Energy & Infrastructure Program

National Transportation Policy Project

Workshop Report Proceedings

Strategies for Defining the Core Federal Role in Surface Transportation

Background Paper for BPC Workshop | December 2011

BIPARTISAN POLICY CENTER

ABOUT BPC

Founded in 2007 by former Senate Majority Leaders Howard Baker, Tom Daschle, Bob Dole and George Mitchell, the Bipartisan Policy Center (BPC) is a non-profit organization that drives principled solutions through rigorous analysis, reasoned negotiation and respectful dialogue. With projects in multiple issue areas, BPC combines politically balanced policymaking with strong, proactive advocacy and outreach.

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This white paper is the product of the Bipartisan Policy Center's National Transportation Policy Project. The findings and recommendations expressed herein do not necessarily represent the views or opinions of the Bipartisan Policy Center, its founders, or its board of directors.

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Workshop Purpose

The National Transportation Policy Project (NTPP) of the Bipartisan Policy Center (BPC) has consistently advocated for a consolidated, accountable, and performance-based federal surface transportation program. BPC has proposed specific program consolidations, ideas for improving accountability, and various performance measures. Defining areas of responsibility for the federal program—in other words, defining the core federal role in surface transportation—has proved particularly challenging, however.

BPC recommends moving toward a "mode-neutral" federal program that effectively targets federal resources to advance five core national goals:

- Economic Growth
- National Connectivity
- Metropolitan Access
- Energy Security and Environmental Protection
- Safety

BPC is involved in this work because the federal program, regardless of its size, needs to be more performance-based and accountable. With limited federal resources and growing infrastructure investment needs, it is more important than ever to ensure that public dollars are spent wisely. But a greater emphasis on performance and accountability necessarily also requires a better definition of what constitutes the federal role.

Currently, the only defined federal transportation "system" is the National Highway System (NHS), which includes the Interstate Highway System. But the NHS, as its name implies, is limited to a single type of transportation infrastructure: highways and roads. Moreover, it includes many facilities that should not be largely dependent on federal funds for capital maintenance and preservation, because the benefits they provide are primarily local.

Previous BPC reports have called on Congress to appoint a bipartisan commission to identify the elements of the nation's transportation network that should be included in a federal system. Such a system would, no doubt, include parts of the existing NHS, as well as other modal networks deemed to be of national significance.

To date, this recommendation has gained little traction in Congress. MAP-21, the surface transportation reauthorization law signed on July 6, 2012, specifies some national goals supported by performance measures. However, this bill does not address the fundamental issues of long-term funding sustainability or define the core federal responsibilities.

In an effort to move the conversation forward, BPC convened an expert group to explore how Congress might go about defining the federal role and core national transportation interests. This paper summarizes the work and findings of that group.

Workshop Structure

In December 2011, BPC held a workshop titled "Strategies for Defining the Core National Surface Transportation System" at BPC's offices in Washington, D.C. Twenty-five individuals attended the workshop; they included current and former officials from state departments of transportation and from the U.S. Department of Transportation (DOT), a former governor, a former U.S. senator, academics, and other representatives from diverse transportation groups. A complete list of conference participants is included at the end of this document.

Specific workshop goals included (a) exploring alternative approaches to defining the core national system and (b) identifying politically pragmatic approaches to achieving transportation policy reform.

The workshop was designed to facilitate conversation. A report and initial presentation by John Fischer on the history of transportation policy in the United States helped to frame the discussion.

Moderated panels were asked to lead focused discussions on several specific areas:

- Addressing issues and challenges in redefining the federal role
- Outlining lessons learned from previous efforts
- Assessing alternative approaches or processes for clearly defining the core national-interest system
- Evaluating alternative approaches
- Exploring the perspectives of key stakeholders
- Charting politically viable next steps

At times, participants were asked to bring their expertise to bear on a particular topic, but most of the discussion was free-flowing and directed toward finding areas of agreement that could be further advanced. The conference ended with a list of action items, which are presented at the end of this document.

Key Areas of Discussion

The discussion at BPC's workshop echoed much of the current national debate on the federal transportation program. This section summarizes important insights that emerged in different topic areas over the course of the workshop.

The Current Debate over Defining the Federal Role in Transportation and Applying Performance Measures Is Not New

A historical perspective of the federal government's involvement in transportation is useful to frame any discussion about reforming the existing scope of the core federal system. "Highlights of the Evolution of the Federal Role and Focus in Surface Transportation," by John Fischer, provides much of this context; it is attached as an appendix.

The federal government's role in transportation is set forth in Article I, Section 8, of the U.S. Constitution, which gives Congress the power to regulate interstate commerce and to establish "post roads." Fischer states, "These two provisions have been sufficient to give the federal government a role in the creation of transportation infrastructure and in the regulation of transportation activity."

Congress has interpreted this section to provide a basis for implementing many national transportation programs, including the transcontinental railroad, the Interstate Highway System, and the regulation and deregulation of the rail, air, and truck industries.

Fischer concludes that Congress is "still grappling with the boundaries of that definition." But one trend is clear: With the exception of deregulation, "transportation policy has grown by addition over the years." This is all the more evident in program reauthorizations since 1991, which have allowed the federal surface transportation program to grow to encompass a very large system with very few constraints on eligibility. MAP-21 is evidence that Congress is beginning to recognize the importance of national interests and program consolidation, but broad eligibility and an oversized National Highway System remain.

When Abraham Lincoln was serving in the U.S. House of Representatives, he suggested the use of statistics-based performance measures so as to "have a stern, unbending basis of facts—a basis in nowise subject to whim, caprice, or local interest," when making transportation investment decisions. The notion that transportation investments should be targeted—far from being a novel idea—has evidently long been part of the debate.

The federal surface transportation program has not had a focused purpose or defined objectives since the completion of the Interstate Highway System. With all federal programs

now being affected by funding constraints (and with little likelihood of an increase in user fees dedicated to surface transportation programs or investments), there almost certainly will have to be a renewed focus on the scale and character of the core federal interest in surface transportation, especially as current surface transportation legislation depletes the balance of the trust fund.

Americans Do Not Pay the Full Cost of Transportation

While funding for transportation operations, maintenance, and investment in the United States derives from a variety of both general taxes and user-based fees and charges, this funding is significantly dependent (at both state and federal levels) on motor fuels taxes ("gasoline taxes"). Gasoline taxes are an increasingly ineffective and inaccurate proxy for use. They fail to reflect the actual costs imposed on the transportation system by a specific user and, at the federal level (where fuel taxes are dedicated to the Highway Trust Fund), the revenue they generate are no longer adequate to meet the federal government's obligations as established by Congress in successive surface transportation bills.

In recent years, this shortfall has necessitated the transfer of substantial sums from the General Fund to the Highway Trust Fund to ensure that the U.S. DOT is meeting its funding obligations to state and local grantees on a timely basis.

The situation is very different in other developed countries, where gasoline taxes are typically between two and three dollars per gallon, according to the U.S. Energy Information Administration. This is many times more the average 49-cents-per-gallon gas tax in the United States, which includes both state and federal tax rates. And while toll roads are rare in the United States, Europe and other countries regularly levy tolls for the use of tunnels, bridges, and highways. These tolls are a much better proxy for use than gas taxes.

Furthermore, the United States is unique in dedicating gas tax proceeds to transportation trust funds. Gas taxes abroad are typically used to generate general fund revenue and are not necessarily linked to transportation investment. Yet even with dedicated funding the United States invests a smaller portion of GDP in transportation infrastructure than other developed and developing nations. According to the Carnegie Endowment, "as a share of GDP, Europe is investing twice as much in transportation and China is investing four times as much as the United States."

The U.S. surface transportation network is also unique in comparison with other, similarly vital domestic infrastructure systems, such as systems for the delivery of electricity and natural gas, water and sewer, telephone, and cable and Internet services.

While all of these networks are essential to the functioning of any modern society, the way that they are paid for varies. For the most part, each of the other non-transportation networks included in this list is paid for on a usage basis. That means that if the user does not pay for the service then he or she is disconnected from the network.

However, transportation does not work in the same manner. First, revenue does not reflect the full cost of most transportation facilities. Vehicle travel on roads is the dominant mode of transport in the United States, but highway users pay on average only $1 per day into the federal program. This is far less than the cost of maintaining the roads that comprise the NHS alone. Moreover, many local roads that are essential to the NHS network are paid for using revenue raised from non-highway-related sources. The gasoline tax is inadequate to support our existing transportation infrastructure needs.

Second, most users of the highway system cannot be "cut off," when the bill is not paid. Although conditions may deteriorate, roads will remain open regardless of how much funding is available for infrastructure investments. In short, Americans are accustomed to viewing transportation infrastructure as a "free" public good. While citizens may complain that roads are congested or in need of repair, they do not necessarily recognize the link between these problems and their willingness to pay for transportation programs.

Within the United States, these comparisons point to a division of opinion among political leaders, transportation professionals, and the general public about how to fund transportation programs. Some see the European example of greater reliance on general funds as a better approach to assure adequate infrastructure investments, while others argued that the United States is fortunate to have a dedicated funding source for its surface transportation program.

Traditionally, America's approach to transportation investment has linked funding and purpose. In recent years, however, this connection has frayed—at least in the minds of the public and of public officials who are responsible for funding transportation programs.

Without a clear sense of purpose and, at the federal level, a clear articulation of national interests and goals, support for transportation funding has receded. This lack of support is compounded by a lack of consensus about whether surface transportation services and investments should be funded by users (whether through motor fuels taxes or tolls or other forms of direct user charges) or by American taxpayers more broadly (either by dedicating a portion of revenue from other, more generally applied, taxes or through appropriations from general funds).

Current Federal Policy Is Broken

Since the December 2011 workshop, Congress was able to pass a 27-month surface transportation bill. This remarkable display of bipartisanship demonstrated that transportation remains an important issue to Congress and to the president. However, the bill still lacks a structure and funding source to continue the program over the long term. Much of the discussion regarding the broken federal program is relevant and will be a central point of dialogue as this law nears its end.

Regardless of whether a user-fee or general-revenue system is better, it is clear that the current system in the United States is not working. We have seen a notable loss of public

trust in federal transportation programs, as reflected by Congress's unwillingness to increase the federal gasoline tax or to identify other sources of revenue to support these programs. In the past, when Congress and the public have perceived a clear need for transportation system improvements, they have accepted increased taxes and fees to pay for them. But without greater accountability and focus in the federal surface transportation program, it will be difficult to gain support for additional revenue.

The NHS is often described as a "distinction without purpose." Without a clearer definition of purpose, it is impossible to clearly define the federal transportation system in terms of those components that serve core national interests. Policy makers need to consider which aspects of the transportation network are inherently federal.

This discussion raises the question of whether the federal government has an active role to play beyond distributing money to the states. Many states and localities have exhibited innovation and leadership in transportation policy—prompting some to argue for the devolution of all transportation responsibilities and decision making to the states.

The Core Federal System Should Be Re-Sized

The NHS, designated in 1995, is comprised of approximately 160,000 miles of highways and major arterials, including the Interstate Highway System. However, many more roads are eligible for federal highway assistance, so that the actual federal-aid eligible highway network comprises almost one million miles.

Industry experts, recognizing current funding limitations, have urged the federal program to focus on the preservation, maintenance, and operations of the existing core national system. This includes optimizing traffic flows on existing roadways and minimizing the costs of maintaining them. Implicit in this approach is the idea that resources should be targeted to key parts of the system.

Assuming that there is general support for a focus on system preservation, the federal government must decide what it wants to preserve. Many roads are eligible for federal aid but deliver primarily local benefits. While there is broad support for redefining the scope of the federal system, views about how to approach this task vary dramatically.

Those in favor of dramatically reducing the federal program generally argue in favor of giving more power and options to the states. Their specific suggestions include phasing out the federal fuel tax, allowing for expanded tolling at the state level, and passing legislation that would enable states to take greater advantage of tax increment financing, value capture, and other financing tools that are not fully used. Some go so far as to suggest that federal responsibility for transportation policy should be largely limited to gathering and disseminating data.

Others, including BPC, take the view that while the NHS and the current federal-aid system are too broadly defined, the federal government has an important and robust role to play in transportation policy and investment decisions. BPC believes limited federal funding should

be targeted to those projects that advance clearly recognized and articulated national goals. These goals include enhancing the national and inter-regional movement of freight and goods and assuring metropolitan accessibility.

Areas of Agreement

Workshop participants were able to come to agreement on a number of key issues. While individual differences of opinion remained, some areas of general consensus are described below.

Today's Austere Fiscal Environment Provides Impetus for Significant Change

The current era of overriding focus on deficit reduction presents major challenges for transportation policy. Opposition to any revenue-raising measures, in particular, poses a serious problem for the future of the current trust-fund system.

The federal authorization bills of the last few decades were passed in an environment marked by overall growth in transportation funding. Now that transportation funds are declining, transportation has to compete with other federal programs in the face of concern about annual budget deficits and a rising national debt.

Workshop participants agreed that current funding challenges point to the need for significant change in the goals, purpose, and structure of the federal program.

States Need More Options

While much of the discussion at the workshop focused on the current funding situation, participants also talked about the need to give states better tools and greater flexibility to improve transportation infrastructure without federal help. Federal gas tax revenue is not likely to increase in any meaningful way, and states and localities, which are suffering the direct effects of deferred maintenance and increased congestion, need options. Innovative financing tools could be very useful to states, and tolling is a financing option that should be more available to them in the future.

A principal suggestion that emerged from workshop discussions was to give states the option to toll segments of the Interstate Highway System. Currently, tolling is allowed only on segments that were built and had tolls before 1956 and under a few limited pilot programs. The ability to toll would give states another tool to innovate, to raise revenue, and potentially to manage congestion.

The federal role in this instance would be to ensure that states implement tolls in ways that safeguard the general public from abuses and conform to certain rules. Beyond these safeguards and ground rules, the decision about whether to make use of tolls as a revenue-raising option should be left to states.

Need a Robust Debate on Program Devolution

Along with tolling, workshop participants engaged in a broader discussion about the core federal interest and role in surface transportation more generally. Some participants thought that the federal program should be mostly abandoned, leaving to states and metropolitan regions the responsibilities of operating, maintaining, and expanding the existing system. While this debate was far from resolved, strong arguments were voiced for and against the devolution of federal transportation responsibilities to the states.

Those in favor of devolution cited a low tolerance for top-down approaches to governance among the American public. They claimed there is no public interest in the federal program and that states have a better idea of their transportation needs than federal employees in Washington.

Those who supported a continued federal role in transportation went back to the Constitution and its explicit recognition of a federal responsibility in regulating interstate commerce. They also pointed out that state priorities often differ from national priorities: Many transportation facilities cross state borders and national transportation research would be at significant risk of neglect if the federal program were to be devolved.

Moreover, it is unlikely that states would fully replace revenue from the federal gasoline tax if the tax were repealed. It is more efficient to tax gasoline at the federal level than at the state level, and a uniform federal tax promotes fairness and energy efficiency.

Despite different views on the appropriate scope of the federal role, there was general agreement that the current federal program is not functioning as a truly national one and that infrastructure investments needed to advance key national interests are being neglected. Under these circumstances, some would argue that devolution would take advantage of the capacity for innovation already being demonstrated at the state level. Clearly, if there is a federal role in surface transportation, it needs to be more unambiguously defined.

Workshop participants agreed that this is an area that warrants further discussion to determine whether the full or partial devolution of federal responsibilities and activities could perhaps improve the transportation system.

Focus on a National Freight System and on Metropolitan Regions

Assuming that there is a federal role in transportation, participants agreed that two areas of infrastructure investment clearly justified a national interest focus: a national freight system and metropolitan area networks.

The concept of a national freight system encompasses a multimodal approach to improving the ways in which freight is moved to, from, and across the country. Such a system would

include long-distance routes and would require a clear structure. A defined national freight system could offer potentially significant national "pay-offs" if it enabled goods to be transported and delivered to markets more efficiently and more productively.

A national freight program has limitations, however. The most important bottlenecks in the existing freight system are located in highly urbanized states. This means representatives of less urbanized states might not support legislation that would direct revenue to alleviating these bottlenecks. Also, an intermodal national freight system would need to include privately owned freight railroads. This could lead to concerns about the potential for public resources to be used in ways that benefit private parties.

A metropolitan program would focus on metropolitan regions as areas of national-interest importance because of their key role in the national economy. This would provide a basis for investments aimed not merely at connecting cities (though that would remain a core purpose of the program), but also at addressing the congestion and mobility challenges that currently confront many major metropolitan regions. Effective responses to these challenges will require a focus on the institutional structure of metropolitan planning organizations and efforts to improve their capabilities in addressing metropolitan transportation problems.

Regardless of whether freight transport or metropolitan regions are (or are not) included in a redefined national program, federal investments in surface transportation should be focused on results and outcomes. Recent legislation appears to move in this direction. However, even this legislation is mostly formula-based, which makes it more challenging to introduce performance principles. Expanding existing discretionary grant programs or introducing new ones could help to make the federal program more performance-based.

The Case for Further Consideration of the Federal Role

Since BPC's workshop in December 2011, the subject of federal transportation program reform has taken on greater significance. While Congress has managed to overcome many obstacles and make transportation a top legislative priority, this diagnosis misses another important and inconvenient truth: As revenue from motor fuels taxes decline in real terms, Congress and the administration will need to size the federal role in surface transportation to fit available resources.

Since 2008, Congress has acted on three separate occasions to transfer a total of nearly $35 billion in General Funds to the Highway Trust Fund. Furthermore, MAP-21 requires an additional transfer of nearly $20 billion and is designed to exhaust the fund's balance in September 2014. Federal surface transportation programs are no longer funded solely through transportation-related user fees. As a result, support for these programs has become part of, and intertwined with, a larger discussion about the nation's overriding fiscal issues and about how to address the problem of growing annual federal budget deficits and a ballooning national debt.

In this environment, it is inevitable and appropriate that current challenges to surface transportation funding should trigger a deeper examination of the federal role in transportation—both in terms of policies and programs. Although John Fischer's paper concluded that Congress has rarely if ever defined the boundaries of the national interest in transportation, the historic trend toward "growth by addition" is now in question. What this era has to decide is whether a stagnant or even smaller pool of federal funds will be allocated in ways that reflect clearly defined national goals and purposes.

Beginning of a Discussion in Congress

The new law begins to set some boundaries of the federal interest, and outlines of a dialogue about the boundaries of the federal role in surface transportation are beginning to emerge. This suggests that the next Congress may engage these issues more directly. At one end of this discussion are those who argue that it is time for the federal government to withdraw largely or entirely from the transportation arena. Various amendments aimed at promoting the devolution of transportation programs and policies from the federal level to the states were proposed in connection with MAP-21, and some of them attracted considerable, if not majority, support when they were offered on the floor.

Movement toward redefining the national interest in transportation can also be seen in a growing tendency, evident over the last few legislative cycles, to expand states' "flexibility" and discretion in using federal surface transportation funds. At the extreme, this trend would convert all federal surface transportation funding into a program of block grants, in which transportation-related funds are raised at the federal level but fully allocated back to states (with or without some redistributive elements) for them to direct to whatever transportation projects they choose.

Besides giving states more flexibility and discretion in the use of federal transportation funds, MAP-21 also articulates specific national goals and desired outcomes and took some important first steps toward a more performance-based and accountable federal program. These performance-related provisions could provide a foundation for a more clearly defined federal role in surface transportation.

There were signs during the debate over surface transportation authorization legislation that Congress is prepared to reevaluate the federal role in surface transportation in more fundamental ways. Both chambers of Congress considered eliminating the requirement that a certain portion of federal funds have to be spent on so-called "transportation enhancements" and ultimately revised the requirement to give states more flexibility on how to spend those dollars. Efforts in the House of Representatives to end dedicated federal funding for mass transit and in the Senate to devolve federal surface transportation programs to the states failed, but there are clear indications that these issues will come up again in future debates over a new surface transportation bill.

What to Do in the Short Term

As Senator Mark Warner (D-VA) emphasized in an appearance at the BPC workshop, the nation's fiscal condition is the overriding issue facing the federal government right now. At the time, it seemed unlikely that Congress would be able to resolve the intertwined issues of the scope and character of the national interest in transportation, and the appropriate level of surface transportation funding, except in the context of addressing the broader deficit and debt issue. While new legislation has been passed, it is designed to last only 27 months, and the larger problems of funding and scope still loom.

In that context, workshop participants and Senator Warner discussed a number of short-term steps that might be pursued:

- Include in the surface transportation bill provisions that allow states and metropolitan regions greater flexibility to implement toll and user-charge regimes.
- Remove federal barriers to state innovations, expand existing pilot programs, and leverage federal funds more effectively to stimulate private and public investment in transportation infrastructure.
- Emphasize the federal role in interstate freight and goods movement, specifically through the inclusion of a competitive multimodal grant program to address large multijurisdictional freight bottlenecks.
- Promote research, data, and pilot programs related to performance management.

What to Do in the Long Term

Without a clear definition of the federal role in surface transportation, funding constraints and declining resources will be problematic for the passage of future surface transportation bills. A better articulation of national goals and corresponding programmatic reforms offer the promise of more beneficial and effective transportation investments going forward, whatever the level of funding available for these investments.

Over the past few years, BPC has argued that current economic, fiscal, and social circumstances demand a clearer articulation of national goals and federal interest in surface transportation. Implicit in this position is our view that the federal government has a role to play in surface transportation—a role that is recognized in specific provisions of the Constitution. What is included in that role, however, might be defined differently in the future than it has been during earlier periods of U.S. history.

The worst outcome of all would be to reduce the resources available for investment in surface transportation without defining goals and without reforming programs. If the result of reduced federal funding is an across-the-board cut in investment, the national economy will suffer and most Americans will experience the adverse impacts of deteriorating transportation infrastructure in their day-to-day lives.

The appropriate forum for articulating national goals and defining the federal interest in transportation is Congress. Although the president and the administration also have a key role in providing leadership on these issues, Congress is where new authorizing legislation will ultimately be written. As a starting point, all parties to the debate must recognize that redefining the federal role in transportation and reaching agreement on funding levels will only be possible in the context of addressing and resolving the nation's deficit and debt problems.

Future federal surface transportation legislation should contain a clear statement of national goals. These goals must have operative force, in the sense that they are consistently reflected in funding sources and program structure. Future federal legislation should also incorporate criteria for defining the character and limits of the federal interest in transportation. In establishing national goals and defining criteria, it is important to remember that transportation is not an end in and of itself, but rather an enabler of broader and more far-reaching economic, social, and environmental purposes. Thus, for example, the intuition that the benefits of national and regional connectivity justified federal investment and interest served to underpin a range of major transportation initiatives at the federal level throughout the first two centuries of the nation's existence.

What are equivalent national purposes today? Do they include promoting greater efficiency in the international trade and movement of goods or providing for improved economic productivity and labor market flexibility in the major metropolitan regions that are the engines of America's economic growth and prosperity? These same national interests should drive federal support for state and local transportation programs and projects, and should dictate the levels and shares of federal investments in transportation assets.

Hopefully, the December 2011 workshop and this workshop summary will help to provide a foundation for future progress by clarifying key issues in the current debate and suggesting an analytical framework on which future decisions about transportation funding sources, program structure, and spending allocations can be based.

Energy & Infrastructure Program
National Transportation Policy Project

The Evolution of the Federal Role in Surface Transportation

Background Paper for BPC Workshop | Prepared by John Fischer

In recent years, Congress has been unable to complete the legislative process needed to give surface transportation a mission and a solid multiyear financial footing on a timely basis. Although Congress did enact transportation legislation in 2012 there remains a missing consensus on what the appropriate role of the federal government is in the provision of transportation infrastructure. And even though many identify revenue as the driving challenge, the absence of political will to identify and enact a sustainable revenue source appears to be rooted in an absence of public or political confidence in the "returns" on federal "investment." Lacking consensus on either purpose or payment, reauthorization of federal programs will most likely continue to be contentious and difficult in the years ahead.

The National Transportation Policy Project (NTPP) of the Bipartisan Policy Center (BPC) has tried to move the policy debate forward by offering ideas on how federal policy can get through the current impasse by focusing on ways in which the surface transportation program can be restructured to meet key national goals and, at the same time, provide the most value, on a measurable basis, for the money being spent. All of these goals, in the NTPP's view, can only be achieved by making federal programs performance oriented. Further, NTPP has concluded that a performance-based program cannot coexist with the current federal "system," where project eligibility is nearly ubiquitous. NTPP has continued to recommend that agreement on specific national goals must be accompanied by a new and unambiguous agreement on *what* the national system is and how the United States will generate sustainable revenue to support investments to maintain its performance.

This paper shows that many of the policy ideas currently under discussion have historical antecedents and that understanding these antecedents helps to identify the way forward for federal transportation policy. This summary, by necessity, identifies only selected key events in its historical discussion as well as broad observations drawn from the review of the evolution of national transportation policy.

Much has changed in the 235 years since this nation declared its independence, but many of the underlying issues and challenges have not. The framers of the Constitution struggled with the concept of the federal role in national life. Although the Constitution does not address transportation in detail, it nonetheless specifically mentions postal roads and, more significantly, interstate commerce as federal issues. Federal transportation policy as we know it has evolved against this backdrop but not without controversy.

History as prologue has its limits. The past is not a model for everything. The founders had no concept of the car or the airplane, though they would probably not be surprised to find that we are still grappling with the question of what constitutes the *national* interest in transportation policy. These are the types of insights that this paper seeks to address. Below are the policy highpoints of our collective transportation policy history. This is followed by brief highlights of possible lessons we can draw from our history and perhaps use in charting a path out of our ongoing policy dilemma.

Selected Key Milestones in U.S. Transportation Policy History

KEY EVENT	OBSERVATIONS
The Constitution, 1787: Commerce Clause and postal roads.	Clear inclusion of national transportation as a matter of federal interest.
Report on Manufactures, 1791; *The Gallatin Report*, 1808.	Founders had expansive infrastructure plans but no way to fund them while dealing with plenty of other distracting nation-building issues. States and private entities fill the vacuum. Little coordination between states.
Vetoes of "Internal Improvement" legislation by Presidents Thomas Jefferson, James Madison, James Monroe, Andrew Jackson, and James Polk.	Presidential vetoes question boundaries of constitutional authority. Jackson's view that interstate projects have merit, but intrastate projects do not, has resonated for years. States rights and sectionalism dominate the public discussion.
The Cumberland Road, 1806; the Erie Canal, 1824; the first Turnpike era. Other canals get built around this time as well.	Congress funds the construction of the Cumberland Road (though Monroe will veto legislation to maintain it, 1822). Most projects of this era are funded by states and/or private entities.
Gibbons v. *Ogden*, 1824.	The Supreme Court provides an expansive view of Commerce Clause authority that will, in time, support a larger direct federal role in transportation infrastructure.
Land grants to states for canals and railroads, 1820s–1850s.	Direct aid is given to states in the form of land for the creation of transportation infrastructure in new states and territories with large amounts of unoccupied/unproductive land.
The Pacific Railroad Act, 1862: transcontinental railroads.	The 1862 Act takes advantage of the Civil War to break a policy stalemate and begin construction on transcontinental routes. Land is granted directly to the railroad companies, which are also given revenue bonds. While support first focused on central U.S. route, the agreement included future support for additional routes.
Interstate Commerce Act, 1887.	The Act fosters a direct federal role in the operation of the national transportation system. It begins a century of "public utility" regulation that will have a major impact on the development of interstate commerce.
The "Good Roads" movement, 1880–1910: creation of state highway departments.	First bicyclists, then motorists, begin the push for improved roads at the state and local levels.
Federal-Aid Road Act, 1916: viewed as the starting point for the modern federal-aid highway program.	Federal aid is minimal, but it gives the Bureau of Public Roads (BPR) an oversight-and-approval role in the construction and maintenance of roads using federal funds. The Act creates the first formula-funding distribution system and creates the still-existent federal-state partnership.
Federal-Aid Highway Act, 1921.	The Act creates the federal-aid highway system. Routes are jointly determined by states and BPR (but no more than 7 percent of roads in any state). The Act limits federal spending to the designated system and solidifies BPR's oversight role.
The Depression Era, 1929–1940. Massive spending on infrastructure of all types by the Civilian Conservation Corp (CCC), Works Progress Administration (WPA), and other agencies.	The Depression led to direct federal intervention outside regular programmatic channels at a level not seen before or since. This created a much more robust transportation system, especially in rural areas.
BPR report: *Toll Roads and Free Roads*, 1939; Federal-Aid Highway Act; 1944 (which authorizes the interstate highway system, though funding does not occur until 1952).	Planning begins for an interstate system. States are reluctant to see an expansion of the federal role in highway construction. States view fuel taxes as state taxes. Post–World War II auto ownership increases dramatically.
Federal-Aid Highway Act, 1956	The Eisenhower administration provides the leadership to create the interstate system and the highway trust fund.

	Congressional debate leading up to the 1956 Act is focused on avoiding adding to the national debt.
Highway Safety Act of 1966 leads to the creation of the National Highway Traffic Safety Administration (NHTSA), 1970; Urban Mass Transportation Act, 1964, creates Urban Mass Transportation Administration, 1966; Department of Transportation (DOT), 1966.	The federal role in surface transportation expands. UMTA and NHTSA open the door for a major program expansion, which will be facilitated in part by the creation of the DOT.
Airline Deregulation Act, 1978: Staggers Rail Act and Motor Carrier Act, both 1980.	These Acts mark the end of public-utility regulation and leads to major improvements in the efficiency of freight and intercity transportation.
Surface Transportation Assistance Act, 1978.	Creates legislative—if not financial—parity between highway and non-highway transportation programs.
Surface Transportation Act, 1982	The Act raises fuel taxes by 5 cents per gallon and creates a separate mass-transit account in the highway trust fund. President Ronald Reagan initially opposes the Act but changes his mind, supporting the Act as a user-fee and recession-fighting measure.
Deficit Control Acts, 1990 and 1993	The Acts increase fuel taxes to the current level—but not initially: Half of each increase goes to deficit reduction for a period of time. The Act breaks the post-1956 precedent that fuel taxes can only be used for transportation purposes at the federal level.
Intermodal Surface Transportation Efficiency Act (ISTEA), 1991	The Act creates the program structure still in place today, which is intermodal in name if not in reality. It also introduces direct environmental links to transportation, creates new roles for metropolitan planning organizations, and provides lots of program-funding transferability. The Act reduces the highway lobby's policy ascendency in surface transportation decisions and brings new stakeholders into the fold (e.g., environmentalists, bicyclists).
The National Highway System Act (NHS); the other Transportation Efficiency Acts, TEA21 (1998) and SAFETEA (2005).	Demand for an ever-greater donor/donee guarantee dominates policy debates. A minimum guarantee and a follow-on Equity Bonus program together become the largest single surface transportation program. Plus, there is some financial innovation in TEA bills (e.g., tolls and the *Transportation* Infrastructure Finance and Innovation Act). There is significant program expansion throughout this period as well as some program growth and consolidation. There are also some attempts at creating increased program efficiency, but almost all programmatic changes are incremental. Earmarking expands exponentially.

Lessons Learned

The National Interest. We have an expansive surface transportation program that is in need of serious reform and refocusing. Refocusing, from a historical perspective, will be the harder of the two to deal with. This stems in part from the fact that transportation policy has grown by addition over the years and rarely by subtraction.

Major Change Is Infrequent. Very few of the federal government's transportation measures over the years can be viewed as having initiated major new programs or policy changes (e.g., the Pacific Railroad Act, the Interstate Commerce Act, the Federal-Aid Highway Act of 1956, the Urban Mass Transportation Act of 1964, Intermodal Surface Transportation Efficiency Act (ISTEA), and perhaps a couple of others). Almost all federal action, with these few exceptions, has been incremental in nature. America's ongoing reauthorization discussions have not hit on any single policy idea that would offer a singular focal point comparable to those in place when the above examples were initiated.

Good Timing Is Essential. The right circumstances need to occur for major change to occur.

Major Change Takes Leadership. The intercontinental railroads, the interstates, deregulation, and major program changes like ISTEA were all ideas that percolated for years before they were translated into legislation. In each instance, the concept only came to fruition as a result of strong leadership. It may be the dearth of similar high-profile, well-placed leadership that has made the current reauthorization morass so intractable.

Congress Has Taken Ownership of the Surface Transportation Policy Debate. Beginning in the 1970s, the bills emanating from Congress have taken primacy over those produced by the executive branch. It has been suggested that the transition from White House leadership to congressional leadership has changed the focus of transportation legislation from national to regional/local and added a large dose of parochialism.

Transportation Has Not Been a Partisan Issue (though it could become one). Historically, political parties have had little to do with transportation decision making. Political issues, however—such as the deficit problems in the 1980s, 1990s, and today—do affect transportation policy making. The urban/suburban/ rural policy split as played out through transportation policy making is a good example of the role of politics in the legislative process.

The State Role in Surface Transportation Has Evolved. Today's strong federal role in surface transportation is at odds with the states' pre-1956 view that the provision of transportation infrastructure was largely their domain, as was the power to impose fuel taxes. States now routinely lobby for an expanded federal program and often support increased federal user fees for transportation as well.

As the Surface Transportation Bill Has Grown, So Has the Stakeholder Community. In the last 55 years, there has been a continued expansion of the coalition that supports federal surface transportation programs (e.g., transit interests, environmentalists, bicyclists). All of these groups now derive some benefit from the surface transportation program and, most importantly, have an expectation of future expanded benefits.

Geographic and Other Types of Equity Issues Ultimately Dominate Policy Debates. Donor/Donee and similar issues have been the most intractable in recent legislative debates. These issues are at odds with calls to refocus the federal program on true national transportation policy needs. Also, if the goal of the federal program is to redistribute taxes in the form of projects—primarily to the states from which they are collected—why have a federal intermediary?

Project Eligibility Rarely Disappears. History suggests that funding eligibility for certain activities grows by addition, consolidation, changes in definitions, and other marginal mechanisms. Even when programs or particular funding categories are eliminated in law, some vestige of the program or eligibility for that program's activities usually survives.

The Debate Changes Without Additional Money. Over the last three decades, political controversies over equity and other issues have largely been settled by the availability of additional funding. There is agreement that the United States is under-investing in its transportation systems, but this comes at a time when expanding federal expenditures for any purpose is increasingly difficult to discuss, much less to enact. In this context, it is arguably more important than ever to ensure that all federal resources directed to transportation are targeted to truly national priorities and programs that will improve the overall performance of the U.S. system and the competitiveness of the U.S. economy. Transportation, like all federal spending, is at a crossroads of clearly deciding what precisely Americans want the federal government role to be—and how to pay for it.

Introduction

"When I want to understand what is happening today or try to decide what will happen tomorrow, I look back."

–Oliver Wendell Holmes Jr.

In February 2012, Congress enacted an FAA reauthorization act, the FAA Modernization and Reform Act of 2012, ending an almost five year legislative process by creating legislation that authorized the program for four years. In July 2012, Congress enacted a surface transportation reauthorization act, Moving Ahead for Progress in the 21st Century Act (MAP-21), completing a process that had spanned at least four years and produced a two year piece of legislation.

At the time this paper was completed in December 2011 it seemed unlikely to many observers that either of these pieces of legislation were to be forthcoming even in 2012, at least in part, because of a missing consensus on what the appropriate role of the federal government is in the provision of transportation infrastructure. New legislation, not withstanding it is the view of this paper that these policy questions have only been partly addressed by this legislation and not for the long term. As a result, it is the view here that passage of Map-21 and the FAA reauthorization act does not change the validity of the questions raised in this paper, nor the need for continued debate about the role of the federal government in the provision of transportation infrastructure.

The National Transportation Policy Project (NTPP) of the Bipartisan Policy Center (BPC) has tried to help move the policy debate forward by offering ideas on how federal policy can get through the current impasse by focusing on restructuring the surface transportation program to meet key national goals while, at the same time, providing the most value, on a measurable basis, for the money being spent. The NTPP has produced two reports in recent years detailing how this can be done. The 2009 NTPP report offered five key goals for the surface transportation program: economic growth, national connectivity, metropolitan accessibility, energy security, and environmental protection, and safety. NTPP's most recent report, from June 2011, focuses on two concepts: advancing national purposes and leveraging non-federal funds. All of these goals can only be achieved by making federal programs performance oriented.

All of the NTPP's findings can be viewed in the context of recent policy making alone. It is the intent of this paper, however, to show that many of the ideas currently under discussion have historical antecedents and that understanding these antecedents may, in some way, help identify the way forward for federal transportation policy.

Most of the principal transportation practitioners engaged in the current debate have extensive expertise in the subject. For each, however, the frame of reference is different.

For some, the policy perspective goes back a decade or two, perhaps to ISTEA in 1991. Others will remember when U.S. transportation industries—rail, airlines, trucks, etc.—were all subject to extensive federal regulation as well as the major philosophical shift that resulted from their deregulation. A few others have even tracked these issues throughout the entire interstate-highway era and can remember back to an era when the nation appeared to have a unified national transportation policy. Each of these perspectives, however, has its limits and its biases. What this paper will try to suggest is that there is a larger framework in which contemporary events can be viewed.

Much has changed in 235 years since this nation declared its independence, but many of the underlying issues have not. The framers of the Constitution struggled with the concept of the federal role in national life. Although the Constitution does not address transportation in detail, it nonetheless specifically mentions postal roads and, significantly, commerce as issues over which the federal government has jurisdiction. Federal transportation policy as we know it has evolved against this backdrop—but not without controversy. There has been a constant debate about how large the direct federal role in providing transportation infrastructure should be.

A few of the framers, notably Alexander Hamilton, called for a significant federal role in the expansion of the nation's internal transportation system, which at that time consisted largely of roads and canals. Secretary of the Treasury Hamilton's *Report on Manufacturers* (1791) clearly makes this case.[1] Although the embryonic United States had few resources to devote to large-scale public works, the federal government nonetheless sought to create policies that would allow and support the creation of infrastructure by the states and by private enterprise. Later—in fact, almost a century later—the federal role would become more direct and federal funding would become an important component of national transportation spending.

A prime example of how history might instruct us in how to deal with the national interest issue can be found in the remarks of a young Illinois representative to the 30th Congress named Abraham Lincoln. Speaking before the House of Representatives on June 22, 1848, in response to the veto of a bill on internal improvements by President James Polk, Representative Lincoln, a supporter of internal improvements, offered the following:

> **I would not borrow money. I am against an overwhelming, crushing system. Suppose that at each session, Congress shall First determine how much money can, for that year, be spared for improvements; then apportion that sum to the most important objects. So far all is easy; but how shall we determine which are most important? On this question comes the collision of interests. I shall be slow to acknowledge that your harbor or your river is more important than mine, and *vice versa*. To clear this difficulty, let us have the same statistical information which the gentleman from Ohio [Mr. Vinton] suggested at that the beginning of this session. In that information we have will have a stern, unbending basis of facts—a basis in nowise subject to whim, caprice, or local interest. [Emphasis added.] The pre-limited amount of means will save us from doing *too much*, and the statistics will**

> **save us from doing what we do, in *wrong places*. Adopt and adhere to this course, and it seems to me the difficulty is cleared.[2]**

Lincoln, who was probably our only president who worked in the transportation industry before he ascended to the nation's highest office, is obviously dealing with the still ongoing issue of defining the federal interest in providing transportation infrastructure. In the same statement, one can also see Lincoln's interest in having federal projects selected based on measurable benefits. It is clear that he was an early proponent of what we would now call "performance standards," a key element of the NTPP's policy recommendations.

History as prologue has its limits. The past is not a model for everything. The founders had no concept of the car or the airplane—though they would probably not be surprised to find that we are still grappling with the question of what constitutes the *national* interest in transportation policy. These are the types of insights this paper will try to offer. First, this paper will walk through the policy highpoints of Americans' collective transportation policy history. Finally, it will offer some perspective on overarching lessons found throughout U.S. history—lessons that perhaps can be used to find a way out of this ongoing policy dilemma.

Early Origins

The Constitution of the United States, Article I, Section 8:

The Congress shall have Power …

> *To Regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes;*
>
> *To establish Post Offices and post Roads.*

In colonial times, the road network in the nascent United States was of poor quality and in some instances nonexistent. There were postal routes and King's roads, but they were few in number and mileage. As a result, much of the commerce in the former colonies was by water. The Continental Congresses and later the governing structure created by the Articles of Confederation kept most government powers in the hands of the individual states. By the mid-1780s, it was quite clear that state-based power as envisioned by the Articles was fraught with problems. Among the most notable of these problems was the inability of the federal government to set tariffs and otherwise regulate commerce. Each state set their own tariffs both for interstate and international trade. The result was a situation in which the states sought competitive advantage by charging tariffs and other fees on commerce that had the net effect of disrupting and discouraging trade. Famously, Great Britain refused to enter into a trade agreement with the United States, in part, because any such agreement required the unanimous consent of all 13 states—an outcome the British viewed as unlikely based on their observation of the Confederation at work. Further examples of disrupted trade abounded. For example, New York set tariffs on goods shipped to New Jersey by way of New York's harbor. In retaliation, New Jersey began assessing fees to those passing Sandy Hook Lighthouse at the southwestern entrance of the harbor. These squabbles were a major impetus for the Commerce Clause of the Constitution.

After the states went about the business of creating a new Constitution for the nation in 1787, the need for a better transportation system became obvious quickly. The Constitution, as quoted above, doesn't say much about transportation. But it says enough. These two provisions have been sufficient to give the federal government a role in the creation of transportation infrastructure and in the regulation of transportation activity. The extent of the actual grant of authority found in these two provisions was debated thoroughly in the early 19th century and continues to be debated occasionally even today. Regardless of how one might view this grant of authority, the reality is that through policy fits and starts, through an occasional focused policy decision, and sometimes just through virtue of good fortune, the United States has created an interconnected system of roads, railroads, waterways, and airways. The connections are not always optimal or even good for that

matter. Whether this system meets our current and future needs, and the general consensus is that it does not, the United States has a working system on which to build.

Arguably, the first notable federal document in support of a national transportation system was produced in 1791 by Treasury Secretary Hamilton. In a communication to the House of Representatives, *Report on Manufactures*, Hamilton argued that the new republic needed as a matter of policy to encourage the growth of manufacturers.[3] Key to this effort was the creation of a system of roads and canals to facilitate internal trade.[4] Hamilton drew on the experience of Great Britain, the global economic powerhouse of the day, which had invested heavily in internal roads and canals. Congress, more concerned at the time with Revolutionary War debt and a host of other nation-building issues, would largely ignore Hamilton's admonitions, leaving the provision of transportation infrastructure largely to the states, localities, and private parties.

Federalists like Hamilton were in favor of an active federal role in the national economy, and this extended to infrastructure improvements. At the time and for much of the remainder of the 19th century, these would be known as "internal improvements." The Jeffersonians (Democrat-Republicans) who would follow the Federalists in office were not necessarily opposed to internal improvements. They were concerned, however, that the Constitution did not grant the federal government the power to engage in the direct federal funding of internal improvements.

In 1808, Treasury Secretary Albert Gallatin, would produce the *Report of the Secretary of the Treasury on the subject of Public Roads and Canals*. This work was done in response to a Senate resolution. The Gallatin Report as it is known, is an expansive document that provides detailed plans for a system of internal canals and a series of roads in what is now the Eastern part of the United States. The report, made shortly after the Louisiana Purchase, also discusses the need to tie the new territories to the existing states by way of roads and canals. The report starts out by making a very concise statement about why transportation infrastructure is of value. A statement that still resonates today:

> The general utility of artificial roads and canals, is at this time so universally admitted, as hardly to require any additional proofs. It is sufficiently evident that, whenever the annual expense of transportation on a certain route in its natural state exceeds the interest on the capital employed in improving the communication, and the annual expense of transportation (exclusively of the tolls,) by the improved route; the difference is an annual additional income to the nation.

The report mapped out canals, some of which would actually be built—but not by the federal government or with direct federal financial support. The report also called for a system of roads to provide for internal trade and communication. Gallatin was providing a map of the system that Hamilton had called for. The Gallatin plan, like the Hamilton concept before it, would not come to fruition. In fact, the system of roads that Gallatin called for did not exist until at least the early 20th century.

The Constitutional Question

Part of reason Gallatin's ideas were not advanced was that he worked for President Thomas Jefferson, who was dubious about whether the Constitution permitted the federal government to be engaged in the task of road building or canal building. Congress would pass the Cumberland Road act in 1806 and President Jefferson would sign it. This was the first instance in which the federal government explicitly provided funds for a major road. Jefferson, however, was concerned that the Constitution did not explicitly give the federal government the power to fund internal improvements. In his second Inaugural Address, Jefferson would suggest that Congress pursue a constitutional amendment to clarify that internal improvements were an appropriate federal role. Jefferson would express this view on several other occasions both before he left office and after he left office.[5]

His successor, President James Madison, also believed that there was a role for the federal government in the provision of internal improvements. President Madison's annual messages (equivalent to today's State of the Union addresses) in 1815 and 1816, both call for the federal government to fund internal improvements. But, again, these calls were accompanied by a bid for a constitutional amendment to allow this spending. In 1816, President Madison would veto a bill advocating internal improvements believing he could not do otherwise. A modest attempt was made during Madison's administration to amend the Constitution, but the effort died quietly.

In 1822, President Monroe would veto an act "for the preservation and repair of the Cumberland Road." In his veto, he largely objected to the imposition of tolls on the road, declaring that the federal government lacked constitutional authority to collect tolls and, importantly, to exercise sovereignty over the road.

President Andrew Jackson was faced with a similar dilemma when confronted with legislation that would fund a road entirely within Kentucky, the Maysville Road. The road enjoyed strong support from Jackson's political rival Senator Henry Clay. It is clear that President Jackson supported internal improvements, and he would sign several bills during his administration that provided for them. The Maysville Road, however, was in his opinion an inappropriate use of federal funds.[6] In his veto message, Jackson enunciated a principle that seems to have stayed in place for the rest of the 19th century. Specifically, Jackson stated that Congress should "*refrain from the exercise of internal improvements except of the national character* [emphasis added], unless they first procure from the states such an amendment of the Constitution as will define its character and prescribe its bounds." Importantly, the veto message goes on to suggest that it might be plausible for the federal government to support a project that was *interstate* in character, but that it was not appropriate to fund any project that was entirely *intrastate* in character. After the fact, President Jackson believed that his veto was politically popular and enhanced his reelection chances.

During the 1830s, there were limited attempts to amend the Constitution for internal improvements, but all of these efforts came to naught. In 1847, President Polk would again

veto an internal improvements bill. This is the veto Representative Lincoln had objected to. After this veto, the whole constitutional question seems to have disappeared and was subsumed by larger issues. There was a growing sense that the Commerce Clause provided implied powers that allowed for internal improvements.

Internal Improvements Proceed Anyway

As historians have pointed out, the constitutional arguments about internal improvements were often overshadowed by other arguments between and among the states; though it can be argued that the constitutional arguments provided cover for many of these differences.[7] For example, there were fierce rivalries among the states and regions over the routes a road or canal (and later railroad) might follow and the competitive advantage that might ensue from this decision. The net effect of this rivalry was often a cancelation of the proposed project. Also, states' rights issues were of paramount importance during the period. In the pre–Civil War era, Southern states were reluctant to give Northern states any advantage by virtue of federal policy and vice versa.

While the federal government largely stayed out of the infrastructure-creation business, the states took the preeminent role. Some of the singularly most notable transportation projects in U.S. history came about in the pre–Civil War years, often with state aid. The Erie Canal, also known as "Clinton's ditch" or "Clinton's folly" was paid for entirely with state and private funds. It was begun in 1817, completed in 1825, and was a marvel of engineering in its day. For a generation, it was hugely successful. It changed transportation and trade patterns in the Great Lakes region and in the Northeast, and in so doing allowed New York City to become the nation's preeminent port. Other states and investors would try to emulate the Erie Canal model, but often their projects either failed to live up to expectations or were completed just in time to be overtaken by a new form of transportation—the railroad.

The early 19th century is known as the first Turnpike era. Turnpikes abounded in the states.[8] Some states took an active role in their development, providing funds, charters (in many cases a grant of local monopoly), and other assistance. In many cases, the turnpikes were public/private partnerships. The turnpikes were of varying quality in construction and had mixed success financially. Many were important avenues of commerce, but again their role would be overtaken by the railroad.

During the same period, maritime transportation began to grow rapidly with the introduction of steam power. In this case, the federal government played a more active role, providing aid for navigation improvements beginning in 1809 and subsequently providing direct assistance for river and harbor improvements. (Initially, this was mostly for obstacle removal.)[9] As time passed, the U.S. Army Corp of Engineers would become an important player in the provision of waterway navigation, a role that continues today.

The United States of the early 19th century may have been short of cash, but it was rich in land. Most of the unoccupied land was in the new states west of the Appalachians and in the

new territories created by the Louisiana Purchase and later national expansions. In the view of the era, this land was nonproductive; it was a wasted, almost worthless asset that could only become productive if it was settled and converted to some economic purpose. As states were formed, they were routinely allowed to reserve a portion of the proceeds from the sale of public land for internal improvements. In the case of Ohio, this was set at one-twentieth of the net proceeds. Subsequently, newly formed states received similar or, in some cases, larger grants. The funds could be used to construct roads, canals, schools, and later railroads.

Gibbons v. Ogden, 1824

In this ruling, the Supreme Court affirmed the right of a steamship line licensed under federal regulations to engage in interstate commerce despite state laws that sought to reserve such trade for vessels owned and operated in the state. In brief, the state of New York had given Robert Livingston and Robert Fulton exclusive rights to operate steamships between New York City and New Jersey. Livingston and Fulton assigned these rights to Aaron Ogden, who began operating on the approved routes. Thomas Gibbons, whose vessels were registered under U.S. laws, sought to enter this service. Initially, New York courts would prevent Gibbons from operating in these markets. On appeal to the Supreme Court, Chief Justice John Marshall's Court would find for Gibbons. In a fairly broad ruling, the Court would find that the Commerce Clause prohibited state regulation of interstate trade, which could only be regulated by Congress. States could still regulate intrastate activities.

This ruling is of immense importance in understanding the development of our national transportation system subsequent to 1824. The ruling made the development of coastwise and river maritime trade, and later interstate railroads, much easier by allowing for national—rather than state-by-state—regulation. It also went a long way toward settling the aforementioned constitutional questions about assistance for internal improvements. By 1874, a select congressional committee would have the following to say on the issue:

> Congress may, in its discretion and under its responsibility to the people, prescribe the rules and regulations by which the instruments, vehicles, and agencies employed in transporting persons or commodities from one state into or through another shall be governed, whether such transportation be by land or by water. …
>
> [T]he power "to regulate commerce" includes the power to aid and facilitate it by the employment of such means as may be appropriate and plainly adapted to that end; and hence Congress may, in its discretion improve, or create, channels of commerce on land, or by water.[10]

Land Grants and Railroads

Congress would expand its use of land grants beginning in the 1820s. Many of the initial land grants were for canals. Notable was an 1822 land grant to Illinois for a canal connecting the Illinois River and Lake Michigan. There would be additional grants in the years ahead for other canals. During the mid-1800s, just short of seven million acres of land would be granted for river and canal building and improvements.[11]

The railroad would change everything. The Baltimore & Ohio would in short order supersede both the Cumberland Road and the Chesapeake & Ohio Canal as avenues of commerce. The experience elsewhere was similar. For example, the Erie Canal would also suffer a reversal of fortune as a result of railroad expansion. Initially, railroads did not develop as a system; rather, they simply ran from place to place. Although there was some public involvement in the development of Eastern railroads, they were mostly privately financed. During the mid-1800s, total railroad mileage increased dramatically. By the start of the Civil War, much of the nation, especially in the North, would have access to rail service. Over time, railroads merged, acquired each other, extended their routes, and an actual system began to emerge.

Land grants would play an important role in the further development of the rail system after the 1850s. The first major railroad grant was for the construction of the Illinois Central Railroad in 1850. In this instance, the grant was given to the states, who then conveyed the land to the railroad. Planning had begun for several transcontinental railroad routes in the mid-1850s to be funded by land grants and other federal assistance. Legislation that would have begun the intercontinental routes was introduced in Congress in 1856 but went nowhere, in part because of disputes between Northern and Southern states about the route to be constructed first.

In 1862, Congress and President Lincoln, partly because they were freed of the need to negotiate with Southern states, enacted the Pacific Railroad Act of 1862. This and subsequent legislation provided grants directly to the railroad companies constructing the intercontinental routes. The federal government would also issue revenue bonds to pay for initial construction. The land grants were massive by any measure. Each railroad company was given a 200-foot right-of-way on either side of its line. In addition, the railroad company was provided with ten square miles of land for every mile of line constructed (with some exceptions). Land was provided in a checkerboard pattern interspersed with public land up to ten miles on either side of the line. Three transcontinental routes would be built and other land grants would be provided. Construction did not begin in earnest until after the end of the Civil War with the first route completed at Promontory, Utah, in 1869. After 1871, the land grant program ended due to rising public sentiment against the railroads and concerns about abuses by the railroad companies. In the end, the federal grants alone would total over 131 million acres.[12] In return for the grants, the federal government did receive some compensation, specifically reduced freight and passenger rates for

government travel, and priority over civilian traffic in times of emergency. The government freight rates would remain in place until just after the end of World War II.

The land grants accomplished their goal. The interior West was settled rapidly. The railroads, however, had their problems. Several railroads of the era went in and out of bankruptcy during the several financial crises of the late 1800s. The Western railroads in particular became very unpopular with the public in general and agricultural interests in particular. These railroads had at least local monopolies—if not larger ones—and they took advantage of this situation by charging transport rates that many viewed as ruinous. The Granger movement sought to rein in the economic power of the railroads and convinced several Midwestern and Western state governments to pass laws governing railroad economic activities. In the end, these state laws would be found unconstitutional. The result was a push for national action to regulate railroad activities, especially freight rates.

Interstate Commerce Act of 1887

The Interstate Commerce Act began almost a century of regulation that would eventually expand from railroads to trucking, airlines, and water carriers. The 1887 Act was a response to a widely viewed abuse of market power by the railroad industry. The Interstate Commerce Commission (ICC) created by the Act would grow in importance over time, becoming one of the most powerful federal agencies of its day. At the outset, the ICC was interested in ensuring that railroads charged just and reasonable rates, did not engage in price fixing, and did not provide rebates to favored customers. Regulation as it was implemented would be premised on the concept that railroads were "public utilities" and needed to be regulated as such. Over time, regulation would expand. Railroads, for example, would eventually be unable to build new lines and, would later abandon unprofitable lines without ICC permission.

The vast issue of regulation—especially as it expanded to other modes of transportation, primarily in the 1930s—could prompt an entire paper in and of itself. But the issue should not be ignored here. Regulation put constraints on the growth of commerce in almost all interstate settings. As such, it had a significant, if not always visible, impact on infrastructure requirements for all modes of transportation.

Evolution in the 20th Century

The rate of technological change increased quite dramatically in the last years of the 19th century and the first years of the 20th century. Electricity, the telephone, indoor plumbing, etc. all became more common during this period. Before the 19th century ended, horseless carriages began to appear on the nation's streets. As the new century began, flying machines also began to appear. The implications of these trends for transportation infrastructure would be enormous.

Change was also occurring in urban areas. Horse-drawn streetcars were being replaced by either steam railroads or electrified streetcars, with the later proliferating rapidly in U.S. cities. So-called interurban lines were also growing in number outside city boundaries creating the first streetcar suburbs. Several U.S. cities—Boston and New York, among others—began construction of subway systems. Over time, all of these changes in urban transportation would begin to have a major effect on development patterns in urban areas.

As long as rail dominated, most of the nation's nonurban infrastructure needs would be met by the private sector. Roads outside of urban areas were pretty much neglected. This, obviously, would change. An early impetus for change came from bicyclists. The "safety bicycle" spawned a bicycling boom in the 1880s and 1890s, and the League of American Wheelmen, hoping to encourage further growth and safety, began the Good Roads movement. This movement would be joined in time by motorists and others, eventually including even railroads, which supported an improved road system.

Since most roads were under local control at this time, the early focus of the Good Roads movement was on local government. Local governments, however, frequently lacked the financial wherewithal and/or the technical skills required to improve the road system in a meaningful way. Over a short period of time, the focus of the Good Roads movement shifted to state governments.

There is a lot of interesting history about how states got into the highway-building business in earnest, but that is not the topic at hand. Bruce Seely and other historians have written extensively on this subject with a focus on how the state-highway efforts and the federal efforts of the time eventually led to the establishment of the federal-state partnership in highway construction and management that endures to this day. References to these works can be found in this paper's endnotes and bibliography.[13]

Renewed Federal Interest in Roads

Responding to calls from at least some states and interest groups, Congress began considering highway legislation early in the 20th century. Congress would provide federal aid for road building for the first time—part of the Post Office Appropriations Act of 1913—in the modest sum of $500,000. This money was to be made available to all states by the Department of Agriculture and to be "expended in cooperation with the Postmaster General in improving the conditions of roads … over which rural delivery is or may hereafter be established."[14] This amounted to just slightly more than $10,000 per state and had to be matched by $20,000 in state/local spending. There were few takers for this aid for a number of reasons, not the least of which was a provision in the bill requiring that states adopt an eight-hour workday if they took the money.[15]

This legislation, while a failure in many respects, did start the conversation about what a federal highway assistance program should look like. "The Act was most effective in spurring interest in defining a federal-aid program that would be acceptable to both federal and state governments. To accomplish this, future legislation had to provide for greater financial incentives and program flexibility to encourage broader participation by the States."[16]

The Federal-Aid Road Act of 1916 addressed many of the failures of the 1913 Act, and, as standalone legislation wholly devoted to roads, it is often viewed as the starting point for the modern federal-aid highway program. The actual funding it provided remained quite modest. The 1916 Act was justified on several grounds, but the one that seems to have resonated the most at the time was the argument that the federal government had to step in to help create roads in rural America. This was primarily because rural areas lacked the tax base to fund roads themselves, and, as a general rule, urban areas in states were unwilling to directly subsidize rural roads.[17] The matching ratio for federal aid was changed to 50/50. Notably, the Act gave the Bureau of Public Roads (BPR) oversight authority over state highway construction and maintenance using federal funds but, subject to approval of the specific project, did not dictate where or how a state could spend its aid money. In the view of some, this oversight authority was at least as important to the future of the federal-aid highway system as the funding the Act provided,[18] because it created an opportunity for BPR and its engineers to provide technical leadership in the development of highway construction, maintenance, and safety practices.

The United States and its allies may have won World War I, but the view at the time was that this was largely in spite of the nation's demonstrated infrastructure problems. The war highlighted the inadequacies of the rail system for moving massive quantities of wartime troops and freight. As a result, the economy had to develop work-arounds. Newly built trucks, for example, had to be driven from Midwest factories to Eastern ports over poor roads, because the rail system could not handle the shipments.[19] The railroads and some barge lines would be temporarily nationalized during the war. This may or may not have helped improve wartime transportation movements. There was a general consensus after

the war, however, that it was harmful for the railroads over the long term. The brief nationalization would leave the railroads with worn out equipment, and wartime imposed operating and labor regulations that would remain in place for decades. During the war, Congress appropriated increased funding for highway construction above the 1916 Act's authorized levels, but the physical results of this funding were well below expectations due to a host of labor and material shortages, among other reasons.

The postwar Federal Highway Act of 1921 further solidified the federal role in creating a national highway system. In part, it did this by requiring the designation of a federal-aid highway system—consisting of primary and secondary roads (also known as farm-to-market roads)—that was not to exceed 7 percent of the roads in any state. The primary roads were the busiest routes, often carrying the most significant interstate traffic volumes. The secondary system primarily linked rural America to the national system. All federal-aid funds had to be expended on the federal-aid routes. The Act also created the first formula for the distribution of highway monies to the states based on elements such as state population, land area, and mileage of postal roads. The 1921 Act left matching ratios at 50/50 except that it allowed states with large amounts of public land a higher federal match, up to 60 percent in some cases. The Act also required that states dedicate at least 40 percent of their federal-aid funds to the secondary system.

The Depression Changes Everything—at Least for Awhile

The federal-aid highway program continued to grow modestly in the 1920s but, again, more in terms of influence than money. The crash of '29, however, put a stop to growth in almost every sector of the economy. President Herbert Hoover would adopt public-works spending as a part of his effort to provide jobs and get the economy moving again. The Reconstruction Finance Corporation established on Hoover's watch would build major dams, including the one now named after him, as well as roads. But the overall effect of this effort on the economy was insufficient to stem the bad economic tide.

At the beginning of his administration, President Franklin Roosevelt would support the adoption of a wide range of public works efforts as a way to put the unemployed back to work and create meaningful infrastructure at the same time. There was a veritable alphabet soup of agencies created during Roosevelt's first term. Notable among these were the Civilian Conservation Corp. (CCC), which focused on construction projects of all types on public lands (e.g., national parks), and, slightly later in the term, the Works Progress Administration (WPA), which was larger and had a much broader mandate. From its creation in 1935 until its demise in 1943, the WPA built schools, sewers, stadiums, etc. almost everywhere in the United States. Transportation projects, a large focus of WPA activity, included 280,000 miles of paved or repaved highways; 29,000 new bridges; and 150 new airports, with 280 miles of runway.[20]

The WPA primarily provided wages for workers who were to be placed in jobs for which they were qualified. States, local governments, and other project sponsors often provided the materials needed for a qualifying project. WPA funds were distributed to the states on the basis of perceived need (e.g., those places with the most unemployment were supposed to get proportionally more money). In retrospect, it is clear that politics played a role in the distribution process. Another factor in the project-selection decision was the speed with which the work on a project could be undertaken. Hence, a project "ready to go" in today's parlance was supposed to be funded first. Projects capable of using unskilled laborers, who made up a very high proportion of the unemployed, also were supposed to get priority over projects using skilled labor. Transportation infrastructure projects were viewed very favorably in the selection process and were granted priority over other types of projects, because they could use a lot of unskilled workers.

WPA transportation work was not based on any national- or regional-planning process. Most projects accommodated local needs. Some of these local needs, like the Golden Gate Bridge, are nonetheless important parts of today's national system. The effects of this spending are still around today as vital components of the U.S. transportation infrastructure system. Most people view the WPA and Depression-era federal spending on infrastructure as massive, which is true, but only when examined in the context of the time.

> Yet, spending on public works did not increase as dramatically as one might think during the 1930s. Historian Roger Daniels notes that total public-works spending between 1933 and 1940 rose by 24 percent over the previous nine years. What changed momentously (but temporarily) was the federal share, which soared while local expenditures plummeted. State and local governments spent $2.4 billion in 1930, but only $700 million in 1933. Federal spending, however, jumped from $250 million annually during the late 1920s to an average of $1.6 billion per year (1932–38) accounting for two-thirds of total outlay.[21]

In the late 1930s, Congress and the administration began thinking about cross-country roads and how to fund them.[22] The outcome of this exercise was publication of a landmark study, *Toll Roads and Free Roads*, in 1939 by BPR. The study laid out a rationale for an interstate highway system and discussed how to pay for it. It also specifically addressed the concept of toll roads, which were being considered at this point by several states. BPR was not a supporter of tolls, believing that they could support highway construction only in limited circumstances and that they could distort travel patterns, among other concerns.

World War II would interrupt this planning exercise but not end it. The Federal-Aid Highway Act of 1944 included an authorization for a 40,000-mile interstate system but did not provide a means to pay for it. At this point, the actual system was a proposed map from which actual routes would later emerge. The 1944 Act significantly increased federal funding for roads, partly due to concerns that a recession might follow the end of the war and that the economy might require some continued federal economic stimulus. Nonetheless, the interstate system would remain a draft plan for some time. It would be over a decade

before it became a reality, and even this only happened when a president decided to energize the process.

Post–World War II Highway Policy

When the first federal-aid highway program was created, the goal was to get out of the mud. By the end of World War II, that goal had been largely achieved. The postwar highway system, however, was not able to handle the pent-up demand for automobiles and personal travel that followed the rationing and sacrifice of the war years. "In the 4 years from 1947 to 1950 registrations of privately owned vehicles increased by 11.2 million units—to a total of 48.60 million. Annual vehicle miles of travel by passenger automobiles increased by 21 percent and by trucks 31 percent."[23] These dramatic increases continued into the early 1950s. At the same time, suburbanization engendered by postwar housing construction was underway. The road system, however, was not expanding at anywhere near the same rate. In large urban areas, especially, highway congestion was the rule. There was a well-identified demand for better roads that permeated all levels of government, but there was not uniform agreement on how to provide better infrastructure.

Part of this lack of consensus was related to the federal/state separation of powers. Highways were for the most part viewed as a state and local problem. This despite the existing federal-aid highway program. As one 1950 observer put it: "It is a little remarkable that with the constant development of Federal authority throughout the century and a half of our national life that little emphasis has ever been laid upon this grant of power with reference to 'post roads.'"[24] The observer in this instance goes on to respond to his own missive by remarking, "In most states traffic census will reveal that from 80 to 90 percent of traffic on the highway is local, and it would seem reasonable therefore that the Federal government continue to respect, as much as practical, the states' autonomy in all matters relating to highway construction and policing."[25]

There was in fact a very strong belief during this pre-interstate period that highways and the taxes levied on users needed to be under state control. So strong was this belief that even a year after passage of the 1956 Act, the director of the National Highway Users Conference still espoused the role of states as preeminent: "To begin with, the majority of highway users believe strongly in the states having primary authority for their own roads. Traditionally, they have believed, too, in the states having the primary obligation for *financing* [emphasis added] their roads. It follows that most highway users would prefer that the right to impose taxes on highway users as a group should be reserved for the states."[26]

In keeping with this view, in 1952, the National Governors' Conference called for an end to the federal excise tax on motor fuels—which had been established initially to fund Depression-era programs and later raised to help pay for World War II—believing that this form of taxation should be reserved for the states.

The late 1940s and early 1950s are known as the Second Turnpike Road Era (referred to by some as the Second Toll Road Era). Several pre–World War II toll roads, such as the Pennsylvania Turnpike, were operating quite successfully. These public-authority, bond-financed, limited-access freeways were heavily used and generally admired by drivers as a reasonable alternative to congestion on public roads. The success of these toll roads was of particular interest to states that lacked the financial wherewithal in their general budgets to produce comparable public roads. During this period, at least 24 states had created toll road authorities; although several had yet to actually construct anything: "By the end of 1954, these authorities had 1,382 miles of toll roads under construction … and they were making plans for 3,314 additional miles." Although popular and growing in number, not everyone believed toll roads were the answer to the nation's transportation problems. One state public-works official, for example, lamented that "the proliferation of toll roads would stifle free transportation and injure the national welfare."[27]

This view was shared in part by the BPR, then a part of the Department of Commerce. As mentioned previously, BPR exerted its influence on the national highway system by requiring that certain design and other standards were applied to roads constructed with federal funds. The vast majority of roads, however, remained under state and local jurisdiction not subject to these specific standards. And toll roads, which were not at that time eligible to receive federal aid, also remained outside BPR's jurisdiction.

The Federal-Aid Highway Act of 1956

Although historians and highway enthusiasts know that the interstate highway system predates the 1956 Act and that it was not President Dwight D. Eisenhower's idea, there is a strong popular belief that the interstate era began with this piece of legislation. Although incorrect factually, this view is understandable, because the federal government, having created the interstate highway system in 1944, did little to actually construct it before President Eisenhower expounded his "grand plan" in 1954.

The president chose the annual Conference of State Governors on June 12, 1954, as the forum in which to announce his new initiative. Unfortunately, President Eisenhower was not able to make his presentation in person due to an illness in his family. In his stead, Vice President Richard Nixon gave the speech, calling for "a grand plan for a properly articulated system that solves the problems of speedy, safe, transcontinental travel."[28] To accomplish this goal, President Eisenhower proposed to spend $5 billion per year for ten years and at the same time continue to fund the existing federal-aid highway program. This was a somewhat expansive proposal at the time although it may not seem that way in light of today's federal-aid highway program ($43.2 billion in fiscal year 2009), but it should be noted that the total federal outlays for all purposes (defense, entitlements, domestic discretionary spending, etc.) in 1956 amounted to $70.5 billion.[29]

President Eisenhower was known to have strong views in favor of road building, and there was a general public clamor for more good roads. But this proposal was influenced by other

forces as well. The most important of these was a response to recessionary concerns in the period following the end of the Korean War. Many within the administration viewed the highway system as a potentially useful spending tool that could prime what was viewed as a weak national economy. This was not the first time in the history of the federal-aid highway program that its value for partially alleviating a recession would come into political play, and it would not be the last.

Two committees were formed to assist the president in filling in the details of his grand plan. The first was a group appointed by governors and was known as the Conference of State Governors' Special Highway Committee. More influential in forming the president's proposals was the President's Advisory Committee on a National Highway Program. General Lucius Clay was appointed to lead this advisory group and the committee would be known thereafter primarily as the "Clay Committee." It had only four other members, all well-known and all from the business community.

In late 1954, the Governor's Committee completed its report and recommended that the costs for the interstate system be borne by the federal government while funding for the existing portions of the federal-aid system continued to receive aid based on the existing 50/50 federal/state match. The committee calculated that this meant that overall federal-aid highway funding would be accomplished with about a 30 percent state contribution.

Early in 1955, the President Eisenhower forwarded his proposal to Congress. His proposal favored the ideas put forth by the Clay Committee. The proposal envisioned the creation of a Federal Highway Corporation that would sell $20 billion in 32-year bonds that would be financed by existing federal excise taxes on motor fuels and other items. Interest would be paid on the bonds.

Quite a bit has been written about how Congress reacted to the president's proposal. The short of it was that the corporation idea was a nonstarter. Congressional leadership was concerned that the administration's bonding proposal was an attempted end-run around the congressional budget process and would ultimately add to the national debt—dramatically run up since World War II—that Congress was trying to eliminate. When Congress reconvened in 1956, the administration dropped its objections to the use of a pay-as-you-go (PAYGO) funding mechanism and the legislation moved rather quickly from that point.

The 1956 Act contained several notable provisions. It created a new 41,000-mile system of limited-access freeways. Work on the road system was to be completed by 1969, and the federal share of financing would amount to almost $25 billion. While the 50/50 federal/state match would remain on all other roads, funding for the new interstates would be available on a 90/10 matching basis. (The federal share was increased in states with large amounts of public land, primarily in the West.) Although little noted today, the 1956 Act also significantly raised total available federal funding for all roads on the federal-aid system.

The Highway Trust Fund is Born

The longest lasting achievement of the 1956 Act, however, was the creation of a "temporary" trust fund to provide for interstate construction. The irony of its temporary status is of course not lost on any contemporary observer of highway policy who has seen the trust fund continuously reauthorized for over 55 years. The trust fund was and is linked to user fees. In 1956, existing federal fuel taxes were raised from 2 cents per gallon to 3 cents per gallon and the proceeds were deposited in the trust fund. Other excise taxes related to highways—tires, new truck purchases, etc.—were also designated to the fund. All user fees were authorized through fiscal year 1972. When the interstate system was completed, the trust fund was to be eliminated and all user fees were expected to revert to their previous levels.

From a budgetary standpoint, the intent was to pay for the interstates exclusively from the trust fund and not use Treasury general fund money. The 1956 Act marks the creation of the interstate system, but it also marks the beginning of a much greater federal presence in the highway field. As one observer at that time put it: "The recent act marks but another milestone, though an important one, in the transfer of highway responsibilities to the national government. Few future events are more easily forecast than more federal aid highway acts, enacted in Congressional years to come and continuing to alter the conditions under which highway development may be planned."[30]

Many observers of the time could not overlook the irony of what had just happened in Washington when the interstate highway program began in earnest.

> One of the best-publicized resolves of the administration that took office in 1953 was to redress the balance of Federal-State relations by divesting the National Government of such usurpations of State sovereignty as vocational education and aid to the dependent blind. While almost nothing has come of this endeavor, an important change in Federal-State relations has in fact taken place during the Eisenhower years. The Federal Government through the Federal-Aid Highway Act of 1956 has assumed the direction of highway construction—one of the few areas of significant activity in which the States still had the initiative after the New Deal.[31]

The author of this quote, Daniel Patrick Moynihan, would be no ordinary critic of federal highway policy. As a senator from New York, he became a primary architect of 1991 legislation that ended the interstate construction era and created an entirely new framework for federal highway policy.

The Interstate Construction Era: 1957–1969

The optimism at the start of interstate highway construction is perhaps best-captured by the BPR's Annual Report for fiscal year 1957:

> The attention of the public was caught and concentrated during the year on the concept of the Interstate System. Hearings were being held across the land to consider the detailed locations of routes planned to go through or bypass communities. Thousands of individuals were immediately affected as their property was purchased for right-of-way. Business, industry, local government officials, and plain citizens debated the values of bypasses versus through routes. They considered benefits of controlled access with respect to the elimination of congestion, the reduction in travel time, the greater comfort in travel, the savings in vehicle operation costs, and the improvement of adjacent property values through industrial and residential development. They learned that modern, planned access highways can cut the traffic death rate in half and the accident rate by two-thirds as compared with ordinary roads.[32]

It was not just BPR that was enthusiastic. The sense of optimism was very much shared by the majority of the driving public. Road builders, especially highway engineers, enjoyed popular and political support, and, as such, they were given wide latitude and authority to make decisions about where and how to build roads based almost solely on the premise that this would allow for the most efficient provision of new traffic-handling capacity. Although building was proceeding more slowly then hoped, drivers were nonetheless impressed with the new interstates and were supportive of their construction.

Contrast this positive view with a critical assessment, again from Senator Moynihan, just four years later:

> The *Wall Street Journal* does not commonly describe any undertaking of the Eisenhower Administration as "A vast program thrown together, imperfectly conceived and grossly mismanaged, and in due course, becoming a veritable playground for extravagance, waste, and corruption." It must, to the White House seem notably unkind for the *Journal* to speak thus of an enterprise the administration has declared "the biggest public works program ever undertaken anywhere or at any time throughout the world."[33]

During the late 1950s and well into the 1960s, the interstate highway program and the larger federal-aid highway program proceeded on essentially two parallel tracks. On the first track, construction continued, albeit at a rate slower than expected, and Congress continued to provide pubic and financial support for this effort. On the second track, discontent with the interstate construction program, and with the highway bureaucracy and lobby, grew slowly but surely. By the end of the 1960s, new influences would begin to change the

program and set the stage for an evolution in thinking about highways in a national context that continues today.

Just two years after passage of the 1956 Act, a new interstate cost estimate indicated that the total cost of the interstate system would be in the neighborhood of $41 billion, or 40 percent more than the original estimate. It was immediately clear that the revenue stream required to complete the interstate system was inadequate. To help make up the revenue shortfall the Eisenhower administration asked in 1959 that federal fuel taxes be raised by 1.5 cents on a "temporary" basis. After some debate Congress decided instead to raise taxes by only 1 cent, making the total tax 4 cents per gallon, in the Federal-Aid Highway Act of 1959, also on a "temporary" basis.

Although the increase took care of the immediate problem, funding continued to be an issue for subsequent administrations. In 1961, the Kennedy administration, while strongly supporting continued interstate system construction, sought to raise all of the excise taxes going into the trust fund, except the fuel taxes. The rationale behind this request was that most of these other taxes were being paid by larger vehicles, like trucks, which, according to some, were failing to pay their fair share of highway costs. Although Congress rejected this proposal, the so-called "cost-allocation" issue would continue to be a feature of the off-and-on debate about highway finance until fuel taxes on diesel were differentiated from gasoline in 1984.

Structurally, there were changes affecting the highway program throughout the 1960s that were not specifically related to the interstate highway system debate. Principal among these was the creation of the Department of Transportation (DOT)(Public Law 89-670) in 1966. The DOT Act in its statement of purpose declares that the DOT should "ensure the coordinated and effective administration of the transportation programs of the United States Government." BPR, soon to become the Federal Highway Administration (FHWA), lost some of the autonomy that it had enjoyed as part of the Department of Commerce, where a broad portfolio of often-unrelated subjects kept departmental oversight to a minimum. The DOT's mandate, to coordinate national transportation policy, could not help but conflict with the somewhat insular view of highway interests that were the preeminent component of the national transportation system.

The Intermodal Experience in the Postwar Period

Briefly, it is important to recognize that the interstate system was not created in a vacuum. The existing national transportation system was changing at the same time. At the end of the World War II, some parts of the nation's transportation system were, for lack of a better word, tired. War-related transport of troops and materials had strained the highway system, the waterway system, and especially the railroad system. In each instance, maintenance was delayed or forgone for lack of materials, time, or in some cases labor.

When the war ended, there was a great deal of pent-up demand in the economy for improved transportation infrastructure of all types. Not every mode was up to the task of

meeting this demand. Railroads, facing new competition for passengers and freight from an expanding fleet of new autos and trucks as well as a growing airline industry, began to lose traffic. Saddled with old equipment, difficult work rules, and a number of other problems, they seemed to be incapable of meeting these new challenges. In retrospect, ICC regulations precluding route abandonments without lengthy administrative processes and the ICC's regulation of other industry practices would play an important role in the industry's decline.

Jumping ahead, by the 1960s, railroads had lost their role as the major transporter of intercity passenger transportation. The interstate system would be a final nail in this coffin. By the mid-1970s, railroads were failing throughout the nation—but especially in the East. The ill-advised Penn Central merger of the 1960s would in 1970 become the largest bankruptcy in U.S. history up to that point. Rail service in the Northeast would be thrown into near chaos and the federal government would have to step in and consolidate all the failed railroads of the region into a new entity, Conrail. At the same time, the federal government tried to save the intercity rail industry by consolidating all intercity rail service into Amtrak. Where Conrail would, after lots of structural change, become a profitable company the assets of which could be sold to other railroads, Amtrak has been muddled in politics and has never performed up to original expectations.

Urban transportation systems, which carried record traffic in the war years, would also experience major changes in the postwar period. Again, the automobile, the concomitant growth of the suburbs, and other structural changes in the economy would move passengers away from transit. Many transit systems began to experience economic problems in the 1950s. Unable to make a profit through the fare box, transit systems would forego maintenance and capital investment, which exacerbated their problems. By the 1960s, a transit crisis would emerge and the federal government would step in to try to help stop the bleeding.

New Surface Transportation Programs Begin to Emerge

The Highway Beautification Act of 1965 and the Highway Safety Act of 1966 both showed that congressional interest in highways was beginning to diverge from a pure construction focus and that the whole issue of what constituted federal highway policy was about to become more complicated. Also in 1965, legislation created the Appalachian Highway Program as a standalone program outside the highway trust fund. The program was designed to provide access to the impoverished Appalachian region.

Highway Building Under Attack

On that other parallel track, public support for interstate highway construction was beginning to wane. There were several reasons for this. As early as 1957, it became clear that some of those charged with building the interstate system were also interested in using their positions for personal gain. In Indiana, for example, state highway officials were charged with having quietly bought property along proposed interstate routes, the exact routes of which were at that point known only to them, and then sold the parcels back to the government for significant individual profits. This scandal and other questionable deals and allegations of kickbacks in other states provided for considerable negative press coverage. Concerns about illegal and unethical practices would lead to a congressional investigation that placed a cloud over the program.

Another issue heavily debated in the late 1950s, and one of particular interest to future Senator Moynihan, was whether or not to complete construction of many of the urban portions of the interstate system. Although Congress would eventually choose not to interfere with construction, the subject would be heavily debated. Opponents of the urban interstates contended that the routes were ripping apart the fabric of cities and creating the equivalent of walls between historically connected communities. It was also contended that the roads were a major factor in the ongoing decline of transit services.

Some historians refer to the period from 1956 into the 1960s as one in which highway engineers were the principal policy makers. Traffic engineers during the period were viewed as something of a professional elite, whose knowledge and professionalism allowed them to dominate where and how roads were built on the basis of moving traffic. Because of their public acceptance as leaders above reproach, they could transcend political and other influences. As scandals continued, more people became concerned about the environmental impacts of highway building, and other issues unfavorable to highway building emerged. The primacy of this professional elite underwent a transition.

> In that sense, the Federal-Aid Highway Act of 1956 represented the triumph of the idea of apolitical expertise. In short, construction of the Interstate system offered a political and technical fix for leaders of the nation's state highway departments.34

But it did not work that way. During the period from 1957 to 1965, road builders began construction of mileage long-delayed by shortages of funds and the high costs of materials and rights-of-way. After 1965, if not before, opposition appeared in many states in the form of environmental advocates as well as among proponents of multimodal transport networks. Still others wished to save their neighborhoods or homes from destruction. At the same time, political and business leaders continued to seek new routes that would promote economic development, as opposed to traffic service, which was the premier goal of state highway engineers. "In the end, as these historians point out, decisions about highways would once again revert to the domain of politics, and highway programs would no longer be run exclusively by engineers."[35]

The other issue that was nipping at the road builders' heels was growing concern for the environment. The 1960s represented an environmental awakening that culminated in two important pieces of legislation at the end of the decade, the National Environmental Policy Act (NEPA) of 1969 and the Clean Air Amendments of 1970. The NEPA provisions had an immediate impact on highway programs as new highway projects, like all federal projects over a certain dollar amount, were required to prepare environmental impact statements. The Clean Air Amendments, although directed at improving air quality primarily by requiring emission standards for new automobiles, had at least a somewhat positive effect on highway construction. Automobiles of that era became less fuel efficient, even with emissions equipment added. This actually increased trust fund revenue for a period.[36]

Problems aside, the interstates continued to be built. Throughout the late 1950s and through the 1960s, Congress and presidents routinely, if somewhat unhappily, continued to extend the deadline for completion of the system and the trust fund. The interstate cost estimate by 1968 was for $56.5 billion with completion in 1974. In that same year, the interstate system would be expanded by 1,500 miles at an additional cost of $8 billion. Also during the 1960s, the rest of the federal-aid system continued to receive additional funding with the non-interstate portion reaching a level of $1 billion per year mid-decade.

Transit and Safety Become Separate Federal Programs

During the 1960s, mass transit became a recipient of federal assistance. As mentioned earlier, transit systems in many cities were in dire financial straits at this point. Cities, as a result, were lobbying vigorously for some sort of federal aid. Beginning in 1961, transit became eligible for federal assistance, which started modestly with a relatively small grant of $25 million and access to $50 million in low interest loans. Interestingly, the first transit aid package was part of the Housing Act of 1961. By 1964, Congress was willing to greatly expand its contribution to transit systems and to provide greater capital assistance to the industry. The Urban Mass Transportation Act of 1964, which is viewed as the transit equivalent of the 1956 Federal-Aid Highway Act, provided the industry with $375 million over three years. Aid was provided directly to transit operators in the form of grants and loans. By the end of the decade, the federal commitment to transit was considerably larger and transit proponents were beginning to insist that they were part of the balanced transportation system envisioned by the creation of the Department of Transportation. As a result, they sought—if not equality with highway programs—the financial certainty that highways enjoyed as a result of the highway trust fund.

Representative George Fallon said the 1970 Federal-Aid Highway Act was "without a doubt the most significant piece of highway legislation to come before Congress since the 1956 Highway Act creating the Interstate System." The 1970 Act was many things. Perhaps most prominently it was the beginning of a trend that would over time continue to broaden the list of activities for which highway trust fund money could be spent. For example,

dedicated bus lanes could be built as part of a highway project and other related transit improvements also became allowable uses of highway funds. Additionally, the Act created a significant new highway program, the Urban System; a minimum interstate-highway funding apportionment guarantee for each state, a precursor to the modern donor-state/donee-state debate about guaranteeing a certain level of return of highway funds from the trust fund to each state; and a new agency, the National Highway Traffic Safety Administration (NHTSA), which would receive two-thirds of its funding from the highway trust fund.

Surprisingly, there was concern that federal spending would drop dramatically in the years ahead as interstate highway construction slowed down. To compensate for this change, and to allow states to expedite non-interstate projects in the future, the Act provided that the federal/state match for non-interstate projects would change from its existing 50/50 ratio and become a 70 percent federal and 30 percent state/local match beginning in 1974.

This increase in matching fund rates was also in line with the Nixon administration's revenue-sharing initiatives. Although never adopted, the Nixon administration proposed "Special Transportation Revenue Sharing" in 1971. Under this proposal, all the revenue from the highway, airport, and airway trust funds would have been pooled and redistributed to state and local governments to spend on transportation activities as they saw fit. (The initiative apparently excluded interstate highways.)[37] What would be adopted piecemeal throughout the 1970s, however, was the idea that states be given greater flexibility to transfer money between highway programs and to other modes of surface transportation.

Equal Status for Non-Highway Programs

There were several more highway acts in the 1970s: 1973 and 1974 (both of which were Amendments) and 1976. The decade ended, however, with the Surface Transportation Assistance Act of 1978, which could be construed as giving transit, safety, and research almost equal status with highways legislatively if not fiscally. The Highway Act was Title I of that legislation and still counted as the largest portion of the Act by far.

Looking at the 1970s, it could be said that several trends emerged or gained steam, all of which would have a major impact on federal transportation programs. These included the continuing and growing linkage between highway and transit policy; a new interest in providing funds for maintaining roads and other transportation infrastructure, as opposed to just funding their construction; a willingness to add mandates to transportation legislation (also in some cases known as sanctions, or crossover sanctions); and a complete shift in the center of political support for highways from the executive to the legislative branch.

Two changes to the federal highway program greatly benefitted transit and redefined the final structure of the urban portion of the interstate system in many cities. First, states were allowed to transfer Urban System highway funds to transit activities. Notably, states that decided not to build a portion of an interstate could obtain the same amount of federal aid as they would have gotten for the highway segment and use it for transit capital projects

instead. These so-called "interstate transfer provisions" became very popular in some parts of the country. The transfer was structured in such a way that the highway trust fund was unaffected by these changes, because the money provided to the states for the transferred projects came from Treasury general funds.

Another trend in the 1970s came from the realization that some parts of the interstate system were already aging and in need of repair. In the 1976 Act, Congress would create the 3R program (resurfacing, restoring, and rehabilitating). In 1978, Congress would make the program permanent and extend it to other classes of roads with a 75/25 federal/state match. Notwithstanding these changes and the federal dollar commitments provided to maintenance programs, the issue of highway maintenance continued to attract public attention and would play a role in framing the highway program for the next three decades as new legislation consistently expanded the ability of states to use federal highway dollars to maintain and later upgrade (reconstruction was added in 1981) all manner of federal-aid-eligible infrastructure improvements.

The Highway Beautification Act of 1965 is viewed as the federal government's first major attempt to regulate activity that actually took place outside of the highway right-of-way. At the time, the beautification program required that states control billboards near major highways or face the potential loss of up to 10 percent of their annual highway funding. In turn, federal aid was to be provided to assist in billboard removal. The Act never lived up to the expectations of its authors for a number of reasons too numerous to explain here. But it did set a standard: that federal transportation programs could be used to promote activities that were only partially linked to the provision of infrastructure, if at all.[38] In the 1970s, mandates would no longer require separate legislation; instead, they would become just a provision within surface transportation legislation. A case in point was the addition of "Buy America" provisions in the 1978 Act, which required that certain materials and equipment purchased as part of the federal surface transportation assistance program be either wholly produced in the United States or contain a designated percentage of content produced in the United States. This trend would pick up steam in the 1980s and has been a regular feature of subsequent surface transportation legislation through today.

All three presidents in the 1970s—Richard Nixon, Gerald Ford, and Jimmy Carter—proposed major changes to the structure of the highway program and/or its funding mechanism. In the end, all would yield to Congresses uninterested in the proposed changes. (President Nixon's revenue-sharing proposal was addressed earlier and the effects of his administration's propensity to impound highway funds will be addressed below.)

Presidents Ford and Carter sought to make sea changes in the way the federal-aid program was financed. Each administration sought to redirect the existing fuel taxes in a somewhat similar manner. In their proposed initiatives, each reserved 1 cent of the fuel tax for the trust fund to pay for completion of the interstate system. And each would have diverted 2 cents from the trust fund and into the Treasury's general funds. The final 1 cent of tax would have been eliminated in any state that raised its taxes by the same amount and dedicated the proceeds to transportation purposes. One variation was that the Carter

administration would have continued to place all diesel tax revenue in the trust fund. Both administrations argued that with the interstates nearing completion, it was time to start thinking about a post-trust-fund era.

Carter and Ford believed, especially in light of the energy crises of the 1970s, that transportation should not have access to what they viewed as a private account. In their view, transportation, and especially highways, should compete for funding with all other types of federal spending, which at that point included transit, Amtrak, and other federal transportation activities lacking a dedicated revenue source. These proposals were primarily aimed at changing the decision-making process for transportation spending and allowing more executive branch input into how and where all spending would occur throughout the congressional budget. This change was viewed as being in line with budget process reforms that had been recently adopted by Congress. In each instance, Congress rejected these proposals and, in the end, passed larger, in dollar terms, highway and/or transportation bills than those requested by the two administrations.

President Nixon, on the other hand, sought to hold down domestic federal spending in the early 1970s, in part to leave funds available for the Vietnam War but also to deal with serious international and domestic financial problems. To control spending, President Nixon used the then-available power of impoundment. In simple terms, the executive branch would "impound" funds appropriated by Congress and simply not spend them. The power of impoundment had been around for a long time but was usually little used. The Nixon administration, however, used it extensively to hold down overall federal spending, and one of the administration's principal targets was highway funding. By 1974, Congress and President Nixon were prepared to make major changes in the way the budget operated. The Congressional Budget and Impoundment Control Act of that year put significant constraints on a president's ability to impound appropriated funds. It also set up a rigorous set of budget practices and created budget committees in each congressional body.

From the perspective of the highway program, these events had two important results. First, it obviously removed the threat of impoundment, meaning that appropriated funds were more likely to be spent. The second result, a technical change, would compel Congress to set a "limitation on obligations," also known as the "ob-limit," to control the spending of the "contract authority"—the money that constitutes the highway trust fund. During the next 30 years, the ob-limit and the power to set it would become two of the most contentious features of surface transportation legislation at the federal level.

National Transportation Policy Statements/Studies

During the 1970s and into the 1980s, the newly formed DOT engaged in several exercises designed to focus federal transportation policy on national goals. The result would be several national transportation policy studies and statements done in house or by federally appointed outside panels. As the list of national transportation studies displayed in Appendix

A shows, there were few reports prior to this era that could be characterized as being national in focus.

The first several of these documents are "statements on national transportation policy" by secretaries of transportation, beginning with Secretary John Volpe in 1971. His statement essentially reiterates the goals of the DOT Act and tries to put these in an organizational framework. Secretary William Coleman in his 1975 statement would enunciate several principles for national transportation policy. Notable from the perspective of this paper was a call for "more rational public and private financing" and "improved performance measures."[39] Two later studies would have some effect on policy: The national transportation policy study report and a report by the national council on public-works improvements would both influence legislation in some way.

Deregulation

Beginning in the late 1970s, the federal government began the process of getting out of economic regulation and other business practices of interstate transportation industries. From a government policy perspective, it is not a stretch to suggest that these actions had as much impact on U.S. transportation policy as any surface transportation act of the recent era, with the possible exception of the 1956 Act. Even more notably, deregulation is one of the few instances in the last 50 years in which policy reform trumped well-placed special interests that sought to retain the status quo.

The concept of public-utility regulation permeated the U.S. economy well into the 1950s, when academics and some government officials began to argue that regulation was not helping the economy but holding it back. Many regulated industries actually liked the certainty of regulation, as did their employees. Most airlines, for example, did not support deregulation.

President Ford and, significantly, President Carter would provide the push that made deregulation possible. This was done at the policy level in each administration, but, more importantly, it was done by appointing regulatory skeptics to positions of power within the government. The resulting Airline Deregulation Act of 1978 created a path to full deregulation by 1985 and led to major changes in airlines' competitive practices, which very much redefined the industry within a decade.

Airline deregulation was the impetus for further deregulation, leading to the Staggers Rail Act of 1980 and the Motor Carrier Act of the same year. Deregulation in the rail industry in particular would not be as immediate or as complete as it was in the airline industry. A path to deregulation, however, had begun and was followed by large-scale changes in both the motor-carrier industry and the rail industry.

New Money and New Ways to Spend It: The 1980s

There was a Highway Act in 1981, but in retrospect there wasn't very much notable about it. It was a placeholder, described at the time as interim legislation. More important, however, is the economic backdrop in which highway programs were being considered in 1981. Ronald Reagan had just become president. He was very much in favor of what was termed "new federalism," which took the position that the federal government was too big and had taken on too many tasks. President Reagan believed that the states were better equipped to deal with most problems and that responsibility for a wide range of federal programs should be turned over to the states. At the same time, the economy was suffering through a recession. Inflation was at double-digit rates. It was not, in the Reagan administration view, a time to be raising taxes, including fuel taxes, the stated goal of many highway and transit advocates at the time. The administration would propose legislation that—had it passed—would have moved the United States at least part of the way toward Reagan's new federalism.

Despite this federalist view, by the end of the next year, the Surface Transportation Assistance Act (STAA) of 1982, which dramatically increased federal surface transportation funding, had been enacted. After a 13-day filibuster in the Senate, the federal "user fees," on fuels had been raised by 5 cents and, even more surprisingly, one-ninth of the fuel tax was reserved for a new mass-transit account within the highway trust fund—all with President Reagan's support. In the words of one representative: "It is no longer a gasoline tax; it is a user fee. It is no longer a highway bill; it is an infrastructure improvement program. And no longer is it simply to build highways with a user fee, it is a jobs bill."[40]

Most articles of the time credit Secretary of Transportation Drew Lewis with changing the president's mind about transportation programs and working with certain members of Congress to write a bill acceptable to the administration. In reality, it was probably the recession and the need for jobs legislation that made the STAA possible. The other factor at work was a growing concern that the nation's highway and transit infrastructure was in bad shape.

Aside from a major influx of new money, the STAA required some significant policy changes, such as a major increase in funding for federal-aid system bridge replacement and rehabilitation. And it also imposed new mandates, most notably a provision that penalized states that did not raise the minimum drinking age to 21 years old by withholding certain federal-aid highway funds.

Two other features of the STAA would endure as policy milestones in the history of the program. Earmarks had been part of previous highway legislation, but they had never previously been given the status they would receive here. The STAA included ten "special" demonstration projects valued at $362 million. The donor/donee dispute that now is a central feature of any highway policy debate was first brought to focus in the STAA. When the highway program was created, the donor/donee concept was not part of the discussion per se.

By 1982, the interstates were almost complete and the issue became future spending, which, of course, would no longer be dominated by the interstates. Those states that felt that they had not gotten their fare share of benefit from the overall program began to demand a greater share as a condition for their continued support of the overall highway program. As a result, the STAA created an equity-adjustment mechanism, which assured that each state received total funding equivalent to not less than 85 percent of their contribution to the trust fund. This guarantee applied only to core highway programs, but it was enough of a change to satisfy the donor states at that time. This was not, as this paper has shown, the first equity adjustment to the program, but it was by far the most inclusive and set the stage for all of the really difficult donor/donee debates since.

In the mid-1980s, national policy was beginning to focus on a large and growing federal-debt level that had already exceeded $2 trillion. Although not a transportation act, the Deficit Reduction Act of 1984 had major implications for federal surface transportation policy. For example, the Act changed the set-aside for the mass-transit account to 1 cent of the fuel tax. The Act also changed the rate of diesel-fuel taxation to 15 cents per gallon, which for the first time differentiated fuel type in taxation and at the same time mostly terminated the debate about whether trucks were paying their fair share of highway construction and maintenance costs.

The successor legislation to the STAA, the Surface Transportation and Uniform Relocation Assistance Act (STURAA) of 1987 was a complicated bill politically, but for the most part it made few changes to either highway or transit programs. As has been the case in many a highway bill before or since, the debate was mostly about money. For budgetary reasons, the Reagan administration wanted less spending than many members of Congress and transportation industry leaders sought. The justification for spending more was primarily related to the so-called "infrastructure crisis." Congress would not complete its work before the existing program authorization expired. When it did pass a bill in the spring of 1987, President Reagan vetoed it for spending too much money in total and, especially, for including a new program consisting of 152 demonstration projects with a price tag of $1.4 billion. In high drama, by highway legislation standards, the Senate would override the veto by one vote despite a very unusual personal visit by the president just before the vote took place.

A few provisions of the STURAA should be noted. The donor/donee discussion continued, and, while the 85 percent minimum guarantee was retained, a new way to calculate it was adopted. A pilot toll program allowing seven toll projects off the interstate system with a modest federal-aid contribution was created. This was a small but significant departure from the general antithesis toward tolls in the federal-aid program.

The item that attracted the most attention, however, was the demonstration program. One observer at the time noted:

> The growth in demonstration project funds, and the enshrining of such projects as a "program," reduces any claims to be made for an interest in a rational and

> economically justifiable public decision processes. The more funds go to such projects, and not to programs, the more other Congressman will be forced to join the special interest rush. … The net effect is that the public thinks an $88 billion pork-barrel program was approved, and that the highway program is just one more Washington boondoggle. The program's credibility as an effectively managed, technically-driven program has been severely damaged.41

In the late 1980s the discussion of the infrastructure crisis continued. A report by the congressionally created National Council on Public Works Improvement, *Fragile Foundations: A Report on America's Public Works* issued in 1988, would detail a national system in need of investment. At the same time, the argument about the need for greater infrastructure investment moved into the academic arena. A school of thought arose that argued that the United States was losing its comparative advantage in world markets because of under investment in infrastructure of all types. In this view, Japan, Europe, and other regions stood to dominate world markets in the 21st century because of their willingness to make large-scale public investments in all types of infrastructure.[42] This viewpoint, not surprisingly, was immediately adopted by proponents of increased highway spending.

Not everyone agreed that the infrastructure crisis was real, however. Although fewer in number, and perhaps in influence over short-term highway policy, there were a number of individuals who found flaws with the arguments stated above. A principal criticism was that much of the data upon which these arguments were made was suspect. This was in large part because the definition of public infrastructure used by "crisis" advocates did not take into account all of the private sector's investment in physical infrastructure. Also at issue was the fact that the size and scale of the U.S. system was so dramatically different from those of America's competitors as to make certain comparisons less then equal.

Though now largely forgotten, there were a few independent voices calling for major changes in the structure of the federal surface transportation program. Notable among these was a study done in 1987 by the Advisory Commission on Intergovernmental Relations (ACIR) calling for devolution of at least some highway programs to the states. The ACIR report, *Devolving Selected Federal-Aid Highway Programs and Revenue Bases: A Critical Appraisal*, called for a three-step process that would, over time, lead to devolution of all highway programs, except the interstate program, to the states. According to ACIR, a turn back would result in "a better balance of authority and accountability in the federal system."[43] The views of ACIR and others calling for program reform would be largely ignored by Congress in the years ahead except during a brief call for devolution in the run-up to reauthorization in 1998.

Redirection: The TEA Years 1991–2003

The authors of at least three previous highway acts—1970, 1973, and 1982—each believed that they had written the most important piece of surface transportation legislation since 1956. In retrospect, all of these Acts would end up being less important than the Intermodal Surface Transportation Efficiency Act (ISTEA)(pronounced "ice tea") of 1991. By 1991, the interstate system was finally finished except for a few short, controversial, and expensive segments. The key element of almost 40 years of highway policy could no longer serve that role. And, in fact, there were many even in the highway community who thought its end had come none too soon.

The interstate highway system, rightly celebrated for its contribution to national productivity, also did much harm. Many critics have blamed it for speeding the decline of American cities, but few have recognized that generous federal subsidies for interstates also stifled the building of the smaller urban highways that could have eased the gridlock that afflicts cities today.[44]

ISTEA was an opportunity to rewrite the underlying structure of federal surface transportation policy. It was also an opportunity for many interest groups to present their case for having a role in national transportation policy formation. Perhaps no one had waited longer for a chance to change the direction of federal policy than Senator Daniel Patrick Moynihan. He was not solely responsible for the Act, both the House and the Bush administration would make major contributions, but his long standing policy goals permeated the final Act. Increased local control over transportation-construction decision making, a specific link to Clean Air legislation, greater flexibility between highway and transit programs, and many other features of the completed product of ISTEA were all ideas that he had advocated going back 30 years.

In 1990, President George H.W. Bush and Congress would agree to raise federal fuel taxes by 5 cents per gallon as part of the Omnibus Budget Reconciliation Act of 1990 (OBRA90). The justification for this action was deficit reduction. In a compromise, half of the increase went for deficit reduction and half was directed to the highway trust fund. Politically, President Bush had gone back on an earlier pledge of no new taxes. Many believe this tax increase would cost him dearly in his unsuccessful attempt at reelection.

From the perspective of a new highway bill, the increase to the trust fund meant that additional funds were available for programs and projects. Certain Members of the House, however, didn't think this was enough and would spend much of 1991 unsuccessfully seeking an additional 5 cents per gallon as part of the legislation they would propose.

Money aside, the debate on ISTEA revolved around a few key proposals. The Bush administration sought to more or less create a highway program with two basic elements. These were a new national highway system (NHS), which would include the interstate system as part of an up to 155,000-mile total system, and a new block grant program, which gave the states and localities considerable leeway on directing the remaining spending.

The Senate bill had a very different structure. Reflecting some of Senator Moynihan's main themes, most of the money in the highway program went into a surface transportation program that gave states and localities wide authority to spend broadly on either highway or transit projects. The role of urban areas was enhanced by giving metropolitan planning organizations (MPOs) considerable say in developing plans and approving spending within the urbanized area. The bill also created a new congestion-mitigation program, the focus of which was obviously to reduce congestion, but, just as important, it sought to reduce highway-related environmental problems.

The House bill was mostly notable for its support of the additional 5 cents in fuel taxes and the additional spending that the increase provided. Otherwise, the House simply retooled the framework of existing highway programs and adopted the administration's NHS proposal.

In the end, ISTEA contained an NHS program, an STP block-grant program, and a Congestion Mitigation and Air Quality (CMAQ) program while retaining separate Bridge and Interstate Maintenance programs. Matching fund levels for all but the interstate-maintenance program were changed to 80/20. The distribution of STP funds within states was to be determined by a complicated formula. Within the STP program were two set-asides of 10 percent each for highway safety and for a new category of projects to be known as "enhancements." The role of MPOs was strengthened and broader transferability of monies was created, though not to the extent proposed by the Senate. Finally, the Act contained 538 demonstration projects at a cost of $6.2 billion. President Bush had promised to veto a bill that contained large numbers of earmarks but changed his mind after final passage, primarily because ISTEA was ultimately seen as a jobs bill, as the nation was once again in a recessionary period.

ISTEA would also take another stab at dealing with the donor/donee dispute that had again almost kept a highway bill from final passage. The equity arrangement adopted by ISTEA was complicated to say the least. It contained five separate elements. Most important of these from a state perspective was a 90 percent minimum guarantee. Although viewed as a successful compromise at the time ISTEA was passed, these provisions proved somewhat unwieldy and it did not take long for some states to become unhappy with them.

With the addition of the CMAQ program, enhancements, greater transit funding, and a host of other features, the number of groups associated with supporting increased transportation spending rose significantly. In one view, the effect of this was pronounced:

> ISTEA also reflected the further disintegration of the highway lobby's policy monopoly that had dominated American surface transportation policy making so thoroughly during the construction of the interstate highway system. Although the highway lobby remained strong … several organizations that had previously been on the outside looking in moved to the forefront of the policy-making process.45

ISTEA Spending and the Federal Budget

ISTEA promised significant funding increases for both highways and transit. The Act's authors, in setting its annual authorization levels, had tried to remain within the budget caps necessary to comply with budget deficit-reduction legislation in force at the time. In reality, however, the appropriations process in the early 1990s routinely spent considerably less than the amounts authorized by the program.

ISTEA created the NHS program, which was to consist of the interstate highway system and a selected portion of the nation's principal urban and rural arterials. The system was limited to 155,000 miles. Selection of the actual routes that would be in the system was left to FHWA and the states. In some ways this process mimicked the system that had been used in the 1920s to define the original federal-aid highway system. This task was completed in 1993. Legislation adopting this system, the National Highway System Designation Act of 1995, came a little later. The Act could be viewed as a somewhat extensive technical correction to ISTEA with a few new elements. There were some notable provisions. It raised the allowable federal share on toll projects permitted by ISTEA to 80/20. It also took a stab at creating new mechanisms to finance transportation projects by creating a pilot State Infrastructure Bank Program. And, of course, the bill contained projects, many of which just redirected ISTEA project funds but in some cases were really new projects.

It is worth noting that many view the creation of the NHS as a missed opportunity. The view is that states were inconsistent in how they designated NHS routes. Instead of an expanded or follow-on interstate, many view the NHS routes that emerged to be more of a political system, where states chose to include a route not for its national significance, but because it served some state or local constituency.

On a parallel but unrelated policy track, the financial underpinnings of the trust fund went through some major changes in the mid-1990s. The net result of these changes was a 1993 increase in federal fuel taxes to their current level, again in part for deficit reduction. It would be 1997 before all of these taxes would become available for transportation purposes.

TEA-21 Emerges

The debate leading to the Transportation Equity Act for the 21st century (TEA-21) was about money and the distribution of money. All other issues would become ancillary. Most of 1997 was spent debating the size and distribution of the surface transportation program

and, more prominently, who within Congress—authorizers or appropriators—would control the actual spending. Policy issues were not a major issue in the debate.

A small group of members of Congress sought to explore the possibility of devolving control of most of the highway and transit program to the states. In their view, the federal program had become an overly complicated revenue-transfer mechanism that imposed considerable administrative and regulatory costs on transportation infrastructure construction and maintenance projects. As a result, they sought to reduce federal taxes destined for the trust fund and, instead, allow states to increase their rates of taxation. The concept received limited congressional consideration but did raise a number of issues about the overall direction of the federal program that are still pertinent today.

A proposal by a larger group of members, the STEP21 Coalition (Streamlined Transportation Efficiency Program for the 21st century), received somewhat more consideration of its goals. The STEP21 Coalition was primarily focused on the donor/donee issue and wanted a guaranteed 95 percent minimum rate of return on all highway programs. To help accommodate this idea, the Coalition also called for a simplification of the highway program into just two programs, an NHS program and a large block-grant program. Although some elements of the proposal would receive consideration in the House and the Senate, they did not become part of TEA-21.

In 1997, surface transportation reauthorization would again become part of the larger federal spending debate and much of the year would be spent arguing about how the congressional budget treated the highway trust fund. This question would not be resolved in that session of Congress. When consideration of reauthorization resumed in early 1998, the federal budget situation had begun to change. The federal government was, for the first time in many years, expecting a budget surplus. Supporters of more transportation spending jumped at this change of fortune and successfully convinced Congress that this was the time to dramatically increase spending. It would take several more months for TEA-21 to emerge, but when it did, it had created a link between the trust fund and spending, predicated almost entirely on revenue collections as opposed any other policy imperative.

TEA-21 increased overall spending for highways, transit, and a host of other surface transportation activities by 40 percent over the ISTEA level. Because of a revenue-distribution mechanism included in the Act, Revenue Aligned Budget Authority (RABA), it would actually provide for even more spending over the next six years. This was especially the case in fiscal year 2003, when Congress would ignore a RABA requirement to reduce spending for the year and increase it instead.

TEA-21 didn't end up taking the trust funds off budget, but it did make changes in congressional budgeting procedures that had a similar effect. The Act provided "guaranteed" spending levels for each year of the six-year authorization period. The intent was to preclude the budgeters' ability to run up the unexpended balance. By virtue of these provisions, the power to set annual spending levels moved from the appropriations

committees to the authorizing committees. This was a considerable shift in the congressional power structure and one that remains controversial.

TEA-21 negotiations stumbled over the donor/donee situation until the large increase in funding became available in 1998. With dramatically more funding available for all states, the donor states more or less decided to put off their demand for a 95 percent return until a future date. In conference, it was decided to set the minimum guarantee level at 90.5 percent.

TEA-21 did a number of things in addition to providing more money and it is worth taking note of some of them. The Act continued the exponential growth in high-priority projects, providing almost $9.4 billion for 1,849 separate projects. The Act gave the Appalachian Development Highway Program access to the highway trust fund. In addition, there was some expansion in the number of allowable uses to which the federal funds could be dedicated. Finally, spending flexibility between programs was also modestly increased.

The Last TEA, SAFETEA?

When President Bush signed the Safe, Accountable, Flexible, Efficient Transportation Act—A Legacy for Users (SAFETEA-LU or SAFETEA) in August 2005, the reauthorization was, as surface transportation bills go, right on schedule—meaning it was 22 months late. Once again, major policy provisions had not been a big focus of the debate leading up to the bill. The biggest issue, money, was a fight between a Bush administration that was trying to limit the size of the bill and a House and Senate that each had their own ideas of what the total level of spending should be. Once again, the donor/donee issue was a stumbling block. In the end, the minimum-guarantee program was replaced by a new "equity bonus" program, the largest single program in the Act, conferring each state with a 92 percent return on their contributions to the trust fund.

The provision of the Act that attracted the most public attention, however, was its extravagant earmarking. Whereas TEA-21 had 1,849 so-called high-priority projects, SAFETEA had around 5,092. And, these were not the only earmarks in the bill. There were two other large earmarked programs in the highway title of the bill, one of which was supposed to have been reserved for projects of national and regional significance, plus individual earmarks scattered throughout the text of the bill. The transit title and the research title were both heavily earmarked. In fact, the research title was found to be so heavily earmarked that funding for programmatic research activities was constrained dramatically. It was the "bridge to nowhere" that would attract the most attention. This bridge project drew widespread scorn in the press and was held up as evidence that congressional earmarking was totally out of control.

SAFETEA did make programmatic changes. For example, it consolidated highway safety programs in a new core Highway Safety Improvement Program, a Coordinated Border Infrastructure Program, and a Safe Routes to School Program. It also changed how funds are distributed within programs. RABA was reformed, sort of, to make it less likely that

there would be huge spending swings on an annual basis as had been encountered in 2003. The Act also made changes to existing innovative finance programs, most notably by allowing the issuance of private-activity bonds to finance highway and certain other transportation infrastructure projects.

The financial underpinnings of SAFETEA allowed for significant growth in all spending categories. This was made possible by spending every dollar of projected revenue expected to accrue during the life of the bill and by spending down all of the unexpended balances in the trust fund accounts. There was a belief when the bill was enacted that this strategy would result in a discussion about increasing revenue for the surface transportation program when the program came up for reauthorization. Once again, however, reauthorization would not occur on time. SAFETEA expired at the end of fiscal year 2009. Since then, the surface transportation programs have been kept alive by a succession of extension acts.

Unfortunately, the framers of SAFETEA did not foresee the oil price shocks of early 2008 and the subsequent start to the "great recession" later in that year. Each of these events led to reduced fuel use and significantly less income to the trust fund accounts than projected. For the first time in its history, the highway trust fund accounts had to be bailed out by transfers from Treasury general funds beginning in fiscal year 2008. Transfers also occurred in fiscal years 2009 and 2010. By 2010, the transit account would also require general fund assistance.

Congress is once again considering reauthorization legislation. Given ongoing congressional concern over budget deficits, an aversion to new taxes, and, at least so far, a lack of Obama administration leadership, it is unclear whether reauthorization will be successful during the remainder of the 112th Congress. Without the significant new money that made the TEA21 and SAFETEA reauthorizations possible, new legislation will be especially difficult to enact. As a result, a commentary written after passage of the STAA in 1982 might still seem appropriate today.

> [U]ntil the federal deficit is addressed in a way satisfactory to the major public policy participants, the STAA may well be the last representative legislation of an era of tremendous transportation change. Advocates of infrastructure improvements may look back fondly and enviously at this period, in comparison to what they may foresee for near term legislative possibilities.[46]

Lessons Learned

The National Interest

It took a half-century of debate for the U.S. government to overcome its doubts about its constitutional authority and to decide that there was a clear role for the government to play in the provision of transportation. After 170-plus years, we are still grappling with the boundaries of that definition. We now have a very expansive surface transportation program that the NTPP and others believe is in serious need of reform and refocusing. The refocusing, from a historical perspective, is probably the more difficult problem to handle. As this document demonstrates, transportation policy has grown by addition over the year—and rarely by subtraction. The exception is deregulation, the one clear instance in which the federal government has stepped back from an active role and, in that case, decided the market is a better arbiter of competition than the government.

Similarly, in reviewing our collective surface transportation history, it is somewhat remarkable to note how infrequently national policy goals have actually been part of the debate. The several national transportation policy studies in the 1970s and the handful since have rarely been referenced during congressional policy debates. What this shows, is that we give lip service to the idea of national transportation policy periodically, but there has been almost no follow through.

Major Change is Infrequent

Only a very few of the federal government's transportation measures can be viewed as having initiated major new programs or policy changes. Historians can, and will, argue over what initiatives could make this list. For the purposes of this discussion, it could be suggested that a list including the Pacific Railway Acts, the Interstate Commerce Act, the initial Federal-Aid Highway Acts, the Federal-Aid Highway Act of 1956, the deregulation acts of 1978 and 1980, the Urban Mass Transportation Act of 1964, and perhaps ISTEA would be a fairly complete list. Almost all federal action, legislative or otherwise, between these mileposts has been incremental in nature.

As NTPP has talked about surface transportation reauthorization these last few years, many have suggested that the United States needs to recapture the spirit and ambition of 1956 to give the federal program a purpose. In this instance, history would suggest that transportation policy experts have not yet hit on any single policy idea that would or could offer a singular focal point comparable to those in place when the above actions were initiated.

Good Timing Is Essential

President Lincoln took advantage of the sudden absence of regional factionalism and competition to move long-stalled intercontinental railroad legislation through Congress. President Eisenhower took advantage of a postwar economic recession and a public demand for better roads to start the process that led to the 1956 Act. President Franklin Roosevelt had an economic emergency that allowed for considerable leeway and experimentation as he put his economic-recovery plans together.

Major Change Takes Leadership

The intercontinental railroads, the interstates, deregulation, and major program changes like ISTEA were all ideas that percolated for years before they were translated into legislation. In each instance, the concept only came to fruition as a result of strong leadership. In the case of the intercontinental railroads, this was President Lincoln taking advantage of the Civil War to push forward the Pacific Railroad Act. In the case of the interstates, it was a decade and a half of policy work by BPR and others that had its moment when President Eisenhower offered leadership for getting the system built. For deregulation, it was years of studies and policy questioning in academic and government circles that would, with pushes from President Carter and congressional allies like Senator Ted Kennedy, eventually translate into a major policy change. ISTEA differs in some respects from the other examples here, but nonetheless, the Act reflects a lifetime of thought and writing by Senator Moynihan coming to fruition at the same moment when surface transportation policy was ripe for change. From a historical perspective, therefore, it may be the dearth of similar high-profile, well-placed leadership that has made the current reauthorization morass so intractable.

Congress has taken ownership of the Surface Transportation Policy Debate

As this paper points out, beginning in the 1970s, the bills emanating from Congress have taken primacy over those produced by the executive branch. The executive branch has not gone away, the DOT for example, routinely submits draft legislation and/or policy ideas for congressional consideration (except in the last few years), but the relationship has changed. Congressional infighting—House versus Senate, appropriators versus authorizers—has been the key element of delay in formulating legislation. And, most importantly, the leadership that has brought the legislation to final passage has come from within Congress.

It has been suggested that the transition from executive leadership to congressional leadership has changed the focus of legislation from national to regional/local and added a large dose of parochialism. Where presidents until recently at least eschewed earmarking, Congress, again until recently, embraced it. The draft legislation now beginning to appear from Congress seems to have been informed by many groups, including the NTPP. Since

there has been no formal DOT proposal, only a policy outline, it is clear once again that Congress is leading on this issue at the moment. The continued absence of executive leadership, however, probably makes reauthorization more difficult in the short term and reduces the role of policy experts at the DOT, which may have long-term implications.

Transportation Has Not Been a Partisan Issue—Though it Could Become One

There has been almost no mention of political parties in this paper. This is entirely because political parties have had little to do with transportation decision making.

In the early Republic, factions argued about the constitutionality of certain transportation decisions, but even then, those citing the Constitution for their actions were uniform in their belief that the Constitution should be amended to allow what they felt compelled to veto. The old saw that there is no such thing as a Republican or Democratic bridge rings true historically. Rather, transportation policy discussions are more focused on regional and parochial issues. One important facet of this debate, not discussed in depth here for lack of space, is the urban, suburban, and rural discussion. Particularly since transit became part of the surface transportation program, the tensions and competing agendas of these constituencies have been an important focus of the policy debate.

It is also important to recognize that political issues routinely interject themselves into the surface transportation policy debate. A key example has been how deficit issues played out in the 1980s and 1990s, and how they are playing out today. It is in the current context that partisanship may end up influencing—if not trumping—the reauthorization debate. In earlier deficit discussions, compromise occurred between political parties. The failure of the so-called "super committee" has heightened already high partisan tensions and requires an automatic sequestration of all federal programs and activities in fiscal year 2013, including transportation.

The State Role in Surface Transportation Has Evolved

Given the strong structural and political preference for state control in the pre-1956 era, today's strong federal financial role in highway policy seems remarkable. Evolutionists might suggest that today's program is just a maturation of the federal-state partnership that was already in place back then. But, unlike in 1956, state DOTs now lobby for an expanded federal program, even sometimes in recent decades seeking federal regulatory oversight of certain issues. In part, this is because some states are having difficulty funding their own contribution to transportation spending, often because of other spending pressures on state budgets. In other cases, federal spending can be viewed as becoming a substitute for state spending. In part, this is because federal surface transportation money can be spent on a broad range of activities, not just on the federal-aid system as was the case in 1956. Finally, states probably view further expansion of a federal program that has proved itself

lucrative over time, especially in the 1990s and early 2000s, as a better bet than trying to pry a similar level of funding increase from state governments one state at a time.

As the Surface Transportation Bill Has Grown, So Has the Stakeholder Community

Perhaps the biggest surprise of the last 55 years has been the continued expansion of the coalition that supports federal surface transportation programs. Transit supporters, environmentalists, bicyclists, and many others now have a stake to protect in the surface transportation program. The highway component of the federal program has certainly morphed to embrace the disparate aspirations of this coalition. It is now possible to spend highway funds on a very broad range of non-highway (but transportation-related) capital improvements if certain criteria are met. Today's surface transportation programs are many things to many people. As a result, they are now all stakeholders in the ever-expanding universe of those who derive some benefit from the federal program that they once opposed as being no more than a creator of land- and society-despoiling highways. This does not mean that tensions between these groups has ceased to exist. In fact, the potential relative scarcity of additional federal funds will likely make these groups more competitive in seeking inclusion and/or specific treatment in the ongoing reauthorization debate.

Geographic and Other Types of Equity Issues Ultimately Dominate Policy Debates

Partisanship may have been a minor player in transportation policy making, but equity considerations of many types have always played a large role, too. In recent times, surface transportation has only been able to pass when the donor/donee debate has been satisfied. There is plenty of precedent for this historically. For example, even though the central route for the transcontinental railroad was built first, there were always plans for a southern and northern route, which were subsequently built. Also, the 1956 Act, while generally popular in Congress, provided a significant increase in spending for the existing federal-aid system to "encourage" support from small states with little interstate mileage and/or already-built toll roads that would be incorporated into the system. A final example illustrating how pervasive the need for equity is in transportation legislation is the Essential Air Services program. The Airline Deregulation Act of 1978 created this ten-year program to assure that rural America did not lose all of its regularly scheduled air service. Like the temporary highway trust fund, it is still with us today.

The donor/donee debate, while understandable in a historical context, does have a questionable feature in the current debate. To wit, if the goal of a federal program is to redistribute taxes in the form of projects—primarily to the states from which these taxes are collected—why have the federal intermediary? There are significant costs associated with

moving funds through a federal filter that would be absent if the states collected and spent the revenue themselves.

The 1956 Act is revered because of its national focus. While the interstates were under construction, the equity debate was in abeyance. It is only after the system is starting to be completed that the equity debate reappears. The NTPP's work and the work of the several commissions and other groups that have offered policy solutions for the ongoing reauthorization debate have all declared that the United States needs to refocus its programs on true national transportation policy needs. Few of these same groups, however, have offered a way around the equity problems that render their national goals problematic.

Project Eligibility Rarely Disappears, Though it Sometimes Morphs

The history of surface transportation legislation suggests that funding eligibility for activities grows by addition, consolidation, changes in definitions, and other marginal mechanisms. Even when programs or particular funding categories are eliminated by law, some vestige of the program, or eligibility for that program's activities, usually survives. For example, eliminating transit-operating assistance for urbanized areas of more than 200,000 has been offset by expanding the definition of the maintenance expenses that are eligible for federal assistance. Off-system bridges, once a small and controversial target for federal aid, have, over time, become 100 percent eligible for assistance. In the TEA years, it was often said in jest that there was a way to justify almost any type of project remotely associated with transportation as an eligible federal-aid recipient. Things like restaurants in old train stations became objects of public ridicule. As such, eligibility lists have been modified. The reality, however, is more complicated: If the same train station becomes an intermodal center, it might still be able to receive some federal assistance and one of the tenants might be a restaurant.

The Debate Changes Without Additional Money

Over the last three decades, political controversies over equity and other issues have largely been settled by the availability of additional funding. There is agreement that the nation is under-investing in its transportation systems, but this comes at a time when expanding federal expenditures for any purpose is increasingly difficult to discuss, much less to enact. In this context, it is arguably more important than ever to ensure that all federal resources directed to transportation are targeted to truly national priorities and programs that will improve the overall performance of the U.S. system and the competitiveness of our economy. Transportation—like all federal spending—is at a crossroads: Americans must decide what precisely they want the federal government to do—and how to pay for it.

A Final Thought

Back in 2004, Tom Downs had some thoughts on the future of the surface transportation program. They seem just as valid now.

> The program is now about the national government collecting the revenues for the states and sending it back to them for limited national purposes, and no accountability for even those limited goals. This has made the logic of the 95% return to each state almost inevitable. As a nation, we earlier had connectivity as an issue that literally kept us together. We still have critical national transportation purposes like world economic competitiveness in goods movement, security in the movement of our citizens, and safety for all the users of the system, but we cannot make those purposes fit into the authorization processes that we have created. How can the American public know what this program produces? If this program has no clear national purpose, other than revenue sharing, how can we expect the American public to support an expansion in the revenue base? The simple answer is we cannot. There are several commissions proposed in this reauthorization bill that would examine future funding sources for the programs. I have a suggestion that they start by asking the question: "For what?"[47]

Appendix A

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