federal aid has increasingly reflected a policy compromise between funding targeted national systems – such as the Interstate, bridge and fixed guideway transit programs – and providing flexibility in the use of Federal funds to allow state and local government to meet a wide range of unique needs. Achieving this balance has limited the proportion of the Federal-aid program that is devoted exclusively to national systems and priorities.

7. Capital Project Funding Emphasis

For highways and transit, the principal focus of the Federal-aid program – in investment terms -- has been to support capital investment in network development – as distinct from their routine maintenance and operations which remain a state/local responsibility. Program apportionments support program-specific eligible state/local expenditures -- both new capacity construction and major preservation activities. They also include conditions by which Federal interests related to systems development, uniformity or performance are promoted, including:

- the significant proportion of total Federal funds focused on systems/facilities of national interest
- differences among funding programs in their state/local match requirements to attract and focus state/local investment
- the eligible uses of the funds – typically on improving certain systems or qualities of national interest
- incentives or requirements (regulations) to adhere to certain national consensus standards or processes
- cooperative research to support widely-shared interests

Other programs – those specifically oriented to safety such as FMCSA and NHTSA – as well as those involving privately owned infrastructure (rail, pipeline, marine) have a regulatory focus.

8. Program Funding Allocation

The overall Federal highway and transit programs include several “core” functional programs. Core programs are typically distributed to state/local recipients based on formulas designed to reflect levels of transportation activity or need. In other highway programs and in other modes, discretionary administrative allocations are made on the basis of legislative criteria or through project-specific designation in Congressional legislation. Appendix A shows these functional programs, their focus, flexibilities, and relative size.

9. Leverage of Federal Aid

Historically, the Federal-aid program has supplied a high percentage of total funds for functions considered to be of greatest Federal interest. Currently, 40 to 50 percent of total national capital investment in highways and transit expansion comes from Federal aid, although for some states’ highway programs, the proportion is much higher. States are required to invest their own funds for routine maintenance and operations of the Federal-aid systems.

Match differential has been used to express varied Federal priorities. The original Interstate program was a 90/10 Federal/state match, while most other programs at the time had a 50-percent Federal share. Today, the Federal-aid highway program match for core functional programs is 80 percent with an increased Federal share for Interstate and safety projects. FTA programs are also 80% federal share for formula distribution while the discretionary new starts program is essentially competitive – based on technical criteria and the local match level-of-effort.

There is some controversy regarding to what degree increased Federal aid and increased Federal match “leverages” more total investment than would otherwise be the case, or whether Federal aid substitutes for funds state and local governments would otherwise spend. This issue is discussed in Paper 07-003- *Identification of Opportunities to Improve the Leveraging Potential of Federal Transportation Funding with other Public Sector and Private Sector Resources*

10. Flexibility in Use of Federal Funds

The funding programs all have built-in flexibility to accommodate the substantial differences among state/local needs, capabilities, and development policies. Over time, as basic regional networks and facilities have been built out, programs have included increasing flexibility regarding the eligible uses, including transfer of funds among functional programs within modes and across modes. Appendix A indicates the degree of flexibility currently available.

The Federal-aid program includes various restrictions and regulations that reflect federal interests as embodied in specific laws. These include constraints on vehicles that can use the Federal-aid systems with regard to safety features, speed, size and weight. It also includes administrative constraints such as prohibition on tolling the Interstate and “non-transportation” system development considerations relating to the natural environment and air quality.

11. Some key trends

The above dimensions have evolved over time in response to a combination of the changing national policy and divergent state/local interests. The major underlying theme has been reaching a balance between Federal and state/local interests at any given point in time. Major trends for the key dimensions have included:

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- *Broadened Scope*
 - ✓ evolving economic function orientation from regional to interstate to global connectivity.
 - ✓ increased concern with indirect impacts such as safety, environment, health and aesthetics and broadened funding eligibility to cover related costs
 - ✓ increased collaboration with private sector as the economics and competition among modes has shifted
 - ✓ increased program targeting on operations and preservation – as well as basic capital infrastructure development
- *Decline in Relative Scale* – The overall size of the program has grown reflecting Congressional support for Federal and state revenue increases as apparent investment needs have increased. Constant dollar expenditures for highways and transit from all units of government have both risen by over 20 percent since ISTEA (1992). However, total expenditures per unit of travel have risen only slightly.
- *Stability in Federal Share* – Since ISTEA (1992), the Federal share of highway and transit funding has grown slightly from approximately 21% to 24%. The Federal share of capital in highways and transit has generally been between 40% to 45% in the last decade.
- *Reduction in Categorization* – While the capital focus remains, shifting balance away from several categories of national interests systems (such as the Interstate) towards fewer categories with more flexibility in application of Federal aid among various state/local projects at their discretion.
- *Congressional Earmarking* of program funds not distributed by formula has increased dramatically in recent years, significantly preempting policy-based allocations
- *Mix of Federal and State/local Interests* – There are significant limitations imposed by the basic structures of the Federal-aid programs in surface transportation including: voluntary nature of the grant-related program activities, the varied interests of states and regions that may not parallel principal national interest priorities, the share of total investment represented by the Federal program, and the size of the total public program compared to overall sector expenditures.
- *Multimodal Flexibility* – Increasing flexibility to grant recipients to shift funds away from highway investment to transit needs in accordance with state and local priorities. For example, transit capital projects are eligible under FHWA’s Surface Transportation Program. States have the flexibility to transfer up to 50% of most of their core highway funding sources to the STP, and thus have the option to direct a large portion of their highway funds to transit.
- *Deregulation* – Economic regulations (rail and trucking) have been dramatically reduced to enhance competition while safety and environmental regulation have increased, security is imposing new constraints and regulations on truck size and weight and tolling the Interstate remain.
- *Funding Distribution “Equity”* – while the categorical program activity funds were originally distributed by formulas reflecting needs – including subsidies needed to create systems like the interstate – special equity adjustments have been introduced to redistribute funds so that all states receive a share of highway funding that is at least a specified share of their contributions to the Highway Account of the Highway Trust Fund. The specified share was 90.5% for 2005 and rises in stages reaching 92% in 2009.

This evolution suggests there is considerable flexibility in the various dimensions of program scope and in the range of overall program scale that can be combined in different ways to support various competing national versus state/regional objectives.

CONSOLIDATED COMMENTS FROM MEMBERS OF THE BLUE RIBBON PANEL OF TRANSPORTATION EXPERTS - PAPER 5C-02

One reviewer commented as follows:

This paper is a good summary of the federal-aid programs and the evolution of many of the characteristics of the program over time. This reviewer would only make the following points:

- PPP's provide a possible solution to a limited number of corridors and bridges nationally. The majority of the U.S. system is not a candidate for a PPP initiative.
- The state DOTs might not concur that the federal program is simple in its application and that categories and their requirements are on a path towards simplification.
- The section entitled, "Rationale for Federal Involvement" seems to conclude that the states aren't capable of achieving these objectives without a strong federal role.

Another reviewer commented as follows:

This paper does a good job of presenting the scope of the existing federal surface transportation program. However, there are several issues which could be added or emphasized.

The paper doesn't mention another possible dimension to configure federal programs – interstate transportation purpose vs local/commuter purpose. Future federal policy could be based on a greater federal role for interstate transportation (all modes), and funding the interstate portion of travel (people and goods) in urbanized areas, and a lesser role for local/commuter travel, which is more a result of local land use and development decisions.

Section 6, "Systems of National Interest as a Key Federal Program Focus" should also include international border crossings and ports of entry into the U.S., as these impact international commerce and are also impacted by federal homeland security requirements. The federal government is the only level of government that can balance between the needs of maintaining an efficient flow of people and goods for interstate commerce with national security needs. This is a logical area where the future federal role should be expanded, given the importance of these ports of entry and need for the efficient flow of trade through them, to our nation's ability to compete in the global economy.

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Section 9, Leveraging Federal Aid. The issue of leveraging federal aid should not be a constraining policy for states. States and localities own the transportation facilities and will invest in them based on local needs and resources, and in reaction to public pressure.

Section 10, Flexibility in Use of Federal Funds. It should be highlighted that flexibility, although of benefit, is not a substitute for federal policy direction in regard to national vision for a multimodal transportation system.

This paper lists the various federal programs but fails to highlight how much of the current federal highway program is now solely to provide equity to states. Over \$40 billion in SAFETEA-LU is authorized for the equity bonus, nearly one-quarter of all apportionments and larger than any other highway program category. The size of the so-called equity program highlights the fact that the federal surface transportation program has drifted away from a clear federal/national transportation system vision to instead focusing on returning fuel taxes where they are raised.

Appendix A: CURRENT FEDERAL-AID SURFACE TRANSPORTATION PROGRAM DESCRIPTION

Major Federal Highway Administration Program				
Program	Auth Size in \$B	Federal match %	Flexibility within mode	Definition of program purpose/eligibility
Formula				
• Equity bonus	40.9	80-90		Funding to States based on equity considerations
• STP	32.5	80	100	Flexible funding that may be used by States and localities for projects on any Federal-aid highway, including the NHS, bridge projects on any public road, transit capital projects, and intracity and intercity bus terminals and facilities.
• NHS	30.5	80	50	Improvements to rural and urban roads that are part of the NHS, including the Interstate System and designated connections to major intermodal terminals
• Interstate maintenance	25.2	90	50	Resurfacing, restoring, rehabilitating and reconstructing (4R) most routes on the Interstate System.
• Bridge	20.4	80	50	Enable States to improve the condition of their highway bridges through replacement, rehabilitation, and systematic preventive maintenance.
• CMAQ	8.6	80	Variable	Projects and programs in air quality nonattainment and maintenance areas for ozone, carbon monoxide (CO), and particulate matter (PM-10, PM-2.5) which reduce transportation related emissions.
• HSIP	5.1	90	50	Achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
• Appalachian Development	2.4	80	N/A	Construction of the Appalachian corridor highways in 13 States to promote economic development and to establish a State-Federal framework to meet the needs of the region.
• Coordinated Border Infrastructure	0.8	80	N/A	Improve the safe movement of motor vehicles at or across the land borders with Canada and Mexico
• Allocated				
• High priority projects	14.8	80	N/A	Designated funding for specific projects identified in SAFETEA-LU. A total of 5,091 projects are identified, each with a specified amount of funding.
• Fed Lands	4.5	100	N/A	Transportation planning, research, engineering, and construction of highways, roads, and parkways and transit facilities that proved access to or within public lands,

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				national parks, and Indian reservations.
• R & D	2.3	50-100	N/A	Surface transportation research, development, and technology deployment activities to promote innovation in transportation infrastructure, services, and operations.
• National Corridor Infrastructure Improvement	1.9	80	N/A	Construction of highway projects in corridors of national significance to promote economic growth and international or interregional trade.
• Projects Of National And Regional Significance	1.8	80	N/A	Funding for high cost projects of national or regional importance.
Major Federal Transit Administration				
Formula				
FTA Urbanized Area Formula Grants	18.7	80	Variable	Funds to support transit service in cities over 50K population – mainly fixed route and special systems
Fixed Guideway Modernization Program	6.1	80	N/A	Program funds are utilized to maintain investment in fixed guideway over 7 years old in areas over 200K population
Non-Urbanized	1.9	80 (capital) 50 (operating)	N/A	Funds are utilized to support transit service in rural areas and small urban communities (under 50K population) . Services are offered mostly demand response or deviated fixed routes
Discretionary				
New Starts	8.0	80	N/A	Program funds are used for major capital investment in new fixed guideway systems
FTA Bus and Bus Facilities	4.3	80	N/A	SAFETEA-LU Sec. 3044 High Priority Projects or appropriated earmarked bus and bus facilities funds .
OTHER (SAFETY)				
FMCSA	2.52			Motor carrier safety grant, licensing and information systems under Title 49 USC
NHTSA	3.13			Safety programs, research, countermeasures performance and incentive grants

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