

# Planes, Trains, and Automobiles

## Multimodal Reauthorization Opportunities

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The features that the next reauthorization bills for surface and air transportation might contain to stimulate capital investment are explored. The general policy tools that the federal government can use (grant, regulatory, tax, and credit incentives) and the budgetary and institutional constraints associated with them are reviewed. The four major trends influencing transportation policy—new approaches to delivering projects, new linkages between transport modes, new technologies to increase capacity, and new mechanisms for raising capital—are described. Various policy incentives that could be included in the next authorizing cycle to help advance transportation projects are suggested. The importance of federal leadership in fashioning policy initiatives to ensure sufficient investment in the nation's transportation infrastructure is reaffirmed.

**T**he 1987 hit comedy *Planes, Trains and Automobiles* followed the intermodal misadventures of Steve Martin and John Candy as they attempted to travel from Chicago to New York. One might well ask if the federal legislative process for funding infrastructure for planes, trains, and automobiles is similarly haphazard, judging from some of the unexpected diversions and strange bedfellows.

In the last 2 years, Congress enacted two major multiyear authorization bills for transportation: nearly \$218 billion from FY 1998 through FY 2003 under the Transportation Equity Act for the 21st Century (TEA-21) for surface transportation and more than \$40 billion

from FY 2001 through FY 2003 under the Wendell H. Ford Aviation and Investment Reform Act for the 21st Century (AIR-21) for aviation. Although both measures contained sweeping changes in terms of linking spending levels to trust fund receipts, they made only incremental adjustments to the programmatic framework through which funding is delivered.

The program guidance and rule making for major elements of these two bills are still being developed, yet already there is discussion of the next reauthorization cycle. As the U.S. Chamber of Commerce has observed, transportation, which until recently was considered a mature industry, may now be more embryonic, as greater reliance on e-commerce imposes ever greater demands on the transportation system for prompt delivery of goods and services. As it turns out, the "new" economy relies quite heavily on the "old" economy's infrastructure (G. Lebedev, United States Chamber of Commerce, "Remarks to a Summit on the Future of U.S. Transportation Infrastructure Finance," May 18, 2000).

The early conversations on reauthorization have raised some intriguing policy questions: What initiatives should be proposed to address the nation's ongoing need for transportation investment? How have these needs changed with the increased importance of timeliness in shipping resulting from the growth in e-commerce? Is it just a matter of continuing to increase the size of the existing capital grant programs for highways, airports, and transit, or are more innovative finance tools needed? Can innovative tools or programs from one mode, such as highways, be applied

effectively to airports or transit? Should the U.S. Department of Transportation (DOT) tailor its financial assistance specifically to "mega" projects and intermodal connections, and leave the states with greater latitude in funding smaller projects?

This paper surveys some of the key trends affecting investment for aviation, transit, and highways—"planes, trains, and automobiles"—and suggests policies DOT could advance through upcoming authorizing legislation to meet the nation's growing mobility needs for both passengers and freight. But before looking to the future, it is useful to survey the present. What kinds of policy tools does the federal government have at its disposal to promote transport investment, and what are the impediments to enacting them?

## OVERVIEW OF FEDERAL POLICY MECHANISMS

Economists argue that federal intervention is justified only when factors such as spillover effects, incomplete information, and other macroeconomic effects distort market forces such that the economy fails to produce optimal outcomes for society. Transportation demonstrates many of these features, and the federal government has a 200-year history of encouraging capital investment in this sector.

### Grant Incentives

Grant incentives are of course the simplest method for promoting infrastructure investment. Outright capital grants have been the foundation of DOT's transportation funding programs to date. By far, the largest component of funding to grantees is through statutory formulas. In FY 2000, roughly half of the \$6.8 billion in transit grants and more than 95 percent of the \$28.9 billion in highway grants are formula funds. For this reason, much of the "policy" debate at reauthorization time tends to degenerate into apportionment squabbles, with each state seeking to maximize its share of funds. If the "formula fights" appear less rancorous for the aviation reauthorizations, it is only because federal airport grants represent a relatively smaller and less important source of capital for most of the larger airports' capital investment programs.

Recent legislation has included some grant provisions that seek to stimulate greater investment other than by simply increasing the absolute level of funding. For example, the value pricing program uses modest grants (\$51 million over 6 years) to promote the implementation of new variable-pricing policies that encourage efficient utilization of highways. These types of grant incentives are designed to leverage additional

resources and reward innovation, not just provide more money.

In addition to grant assistance, the federal government can offer three other types of policy mechanisms to help achieve the optimal level of capital investment activity noted above: regulatory incentives, tax incentives, and credit incentives.

### Regulatory Incentives

Regulatory incentives involve reforming rules and procedures to streamline or simplify the process of developing projects that use federal aid. TEA-21, for example, included provisions allowing greater flexibility in meeting matching fund requirements, improved coordination of multiagency federal environmental review, and expanded use of design-build contracting. These regulatory reforms do not provide financing *per se*, but they can help reduce the cost and expedite the development of new projects.<sup>1</sup>

### Tax Incentives

Tax incentives relate to modifying the Internal Revenue Code to induce capital investment through preferential tax treatment. For example, a proposal that was part of the Senate version of TEA-21, but failed to be included in the final enacted version, would have authorized up to \$15 billion of tax-exempt private activity bonds for highway projects with private-sector participation in their operation.<sup>2</sup> On the rail side, a proposal was introduced earlier this year on behalf of Amtrak authorizing the issuance of \$10 billion in tax credit bonds over a 10-year period to fund high-speed and other intercity rail improvements.<sup>3</sup> In prior years, public transit has benefited from a variety of tax-oriented incentives, such as the safe harbor leasing program in the 1980s, which essentially allowed the "sale" of depreciation deductions on rolling stock to private parties through a sale-leaseback structure.

### Credit Incentives

Credit incentives use federal assistance to help the project sponsor attract debt or equity capital, or both, from external sources on more favorable terms. Federal credit-related programs can be viewed as falling into one of two general categories: direct credit or indirect credit.

Under direct credit, the federal government plays an active role as a lender, guarantor, or insurer. TEA-21 established two new direct credit programs: the \$10.6

billion Transportation Infrastructure Finance and Innovation Act (TIFIA) program for large surface transportation projects (costing more than \$100 million), and the \$3.5 billion Railroad Rehabilitation and Improvement Financing (RRIF) program for freight and passenger rail projects. AIR-21 established a new credit program for financing up to half the cost of regional jet aircraft serving smaller markets, through direct or guaranteed loans. Only the TIFIA program is active at this time, although the RRIF implementing rule was released in July 2000—more than 2 years after passage of TEA-21.

In terms of indirect credit, two significant initiatives for surface transportation are actually continuations of programs first authorized in 1995 under the National Highway System Designation Act: GARVEE bonds and state infrastructure banks (SIBs).<sup>4</sup> GARVEE bonds, an acronym for “Grant Anticipation Revenue Vehicles,” involve a state’s issuance of long-term bonds repayable with annual apportionments the state expects to receive in the future from FHWA. SIBs are state-created revolving funds initially capitalized with federal transportation grants and state matching dollars. The deposited funds are used to make loans and provide other forms of financial assistance to projects for highway and transit purposes. More than 30 states have established SIBs, which, as of March 2000, had entered into 117 separate loan agreements totaling \$525 million.

## FACTORS SKEWING THE CHOICE OF POLICY INCENTIVES

A quick survey of the major new provisions of TEA-21 and AIR-21 relating to capital investment reveals that most of the new initiatives were in the form of regulatory incentives, several were in the form of credit incentives, and none was in the form of tax incentives. This prompts the question, Why are certain types of policy incentive tools, like regulatory reforms, favored over others? The answer may be found by considering two factors that often skew federal policy decisions: budgetary scoring implications and internal impediments.

### Budgetary Scoring Implications

Each of the foregoing mechanisms—grant assistance, regulatory streamlining, tax provisions, and credit programs—has both a policy impact and a budgetary impact. The policy impact refers to how effective the technique is at producing the desired objective (greater transportation capital investment). The budgetary impact refers to how costly the technique is (the “scoring” of the proposal under federal budgetary accounting procedures).

For example, regulatory reforms have minimal if any explicit budgetary cost, making them relatively easy to implement. Although they are helpful tools, they generally are not sufficient by themselves to induce major capital investment activity. Tax incentives can assist projects at the margin in gaining market access by lowering their cost of capital. Although tax code modifications require no direct spending, they do result in “tax expenditures” (forgone revenues to the Treasury) that are calculated under highly arcane budgetary accounting conventions understood by only a handful of Beltway insiders. Credit incentives can be highly effective in stimulating investment, particularly when they can induce coinvestment from other sources.<sup>5</sup> But credit assistance raises ancillary issues about risk management, implied federal liability on other funding sources, and induced tax expenditures that complicate its usage. As one might suspect, to adequately describe the scoring implication of these various policy incentives would require a scholarly treatise in itself. Fortunately, one has already been written (1).

To a certain extent, DOT (as is the case with other federal agencies) has become a captive of the budget-scoring mentality, developing synthetic responses to unique budgetary calculations. It is understandable that federal policy makers get caught up in “trying to win the loser’s game”—that is, basing policies on esoteric budgetary accounting rules that drive annual appropriations rather than on programmatic effectiveness. In doing so, policy makers run the risk of pursuing those policy options with the lowest “score” rather than the highest return.

### Internal Impediments

Decisions as to which policy tools to advance are not unilaterally made by DOT. Such matters often must reflect a consensus position within the executive branch. Although on paper DOT is the Cabinet-level agency primarily responsible for transportation matters, in fact DOT frequently defers to the views of other agencies. For example, entities such as the Department of Labor and the Environmental Protection Agency have taken forceful positions on certain regulatory issues—like transportation planning, air quality, and labor protection—that may run counter to some of DOT’s transportation objectives (such as building projects as quickly and operating them as inexpensively as possible). The interagency dynamic is most conspicuous on budgetary matters. Both the Department of the Treasury and the Office of Management and Budget (OMB) weigh in heavily on policy initiatives that they deem to fall within their purview. This is particularly the case with tax incentives (Treasury) and credit incentives (OMB). It is



not uncommon for these other agencies' views to prevail over those of DOT within the administration. For this reason, DOT may find itself constrained to support policies that will be the least objectionable internally rather than the most advantageous externally.

### REAUTHORIZATION: THE LONG AND WINDING ROAD

Naturally, it would be desirable if federal policy makers could step back from the distractions of budgetary accounting rules and internal impediments and frame reauthorization initiatives on the basis of the proposals' effectiveness in meeting the nation's transportation needs. But what are likely to be the key investment needs in coming years, and how can transportation policy address them? We have identified four major emerging trends in transportation services that we believe federal policy should respond to, through a mix of ongoing and revised grant, regulatory, tax, and credit incentives:

1. New approaches to project delivery,
2. New linkages and synergies among modes,
3. New technologies for increasing capacity, and
4. New mechanisms for raising capital.

#### New Approaches to Project Delivery

Historically, transportation infrastructure was considered public works, to be provided by and paid for through governmental sources. This typically meant that each project had to adhere to cumbersome public procurement rules for awarding contracts on the basis of a low bid rather than the best value. Once a project was completed, there was limited financial incentive for the governmental owner to operate and maintain it efficiently. But with the dramatic success of deregulation and competition in stimulating other sectors of the economy, there is growing recognition among public officials that building, financing, and operating projects can be enhanced through private-sector participation. This takes the form of public-private partnerships (PPPs), where the private sector assumes certain responsibilities for design, construction, financing, or management, but the asset typically remains under governmental ownership.

While political ideology certainly has played a role, the interest in PPPs for project delivery has been truly bipartisan. The reasons for this are several: PPPs can access new expertise not resident within the government; they often can achieve greater operating efficiencies; they can introduce a new source of investment

capital; and perhaps most significantly, they can shift various types of project risk away from the public sector. This trend is reflected in a number of important federal legislative and policy measures for surface transportation over the last decade, starting with the Intermodal Surface Transportation Efficiency Act of 1991, Presidential Executive Order 12893 on Infrastructure in 1994, FHWA's Test and Evaluation (TE-045) Program of 1994, the National Highway System Designation Act of 1995, and most recently, TEA-21 in 1998. Federal aviation policy has been slower to embrace these changes, but AIR-21 shows evidence of progress in drawing upon PPPs as well.

At the same time, it is important to acknowledge that the overwhelming majority of state and local capital spending will continue to be on smaller, discrete, and non-revenue-generating projects. Because they are not capable of capturing revenue streams, these projects will remain dependent on grants and likely will continue to be publicly funded, owned, and operated. Yet for a certain subset of projects that are larger, complex, and revenue-generating, this field is ripe for further policy enhancements throughout the various stages of the project life cycle—from developmental activities to design, construction, operation, and maintenance.

#### *Project Development: Allocating Risk Between Public and Private Sectors*

A decade ago, when the concept of turnkey developments first started to gain widespread acceptance, a number of major construction, engineering, and project management firms formed project developer subsidiaries. These teams sought to identify new transportation projects and then design, build, finance, and manage them. However, 10 years later, most of these firms have exited the development business, owing to the long lead times, uncertain permitting process, and vulnerability to shifting political support.

The developmental stage is by far the riskiest phase in a transportation project's life cycle, because that is when the proposal is being environmentally assessed and politically vetted. It is a long, expensive, and uncertain process. While we do not necessarily advocate backsliding from the current painstaking transportation planning procedures, many would agree that it is unreasonable to expect the private sector to absorb what essentially are political risks, and not commercial risks, during this developmental stage.

One potential way to help mitigate preconstruction risks for projects being sponsored by PPPs is through some form of risk insurance. A 1997 draft policy discussion paper sponsored by FHWA outlined a proposal under which development cost insurance would provide

federal reimbursement to a project sponsor for a portion of the preconstruction development costs in the event a PPP project that had been approved on a statewide transportation plan failed to proceed to construction after 5 years (2, p. vi). Although there may be a legitimate question of moral hazard (i.e., would the risk of financial exposure to the federal government on its insurance policy skew its decisions on any permits and approvals), this type of program could help regenerate private-sector interest in "filling the project pipeline."

### *Project Construction: Design-Build Procurement*

TEA-21 now explicitly allows federally assisted highway and transit capital projects costing \$50 million or more to be procured on a "best value" rather than a low-bid basis. Advocates of these turnkey approaches believe that they result in faster completion and less exposure to cost overruns, although it is unclear to what extent there are demonstrable cost savings in the base price per se. In coming months, as refinements to these design-build agreements evolve and DOT issues guidance for this new TEA-21 provision, it should be possible to draw more explicit conclusions as to its effect on delivering large projects on time and on budget.

### *Project Operation: Long-Term Concessions and Warranties*

Increasingly, state and local transportation officials are making investment decisions on the basis of life-cycle costing of the project rather than simply the lowest construction cost. This approach should be more cost-effective over the long term, since the pricing of the initial investment will reflect ongoing capital renewal requirements needed to maintain the asset in good repair over an extended time period. One way to accomplish this is through combining design-build procurement with long-term operating concessions. For example, the first phase of the Hudson-Bergen project, a new 15-km (9.5-mi) long light rail project in northern New Jersey, has been delivered under a design-build-operate-maintain agreement with a private-sector consortium. The consortium's agreement with the state covers not only the guaranteed price/guaranteed completion date delivery of the project, but also the cost of operating and maintaining it over 15 years.

Operating concessions need not be limited to new investment alone. More and more state transportation departments and toll road operators are considering the feasibility of outsourcing certain routine maintenance activities, much as the Virginia Department of

Transportation has done under a 5-year, \$131 million contract covering several hundred miles of its existing Interstate highways. Although the Internal Revenue Service's new management contract rules added some degree of flexibility, they still fall far short of allowing states to award true performance-based compensation incentives to private concessionaires.

Another approach to taking a life-cycle perspective in evaluating investments involves long-term warranties. In 1998, the state of New Mexico entered into a unique long-term warranty with a consortium of private firms in connection with its Corridor 44 project, a reconstruction and widening of a 190-km (120-mi) long segment of rural highway in the northwestern section of the state. The state paid a \$62 million up-front warranty fee to the firms to assume responsibility for maintaining the road pavement and certain structures over a 20-year period. New Mexico's State Highway and Transportation Department estimated that if it had to maintain the roadway itself, the cost over the warranty period would have amounted to \$151 million in present value terms. Federal policy could be clarified as to the eligibility of such arrangements for federal-aid reimbursement to encourage further utilization of long-term warranties.

Finally, techniques such as shadow tolling could be used to incorporate a life-cycle perspective into highway financing decisions. Under shadow tolls, a governmental entity makes annual payments from general revenues to a private operator on the basis of traffic levels on the road. The private party is responsible for designing, financing, and maintaining the facility to meet defined service standards on a continuing basis. Higher traffic levels trigger greater payments, ensuring that sufficient resources are provided to maintain a project experiencing heavier traffic utilization in good repair. Annual reinvestment based on usage levels is a much more efficient approach than letting the project deteriorate, which would necessitate a major reconstruction in later years.<sup>6</sup> A federal annual service contract approach similar to shadow tolling might be a good solution to the funding impasse confronting the \$2.3 billion Woodrow Wilson Bridge project near Washington, D.C. The long-overdue replacement of this critical bridge—the only federally owned component of the nation's Interstate system—has been delayed because of budgetary constraints in funding it through traditional up-front grants.

### *New Linkages and Synergies Among Modes*

Every federal reauthorization act for transportation has categorized funding into discrete programs for specific classes of projects, typically along modal lines. Because

the old modal boundaries are becoming increasingly blurred at critical nodes and along key corridors, a compartmentalized approach presents clear challenges to DOT in advancing these important types of investments.

### *Intermodal Linkages*

Just as in the telecom industry, where "the last mile" is the most critical element in the system, in the transport sector the "last 100 yards" or linkage between different modes often represents the most critical component of a region's transportation system. Major investments such as the Alameda Corridor (seaport-to-rail freight), the Miami Intermodal Center (ground-to-air access), and the Farley-Penn Station project (intercity rail-to-transit interchange) reflect the importance of building linkages between modes originally developed independently. These facilities tend to be located in high-value areas, connecting built-out, mature systems with established traffic and revenue histories. Private concessions and commercial real-estate development are playing an increasing role in the finance package. But these intermodal projects also require blending multiple programs and sources of public funds to round out the plan of finance.

The Miami Intermodal Center is an example of a "tweener." It is a \$1.35 billion project located adjacent to the Miami International Airport, one of America's busiest international gateways. The project consists of a remote airport check-in facility, a people mover, a consolidated rental car center, and new regional linkages to highways, buses, commuter rail, and Amtrak service. The sum of the parts clearly constitutes an integral and important intermodal transportation project that will significantly relieve congestion. However, if the project is dissected into its constituent parts, certain key pieces such as the car rental facility do not fit squarely into customary modal eligibility definitions under traditional DOT programs. Similar eligibility issues beset the Alameda Corridor project, a \$2.3 billion freight rail link connecting the Ports of Los Angeles and Long Beach with the large rail marshalling yards in East Los Angeles. Broadening the rules as to what types of costs are eligible for federal funding could significantly benefit these types of intermodal facilities.

Another eligibility issue requiring attention involves improving ground access to congested airports. Airports find it difficult to address such needs because the airlines, which have considerable say over how their rates and charges are spent, generally oppose using these funds off-airport. One potential source of funding for access projects is passenger facility charges (PFCs). Congress in AIR-21 authorized airports to increase their PFCs from \$3.00 to \$4.50 per enplaning

passenger. FAA recently expanded the use of PFCs to permit spending on off-site capital projects that improve airport access, such as New York City's Airtrain, which will connect Kennedy Airport's terminals with a key rail and subway interchange located several miles away. Liberalizing the application of PFCs should spur new investment in ground access to airports that would benefit passengers as well as airport and airline employees.

### *Multimodal Corridors*

The federal government could improve freight and passenger mobility in certain key travel corridors by allowing more freedom to states in allocating funds among programs and uses. Freight rail carriers have already broached the concept of gaining access to highway funds to improve their rights-of-way, as cheaper alternatives to widening Interstate highways for reducing congestion. Norfolk Southern, for example, recently proposed seeking public funding to help it double-track a 1200-km (750-mi) stretch of its route between Pennsylvania and Tennessee that parallels Interstate 81. The rail project would cost \$900 million and could be completed in 4 years. The alternative of adding four lanes to a heavily traveled 560-km (350-mi) stretch of Interstate 81 in Virginia would cost \$3.5 billion and require up to 20 years to complete.

On the passenger rail side, Amtrak sought unsuccessfully in TEA-21 to become eligible to receive federal-aid apportionments from states wishing to subsidize rail service along key in-state corridors. These types of policy changes were unthinkable in the past. Yet, sectors that have traditionally viewed themselves as competitors, such as the trucking industry and rail carriers, increasingly are becoming customers of one another, and both could benefit from shared resources. Perhaps the gradual "eligibility creep" seen in the Surface Transportation Program and the Congestion Mitigation and Air Quality (CMAQ) Program will become the standard in the future, giving greater funding flexibility to transportation planners, policy makers, and project sponsors.

### *New Technologies for Increasing Capacity*

Given the time constraints and enormous expense of constructing additional lane miles, transit lines, and airport runways, the most cost-effective way to expand capacity in congested areas is to use technology to increase throughput from existing assets. Transportation is indeed more than concrete, asphalt, and steel: silicon is another vital component.



Transportation infrastructure increasingly will draw on the technologies that have emerged from the new economy to apply toward intelligent transportation systems (ITS). The focus of ITS proponents, which up until this point has been largely on technological and deployment issues, now must shift to the “value proposition”—how can these new systems help sponsors identify and harness revenue streams so that the projects can become financially self-supporting?

The influence of ITS on all forms of transportation will increase rapidly as the enabling technologies are installed and interoperability issues are resolved. Innovations such as traveler information systems, electronic payments, global positioning capabilities, and “on-the-fly” trip planning/modification software will increase transport capacity, allow dynamic trip pricing (including congestion pricing in some areas), and provide new options for intermodal coordination. The technology now exists to collect user fees in a frictionless fashion through devices such as transponders and debit cards. This convenience factor may reduce consumer resistance to pay for transportation improvements and allow increased use of the pricing system to manage demand for travel services.<sup>7</sup>

The key obstacles to change may well be institutional and political rather than financial or technological. The distinctions among private vehicles, public transit, taxis, and other shared-ride services are rapidly disappearing as a consequence of advanced traveler information, dispatch systems, and electronic billing. This trend ultimately may require a complete restructuring of the public transit sector, from serving as a transportation operator to becoming a transportation facilitator that funds and coordinates a wide array of other service providers. Interestingly, most of the innovations in the field of decentralized, demand-responsive transit service have come from the smaller rural and special-needs transit providers. The large, well-established transit properties serving major urban areas tend to have more of a “line-haul” mentality that is less conducive to incorporating these new technologies.

It is clear that federal policy will need to shift away from using public dollars to fund technology investments and move toward eliminating outdated regulatory and institutional barriers, so that the marketplace may fully exploit and market such technologies to end users. In this regard, perhaps DOT should consider rolling out a technological version of the highly successful 1994 TE-045 program. This initiative of grant and regulatory incentives allowed states to explore the use of new financial techniques not specifically authorized under current law. Many of these ideas were incorporated into subsequent legislation; a similar call for proposals from ITS providers or facilitators may prove equally useful on the technological front.

## **New Mechanisms for Raising Capital**

One of the most significant trends in the capital markets during the 1990s was the securitization of assets and revenue streams to generate up-front proceeds. This trend, which has been evident in the transport sector as well, will become even more pronounced in coming years. Recent federal policy initiatives such as GARVEE bonds and TIFIA have encouraged this process. Yet there is more that could be done to assist sponsors in capitalizing both federal revenue streams and project-based revenue streams.

### ***Monetizing Federal Revenues: Air GARVEEs***

State and local governments have begun monetizing their future anticipated stream of federal-aid apportionments through the issuance of GARVEE bonds for surface transportation projects. Some of these debt obligations extend many years into the future—well beyond the current authorization period. This practice is aided by the long and predictable history of congressional funding for the major formula assistance programs.<sup>8</sup> There may be merit in applying this mechanism to the aviation sector through the formula entitlement portion of the Airport Improvement Program (AIP). This could be accomplished by expanding the eligibility of AIP funds to include the payment of debt-related costs, thereby establishing Air GARVEEs. This refinement of FAA’s existing Letter of Intent program would put federal airport funds on an even footing with highway and transit funds and facilitate pay-as-you-use debt financing for certain airport projects. There is already precedent for assisting airports in capitalizing federally authorized revenue streams; in recent months, FAA has modified the terms of its PFC program, better enabling airports to issue nonrecourse revenue bonds backed solely by the pledge of PFC receipts.

### ***Leveraging Federal Grants: Infrastructure Revolving Funds***

The National Highway System Designation Act demonstrated how federal transportation funds could capitalize loan revolving funds under the SIB program. This program was severely curtailed in TEA-21 because of controversy over the applicability of federal rules such as Davis-Bacon labor provisions in follow-on lending activity.<sup>9</sup>

In addition to reinstating the SIB program for highways and transit, Congress should consider creating an aviation version. Air travel is projected to grow dramatically over the next 10 years. Service and capital

investment have been concentrated on the 75 large and medium hub airports that handle approximately 90 percent of passenger enplanements. The remaining 10 percent of commercial travel (in excess of 70 million passengers per year), as well as many general aviation and corporate aircraft, use nearly 350 small hub and nonhub airports throughout the country. These smaller airports are a vital link in the nation's air system and have the physical capacity to accommodate substantial growth. Because of their relatively small sizes and marginal operating ratios, most of these airports do not have ready access to the capital markets. Many, however, do have the financial resources to repay a subsidized rate borrowing, particularly given that the size of their capital projects are relatively modest—generally in the range of \$1 million to \$10 million.

The capital needs of smaller airports could be addressed by establishing a loan revolving fund using a portion of the formula entitlement grants that major airports must turn back to FAA if they increase their PFCs. Similar to the Surface Transportation Program's SIBs, this Aviation Infrastructure Revolving Fund would be empowered to use its contributed capital to fund low-interest rate loans to airports otherwise unable to access the public capital markets. Over time, loan repayments could be recycled to fund additional loans to other airports. But unlike SIBs, this program would be more effectively administered at the national level; there generally is an insufficient concentration of airports located in any one state with ready-to-go projects to justify the creation of a state-level revolving fund. To help insulate the program from budgetary and political interference, the fund could even be structured as a private, nonprofit corporation outside of the federal government.

### *Assessing Federal Credit: Building on TEA-21 and AIR-21*

Direct credit incentives in the form of federal loans and loan guarantees offer a potent way to leverage federal funds, because of the fractional budgetary impact and substantial coinvestment. TEA-21 authorized the TIFIA and RRIF credit programs to assist surface transportation and rail projects, respectively, and AIR-21 authorized a regional jet acquisition credit program. While the TIFIA program is funded sufficiently to provide about \$10 billion in credit assistance to a broad array of highway, transit, passenger rail, and multimodal projects, the RRIF and regional jet programs are not funded and depend on annual appropriations or third-party contributions of the subsidy cost, or both, to become active. The recent enactment of these credit incentive programs indicates a growing willingness of policy makers to look beyond regulatory and grant incentives.

The key to designing a successful credit program is properly targeting the assistance to fill market gaps. The federal government should not be displacing private investment activity that would have occurred in any case, nor should it be engaging in "adverse selection" by lending only to borrowers too weak to meet their repayment obligations. The performance of the credit instruments funded under TIFIA undoubtedly will be a key determinant of the future of federal transportation credit incentives. Another issue will be whether Congress takes the position that there already is sufficient federal support for transportation investment under the "guaranteed" grant funding levels, showing reluctance to allocate more resources (even highly leveraged resources) to this sector.

### *Rationalizing Tax Code Provisions*

New legislation should address certain inconsistencies among the modes in their access to tax-exempt debt financing. For example, while airport and seaport projects with private-sector participation are authorized to issue "exempt facility" bonds not subject to the state annual volume cap on private activity bonds, transit PPP projects are subject to those issuance ceilings. An even more glaring omission is highways; there is no provision allowing public highway projects that are subject to long-term private operating concessions to issue tax-exempt bonds. As noted earlier, a measure addressing this omission failed to be included in the final version of TEA-21. As for high-speed rail, the current private activity bond rule for intercity passenger rail projects stipulates that the system must operate at average speeds of 240 km/h (150 mph). To date, none of the proposed rail projects have been able to meet the required speed levels, and therefore no bonds have been issued. On policy grounds, it would be desirable to see the standard relaxed to allow incremental improvements [to, say, 130 or 145 km/h (80 or 90 mph)] to access the tax-exempt market, and not just the superfast French TGV-type systems.<sup>10</sup>

### *Identifying New Revenues: The Air Traffic Control System*

Finally, DOT should continue to promote policies and technologies that enable infrastructure financing through user fees independent of the annual appropriations process. A prime candidate for such treatment is the nation's air traffic control system, which has suffered from chronic underinvestment, in large part because of uncertain year-to-year spending authority. Cost allocation models currently being refined can accurately and



equitably measure and allocate the cost of providing air traffic control services to airlines and other consumers, allowing implementation of user charges. Whether FAA's air traffic control operations are "corporatized" or remain a governmental function, the revenue stream from user charges could support debt financing for billions of dollars of much-needed capital investments in the nation's air traffic control system. A successful precedent can be observed at the Metropolitan Washington Airports Authority, which has undertaken a massive capital expansion program at Dulles and Reagan National Airports since being spun off by FAA and selling revenue bonds backed by airport rates and charges.

Congress took a tentative step in this direction under AIR-21 by authorizing FAA to enter into up to 10 long-term capital lease agreements for air traffic control equipment and facilities. However, the real potential for expanding investment in the air traffic control system will only be achieved when FAA has access to an independent revenue stream that is insulated from year-to-year political and budgetary vagaries. A logical starting point would be instituting a self-funding pilot program for oceanic air traffic services, where a shadow cost allocation system already is in place.

## CONCLUSION

The reauthorization debate is dominated by familiar questions concerning the proper federal role in overseeing the nation's transportation system. These questions relate to how large the transportation funding pie should be (overall spending levels), how it should be sliced up (distribution formulas), and what ingredients should be put into it (new programs).

### Size of the Funding Pie

The recent TEA-21 and AIR-21 reauthorization bills underscored the primacy of dollars. Big ideas about policies and programs were dwarfed by bigger ideas about funding and firewalls. Although elevated spending levels remove the immediate pressure to address infrastructure needs more fundamentally, in the long run, structural reforms in how business is done will be necessary. At some point, even the relevance of the current set of federal transportation taxes will need to be seriously examined.

A generous characterization of the firewalls, or guaranteed spending levels for highway, transit, and airport programs, is to view them as Congress's way of establishing backdoor capital budgeting for long-lived infrastructure investments. However, the politics of surplus may prove more problematic than the politics of deficit.

The apparent breakdown of federal budget discipline in these days of plenty, when budgetary rules and spending targets are increasingly changed or violated, may reveal the recent transportation firewalls to be highly combustible as the next reauthorization approaches.

### How the Pie Is Sliced Up

Slicing up the pie is an apt metaphor for the food fights that invariably break out among the states over the complex allocation formulas. Up until now, the distribution arithmetic has been based on need, as measured by data such as population, vehicle miles, and lane miles, rather than on asset performance. Some observers have noted that a number of the federal-aid programs actually reward inferior performance, such as inadequate maintenance of existing assets. For example, FHWA's bridge replacement program allocates funds on the basis of poorly maintained structures, and the CMAQ Program allocates more funding to those regions with the worst air pollution and congestion—indicators of inadequate or poorly allocated investment in transport infrastructure.

Perhaps the next authorization bill will incorporate performance standards for transportation infrastructure that will reward additional funds to those states that maintain their transport systems the best, rather than vice versa. The new governmental accounting standard adopted last year may help this trend along. GASB Statement 34 requires state and local governments to capitalize their transportation infrastructure assets on their balance sheets and recognize depreciation expense unless they can demonstrate that they are maintaining their assets at specific publicly disclosed service standards.

### What Ingredients Should Go into the Pie?

Of arguably greater importance than the absolute size of the federal pie or how it gets sliced up is deciding on the ingredients that go into it. The policies, procedures, and rules that attach to federal programs ultimately determine their effectiveness. We have attempted a broad, quick survey of the major trends influencing transportation policy, the basic mechanisms or tools by which the federal government can encourage capital investment, and some of the budgetary and institutional factors that will affect the outcomes. Along the way, we have pointed out a few specific programs and ideas that could prove helpful in meeting the nation's future transportation needs in a cost-effective fashion. These are summarized in Table 1 on the basis of the type of policy incentive tool being suggested.

TABLE 1 Survey of Potential New Federal Incentives for Reauthorization

	Planes	Trains <sup>a</sup>	Automobiles
Regulatory Incentives	<ul style="list-style-type: none"> <li>• Broaden project eligibility for multimodal facilities</li> <li>• Expand use of PFCs to assist in ground access</li> <li>• Encourage design-build for major airport projects</li> </ul>	<ul style="list-style-type: none"> <li>• Broaden project eligibility for passenger and freight rail</li> <li>• Confirm eligibility for reimbursement of long-term warranty payments</li> <li>• Initiate test &amp; evaluation program to encourage ITS providers/facilitators</li> </ul>	<ul style="list-style-type: none"> <li>• Broaden project eligibility for intermodal facilities and multimodal corridors</li> <li>• Confirm eligibility for reimbursement of long-term warranty payments</li> <li>• Expand Interstate toll pilot</li> <li>• Initiate test &amp; evaluation program to encourage ITS providers/facilitators</li> </ul>
Tax Incentives		<ul style="list-style-type: none"> <li>• Lift volume cap on transit private activity bonds</li> <li>• Reduce threshold speed requirement for high-speed rail private activity bonds</li> <li>• Authorize tax credit bonds for Amtrak</li> </ul>	<ul style="list-style-type: none"> <li>• Allow private activity highway bonds or allow incentive-based management contracts</li> </ul>
Credit Incentives	<ul style="list-style-type: none"> <li>• Initiate Air GARVEE bonds</li> <li>• Set up national loan revolving fund for small and nonhub airports</li> <li>• Establish user-charge-based debt financing program for the air traffic control system</li> </ul>	<ul style="list-style-type: none"> <li>• Expand SIBs</li> <li>• Introduce a development risk insurance program</li> <li>• Extend TIFIA</li> </ul>	<ul style="list-style-type: none"> <li>• Expand SIBs</li> <li>• Introduce a development risk insurance program</li> <li>• Extend TIFIA</li> <li>• Encourage shadow tolls</li> </ul>

<sup>a</sup> Public transit and intercity rail.

### *Continuing Need for Federal Leadership*

Every highway/surface transportation reauthorization bill over the past quarter century has been preceded by calls for drastically cutting back the federal role. Not coincidentally, this notion emerged as the Interstate construction program began winding down in the 1970s. Although devolutionists generally would preserve key regulatory and safety functions, they typically advocate repealing many of the federal excise taxes and the financial assistance programs funded by them. State and local governments would be largely on their own in funding, building, and maintaining the transportation infrastructure within their jurisdictions.

We disagree. We believe that the justification for a federal transportation role tomorrow is as compelling as it was yesterday. The old economy's Interstate system has been built but needs massive rehabilitation. And the demands that the new economy is placing on the

nation's transportation systems are only now becoming evident.

The federal government can and should play an important role in designing, building, and preserving the infrastructure needed for the 21st century. Federal leadership is critical in addressing the four trends we have identified: enhancing project delivery systems, improving modal linkages, promoting new technologies to increase system capacity, and encouraging new methods of raising capital to fund projects.

It is important to recognize that these activities differ substantially from the federal government's historic role of distributing funds and regulating operations. They will require a major reorientation of DOT's traditional focus to accomplish them—the much heralded reinventing of government championed, at least rhetorically, by the Clinton administration. True, DOT still will need to deal with the budget-scoring and internal impediments cited earlier. Congress could swiftly fell

many of the budget-scoring issues with one stroke of the pen through adopting a capital budget for long-lived investments financed with federal funds. But the implications of doing so extend far beyond transportation policy and would have a profound influence on how the federal government conducts itself, at least fiscally. As for the interagency clearance process, which often deflects or refracts DOT's vision of a national transportation policy, perhaps this is a necessary and indeed inevitable cost of doing business in the public sector.

In summary, there is a continuing and important federal role to be played in framing new policies—whether regulatory, tax oriented, or credit based—to help meet the nation's future transportation investment needs. It is the mandate of the U.S. Department of Transportation to do it. If DOT did not already exist, someone surely would have to invent it.

## NOTES

1. The trend has by no means been uniformly toward less regulation. Congress and DOT have responded to cost overruns in megaprojects such as the Boston Central Artery and Los Angeles Red Line subway by imposing new oversight constraints.
2. It should be noted that other transport modes—airports, seaports, transit, and even high-speed rail—have specific “exempt facility” tax code provisions enabling projects with substantial private-sector participation to access the tax-exempt bond market.
3. Under the tax credit bond proposal, the federal government would subsidize effectively 100 percent of the interest expense by granting an annual tax credit to bondholders equal to the yield on high-grade corporate bonds. Since interest cost represents 50 percent or more of the financial cost of long-term borrowing, tax credit bonds offer a much deeper level of subsidy than do tax-exempt bonds, which reduce conventional borrowing rates by perhaps 20 percent.
4. Indirect credit also could be viewed as a kind of regulatory reform [i.e., allowing federal grants to be used for new purposes, such as payment of debt service (GARVEEs) or capitalization of a revolving loan program (SIBs)].
5. The budgetary cost of providing direct credit is based on a loan loss reserve concept known as “subsidy cost.” Because the subsidy cost generally represents less than 10 percent of the face amount of the credit being provided, it can allow substantial leveraging of federally appropriated dollars.
6. The importance of maintaining the quality of the asset base has received further impetus with the introduction last year of new accounting rules for reporting on public infrastructure assets by the Governmental Accounting Standards Board (GASB Statement 34).
7. It is apparent that not everyone is equally enthusiastic about applying user charges and the pricing mechanism. The Clinton administration's 1998 reauthorization proposal to allow (not require) states to toll Interstates—a five-sentence provision in a 500-page document—generated more controversy when introduced than all the other contents of the bill combined. One wonders to what extent this widespread opposition will moderate for the next reauthorization.
8. These types of borrowings have proven more problematic for transit new start projects, whose federal grant stream under so-called full-funding grant agreements is vulnerable to the yearly earmarking levels set by congressional appropriations committees.
9. Under TEA-21, only four states—California, Florida, Missouri, and Rhode Island—are authorized to continue depositing federal funds into their SIBs.
10. One quick fix that might do the trick would be for Congress to decree that the speed standard “go metric.” If the threshold were converted to 150 km/h (rather than 150 mph), not only would many more projects qualify, but also Congress could claim credit for conforming to the measurement system used in almost every other country around the globe!

## REFERENCES

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2. *Federal Credit for Surface Transportation: Exploring Concepts and Issues*. FHWA, U.S. Department of Transportation, Nov. 1997.