A Call to Action: Revitalization of National Infrastructure Investment

The Strengthening America's Future Initiative

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Summary

America's infrastructure is in need of dramatic improvement. Government has been unable to effectively prioritize and fully fund national infrastructure projects. As a result, not only is current infrastructure in bad condition, but the resultant focus on repair and maintenance prevents the nation from moving toward "smart" infrastructure improvements, the development of which could create jobs and improve national security, economic efficiency, environmental protection, and public health. In addition, the government has not clearly communicated to the American people how and why their tax dollars are spent on infrastructure. This paper sets forth recommendations for addressing these issues and for improving national infrastructure policy.
To help put us back on the path to ensured economic vitality, security, and quality of life, we must reinvest in our physical infrastructure; this will require stepped-up national leadership, structural reforms, unprecedented innovation, and, perhaps most importantly, collectively facing up to hard choices.

I. Background: The Infrastructure Investment Gap—Roots of the Problem

II. Addressing the Infrastructure Investment Challenge

- **Recommendation 1: Generate a renewed focus on innovation to enhance U.S. competitiveness in the global marketplace and restore a national vision for repairing and caring for our nation's infrastructure.**
    - Action: Reinvigorate federal decision making and funding processes with a sense of urgency and incentives for innovation.

- **Recommendation 2: Establish and/or reinvigorate the user pay framework across the infrastructure investment spectrum.**
    - Action: In the short term, utilize existing revenue mechanisms, including modest increases to the federal fuel taxes, to revitalize the user pay construct and address immediate needs.
    - Action: Commence the transition to a new, more direct user charge system for surface transportation.
    - Action: Initiate a public education campaign to foster broad understanding of the current infrastructure funding problem, proposed solutions, intended methods of implementation, and anticipated impacts on individuals.
    - Action: Preserve the integrity of the Highway Trust Fund mechanism.

- **Recommendation 3: Establish a national infrastructure financing entity to bring focus, resources, and discipline to the infrastructure investment challenge.**
    - Action: Carefully study and establish explicit goals for a national infrastructure financing entity. Incorporate these goals into the design of a new federal entity.
        - Carefully target federal resources.
        - Establish funding mechanism for the new entity.
        - Structure the program in the most cost-effective manner.
        - Address the role of the new entity vis-à-vis other federal agencies.

I. Background: The Infrastructure Investment Gap—Roots of the Problem

The symptoms of a steady and systemic decline in America's physical infrastructure are clear and expanding. The American Society of Civil Engineers gives the state of infrastructure in the United States an overall grade of D on its most recent report card. The society concluded that the United States needs to invest $2.2 trillion over a five-year period "to bring the nation's infrastructure to a good condition."

- More than 25 percent of the nation's bridges are structurally deficient or functionally obsolete.
- The average U.S. dam is fifty-one years old, and nearly 2,000 "high-hazard" dams are deficient.
- Americans spend an estimated 4 billion hours per year in traffic.
- America's deficient roads cost 14,000 lives annually and cost the economy an estimated $78 billion in wasted time and fuel and $67 billion in repairs and operating costs.
- The cost of aviation delays to the U.S. economy is expected to rise from $9 billion in 2000 to more than $30 billion annually by 2015.
- Three-quarters of the nation's public school buildings fail to meet the basic needs of children.·
- $11 billion is needed annually to replace aging drinking water facilities.
- Development of a "smart grid" for electricity transmission carries with it a $100 billion to $2 trillion price tag, depending on what elements are included in the estimate.

And the list goes on…

According to a recent report unanimously approved by the bipartisan National Surface Transportation Infrastructure Financing Commission, "the roots of our current crisis lie in our failure as a nation to fully understand, and more important, act on the costs of deferred investment … especially in the face of an aging infrastructure, a growing population, and an expanding economy." As an example, real highway spending per mile traveled has fallen by nearly 50 percent since the Highway Trust Fund was established in the late 1950s, and combined highway and transit spending as a share of GDP has fallen by about 25 percent over this same period.

America's infrastructure faces two simultaneous crises that will require sustained strategic investment. First, our infrastructure is aged, crumbling, and poorly maintained. Our transportation infrastructure, for instance, is decades old, and the principal mechanism for funding highway and transit programs—the Highway Trust Fund—is quite literally running on fumes. The Aviation Trust Fund faces similar financial strain. Second, beyond simply maintaining our current infrastructure, the absence of new and rebuilt infrastructure systems will hold the nation back from achieving economic growth, energy independence, enhanced national security, and technological innovation. Potential investments like a

smart grid for energy transmission, for instance, will require substantial investment and reinvestment in our national infrastructure. At the same time, revitalizing the nation's infrastructure can provide the jobs and cross-economy multiplier effect required for sustained growth and improved quality of life.

Adequate investment in infrastructure is stymied in part by public perception and a reticence to financially support infrastructure. As a nation, we fail to grasp the potential benefit of improving our infrastructure and we have come to expect to "get it for free" (consider the often purported choice of toll roads versus "free" roads). In fact, the mainstay funding mechanism for transportation, the federal Highway Trust Fund (and similar mechanisms at the state level) contributes to this attitude by hiding the true costs from the public and disconnecting those costs from reality. Average citizens do not know how much they pay in gasoline taxes, how those funds are expended, and how the actual needs are grossly disproportionate to the amount raised through user fees. Hiding the gasoline tax in the price of gasoline with its daily fluctuations blunts the ability to use the gasoline tax to influence demand. The lack of transparency in the current funding system for transportation has hampered our ability to reinvigorate it when needed. Only when users know —and internalize—the full costs of their use of the system (in the case of transportation, this includes not only the direct costs but also the indirect costs such as greenhouse gas emissions and congestion) will we be in a position to make the case to the nation for paying the full bill.

II. Addressing the Infrastructure Investment Challenge

As complex and expensive as the nation's infrastructure investment challenges are, not addressing these challenges will cost the nation far more—in reduced productivity, lost time, wasted energy resources, diminished safety, and compromised national security. As a nation, we must step up now to address the infrastructure investment challenge before more bridges crumble, more lives are lost, and more precious resources are wasted.

This paper offers several specific recommendations to begin to address the infrastructure investment gap and to put the nation on more sound footing going forward. These high-level recommendations will need to be followed by a host of actions in each infrastructure sector: transportation, energy, schools, hospitals, wastewater treatment and drinking water, and telecommunications. Some of those specifics are beyond the scope of this paper but are essential to making full strides toward reversing the decline in the nation's critical infrastructure and making real progress.

It is important to note that the recommendations addressed in this paper go well beyond the scope of what is being accomplished under the American Recovery and Reinvestment Act (ARRA). The ARRA funds focused on short-term job creation but do not in any way supplant the requirement for long-term and large-scale reinvestment in national infrastructure. Without a long-term approach or a strategic focus on future investments, gains and improvements to infrastructure achieved through the ARRA investments will diminish. Looking at what China has achieved in terms of sustained infrastructure investment, job creation, and productivity, one cannot help but wonder what is possible here. Of course, much about the landscape in China is not transferrable to the United States and China is playing catch-up; nonetheless, for the sheer magnitude and effectiveness of the investment, what has been achieved there should not go unnoticed.

Recommendation 1: Generate a renewed focus on innovation to enhance U.S. competitiveness in the global marketplace and restore a national vision for repairing and caring for our nation's infrastructure.

There are myriad examples of U.S. innovation in the infrastructure investment arena. At the same time, there is a plethora of untapped opportunities to apply such innovation. A small example of the kind of "smart" investment that is needed throughout our infrastructure systems—to both save money and improve performance—is placement of solar panels in highway rights-of-way included as one category of investment in the American Recovery and Reinvestment Act. The conversion of this otherwise unutilized space into a source of renewable energy would benefit surrounding communities. It is this kind of creative thinking and integration that is critical to maximizing the effectiveness of our limited physical and financial resources. Other examples of creative thinking that should be further encouraged include the installation of tubes for fiber optic cables under highway and rail projects where construction is planned or under way. According to Federal Highway Administration estimates, it is ten times as expensive to dig up and repair a road as it is to lay the conduit for fiber optic communications in a place where the road is already being repaired or constructed.

Action: Reinvigorate federal decision making and funding processes with a sense of urgency and incentives for innovation.

Opportunities abound for greater innovation to be applied in the arena of urban regional transportation systems and strategies to address congestion and other obstacles to mobility and accessibility. Equally important is the nation's rural transportation network. It sustains the arteries through which the lifeblood of commerce flows. Innovative ideas, however, must be accompanied by integrated decision making and implementation—across transportation modes, for instance, and even across infrastructure sectors—to achieve the greatest bang for the buck. We must, therefore, provide adequate incentives for such multi-modalism and innovation as part of future federal infrastructure provisions, such as in the upcoming authorization of the federal surface transportation and aviation programs. These programs should be revitalized to seek out and reward innovation and to challenge state, local, and private partners to find and test new creative, cost-effective ways to apply our limited resources in addition to attending to the basic needs of our system. The TIGER grant program, which is authorized and funded under ARRA, should provide some guidance for the implementation of such programs.

Recommendation 2: Establish and/or reinvigorate the user pay framework across the infrastructure investment spectrum.

While the user pay concept is at least partially imbedded throughout the nation's systems for funding infrastructure investment—e.g., electric utility pricing, telecommunications charges, drinking water and wastewater service fees—it is absent or diluted in many areas. For instance, the federal (and state) gas taxes were enacted as indirect user fees for use of the transportation system. The advent of hybrid-electric vehicles and advances in fuel technology, however, are beginning to sever this connection. And the fact that these taxes have not kept pace with mounting needs, including even inflation, means that the connection between system use and cost is severely weakened and will break if nothing is done to adapt to changing circumstances. While some infrastructure investments, such as for national security and public health, warrant the broadest definition of users (i.e., the general public), the majority of infrastructure investment can be structured with a much more direct connection between the cost of that infrastructure and the benefits received by individual system users.

Action: In the short term, consider utilizing existing revenue mechanisms, including an evaluation of modest increases to the federal fuel taxes, to revitalize the user pay construct and address immediate needs.

While there is growing evidence that we must transition away from the fuel tax-based system to a more robust and sustainable direct user charge system for transportation, we cannot afford to wait for this new system to be fully put in place ten years from now. Today's needs are simply too great. Viable options to address these immediate needs also are quite limited.

After substantial study, two Congressional commissions (the National Surface Transportation Infrastructure Financing Commission and the National Surface Transportation Policy and Revenue Study Commission) separately recommended increases to the federal fuel taxes to meet a significant portion of the defined infrastructure investment gap and to adjust the tax rate going forward based on inflation. Other groups have come to similar conclusions.

While the Administration does not support a gas tax increase at this time, we believe all options should be debated and evaluated.

In the near future, with authorization of the federal surface transportation programs, Congress will have to reauthorize the funding mechanism for federal surface transportation investment programs. An increase in the underlying taxes is most likely required simply to maintain current program funding levels. That, however, is not sufficient to address the nation's mounting needs. It is therefore recommended that Congress set these taxes at levels that will *at least* restore the purchasing power of the gas tax to the level of the last time it was increased (1993) and make comparable adjustments to the diesel tax. Such increases would address the current programmatic funding shortfall and close 30 to 40 percent of the identified funding gap, helping to maintain the current physical condition and safety and mobility performance levels of the surface transportation network. It is further recommended that the gas and diesel taxes, once increased, be indexed to inflation to preserve their purchasing power over time. Of course, greater increases would facilitate much-needed additional investment and provide direct returns to the economy. Economic factors, including unemployment and the condition of the financial markets, should be weighed to determine the timing of any such an increases.

For example, a 10-cent increase in the federal gasoline tax, as supported by the National Surface Transportation Infrastructure Financing Commission, would cost individual households approximately $9 per month ($5 per vehicle, half a cent per mile). Coupled with a comparable diesel tax increase of 13 cents per gallon, nearly $18 billion could be raised per year and nearly 500,000 jobs supported (see Exhibit 1, below, for other tax levels and associated impacts). While contemplating a tax increase during the current economic crisis is challenging, doing nothing is potentially crippling. Further, with generated funds returned directly to the economy in the form of infrastructure investment and jobs and with wise investment choices and the associated multiplier effect, the net impact of such increases on individual households is actually positive.

Exhibit 1. Illustrative Revenue-Raising Ability, Job Creation Potential, and Household Impacts of Varying Fuel Tax Increases

Level of Gas Tax Increase (Proportional Diesel Tax Increase)	Annual Infrastructure Investment Achieved (2010 $, billions)*	Estimated Annual Number of Jobs Supported**	Household Impact/ Cost of Gasoline Tax Increase***
5 cents per gallon	$8.8	245,000	$5 per month

(6.6 cents, diesel)			
10 cents per gallon (13.3 cents, diesel)	$17.6	492,000	$9 per month
20 cents per gallon (26.6 cents, diesel)	$35.3	981,000	$18 per month
40 cents per gallon (53.1 cents, diesel)	$70.6	1,963,000	$36 per month
50 cents per gallon (66.4 cents, diesel)	$88.2	2,452,000	$45 per month

* Estimates developed by High Street Consulting Group.
**Jobs estimate based on most recent FHWA estimate of 27,800 "jobs" (person years of work) supported for every $1 billion spent on highways (2007 estimate, including right of way purchase). For the purposes of this illustrative chart, this estimate ignores any distinction between highway and transit investment multipliers and applies the highway estimate to the total.
***Excludes impact of diesel tax increase passed through to consumers of transported goods.

Action: Commence the transition to a new, more direct user charge system for surface transportation.

As noted above, it is imperative that the Highway Trust Fund be returned to its roots—as a user charge mechanism. When the fund was instituted, technology did not exist to create a **direct** charge system (i.e., for direct use of the system in the form of miles driven). Instead, an **indirect** user charge system was put into place, based on gallons of gasoline as a reasonable proxy for miles driven. Looking forward, however, it is time to transition from the now broken indirect user charge system of the gasoline tax to a more robust direct user charge system, commonly referred to as a vehicle miles traveled (VMT) fee system. Congress and the Administration, therefore, should commence the transition to such a system in the next authorization of the federal surface transportation programs (which, due to expire on September 30, 2009, were extended on a short-term basis to mid-December 2009).

This transition process will take some time and will require a comprehensive research and development initiative that includes technology development, pilot programs, and significant work to address public policy concerns. Examples of such concerns include: (1) the cost (and timing) of equipping vehicles with the necessary technology; (2) privacy protections of utilizing such technology; (3) enforcement and collection issues and costs, especially in comparison to the relatively efficient and cost-effective fuel tax collection system of today; and (4) integration with state user fee and revenue collection systems. Addressing these and many other policy issues that have surfaced or will be identified in the future will require time and careful attention. It is therefore imperative that the process be initiated immediately and that serious attention be given to developing and pursuing a national strategic vision for a new direct user-based system.

In the next six to twelve months, Congress and the Administration should conduct research and develop an action plan to be included in the next authorization of the federal surface transportation programs.

This action plan should be as detailed as possible and focus on the advance work necessary to study alternatives and ultimate transition of the nation's surface transportation funding system.

While the exact timing of the ultimate transition remains somewhat in question, consensus is building that it likely can be accomplished in the next ten to fifteen years. The National Surface Transportation Infrastructure Financing Commission, for instance, establishes a goal of 2020 for implementation of a new system. Others set out similar time frames. And all involved in the debate recognize that vehicle and fuel technology innovations that are incidentally critical to addressing policy objectives related to climate change will further limit (or potentially eliminate) the viability of the gasoline tax as the primary revenue source and that these innovations could come much sooner than previously anticipated.

Action: Initiate a public education campaign to foster broad understanding of the current infrastructure funding problem, proposed solutions, intended methods of implementation, and anticipated impacts on individuals.

As noted earlier in this paper, individual citizens know very little about the true nature of our nation's underinvestment in our infrastructure and the impact it has today and on future generations. Further, individual citizens do not have a full understanding of how much they pay in relation to the true full costs of providing that infrastructure. One often hears, for instance, the argument that tolling is double taxation. That, however, suggests that the first type of funding (the gas tax) actually pays for the full cost of needed infrastructure projects. The lack of real information supporting the debate at all levels of government makes what is a difficult choice—to impose additional costs on system users—an impossible choice. The only way to get beyond the very large hurdle is to clearly present the facts to the American people and engage them in the debate over choices.

In the next six to twelve months, Congress and the Administration, along with governors, mayors, and other local elected officials, should initiate public education and outreach programs centered around infrastructure investment, much like is being done today around the issue of health care reform. Without an engaged and informed electorate, our elected officials will not have the support needed to make the very hard choices that are required.

By the end of the first term, the Administration and Congress should have completed more of the technical research that is required to inform policy decisions regarding the transition from the gas tax to the replacement system as the mainstay of transportation infrastructure funding and be in a position to use this research to further support education and outreach materials to engage the public in the ultimate transition, which many experts expect to occur within ten to fifteen years.

Action: Preserve the integrity of the Highway Trust Fund mechanism.

As noted earlier, the Highway Trust Fund has served an important purpose to directly connect costs and benefits in a user pay construct. This premise, however, is being challenged today. Given the Highway Trust Fund's importance as the foundation of the current and potential future user pay system for transportation, it is recommended that steps be taken to preserve the Trust Fund mechanism and take actions to ensure its long-term security and sustainability. This should include preserving the link between direct and indirect user fees and spending upon which the Trust Fund historically has been based as well as continuing efforts to reduce tax evasion, align spending with receipts, and maintain the budgetary firewalls that have in part served to shield long-term infrastructure investment spending from the annual and competitive budgetary process. Historically, the federal surface transportation program has been the only stable source of funding for state transportation investment, providing nearly half of all highway and transit capital investments. Given states' constitutional requirements for balanced budgets,

coupled with reliance on some relatively volatile funding sources such as sales taxes, the federal program helps to provide a critical base funding level that is less subject to fluctuations. This relative certainty needs to be maintained and enhanced.

In the next six to twelve months, as Congress and the Administration engage on the next surface transportation authorization legislation, each should take care to strive to preserve the integrity of the Highway Trust Fund. While, by necessity, General Fund transfers have been utilized to shore up the Trust Fund over the past year, this should not be seen as a harbinger of the future. While there is a strong logic and significant support for General Fund funding for infrastructure investment as part of economic stimulus efforts, in the longer term the underlying principles that led to creation of the Trust Fund should be reaffirmed and the funding and spending mechanisms realigned for the future.

Recommendation 3: Establish a national infrastructure financing entity to bring focus, resources, and discipline to the infrastructure investment challenge.

The President's FY 2010 Budget Proposal and Congress's budget resolution include a down payment on the concept of a national infrastructure financing entity. The President's budget called for $5 billion per year to establish a National Infrastructure Bank, as it has come to be known, and outlined design principles for such an entity, as follows:

> *"The National Infrastructure Bank will invest funds directly into large capital infrastructure projects that promise significant national or regional economic benefits. Federal funds are to be delivered through a variety of credit and grant mechanisms designed to not only provide Federal resources but also attract and coordinate State, local, and private co-investment. The Administration has reserved these funds to ensure adequate resources are available to capitalize the Bank and enable multi-year commitments."*

There are several predecessor and related legislative proposals calling for creation of a national infrastructure financing entity, each with its own twist or focus. While different in their form and function, these proposals generally share the broad objective of increasing infrastructure investment as well as improving project selection across and within individual infrastructure sectors, and thus ensuring the highest and best use of limited resources. Unfortunately, some recent proposals made in the name of an "infrastructure bank" confuse the discussion with other policy objectives. These include recent proposals to funnel significant General Fund resources (through Treasury borrowing) to shore up infrastructure investment and achieve related job creation on a short-term basis but without designated repayment sources or other bank-like structures. These proposals should be evaluated on their own merits and separately from those that embody comprehensive infrastructure bank structures and lending concepts.

While some effectively argue that based on identified *financing* gaps alone, the case has not been made for a national infrastructure bank, it is becoming more evident that the combined value of addressing identified *financing* objectives and bringing focus and discipline to the infrastructure investment process more globally may tip the balance in favor of creating such an institution. Even then, it should be done only with due caution about the problems it should appropriately address.

Action: Carefully study and establish explicit goals for a national infrastructure financing entity. Incorporate these goals into the design of a new federal entity.

In the next six to twelve months, the Administration and Congress should formulate explicit goals for a national infrastructure financing entity and, as warranted, incorporate these goals into the design of a new federal entity. Key questions to consider include:

- Which infrastructure improvements are to be targeted? This includes determining which are nationally significant and warrant direct federal assistance.
- What types of financing assistance are necessary to help accelerate infrastructure investment and, importantly, how would such assistance differ from that already available through governmental programs or private sources? Would such assistance be less expensive or more accessible than the private capital market sources that states and localities rely on every day?
- What will serve as the repayment mechanism for these investments? Specifically, how much of the assistance to be provided would be in the form of grants for non-revenue-producing projects and how much as loans to be repaid from project or other revenue streams? In turn, how would the grant assistance be funded? To the extent that grants are to be made through the bank, will Congress be willing to cede this decision-making authority to an independent body as opposed to through current programs for which Congress has some control?
- How would projects and classes of projects be selected, and how would this be better than under existing programs? Potential prioritization bases include:
    - classification as a high-priority project from a national perspective
    - extent of non-federal project funding leveraged
    - extent of designated revenue streams (projects with designated and reasonably secure revenue streams but without alternative sources of financing could potentially be granted "fast-track" approval)
    - degree of multi-jurisdictional participation
    - extent of multi-modal aspects and degree of cross-modal integration
- How will the bank be capitalized? What is the anticipated federal budgetary impact, and how cost-effective is the proposal compared with existing programs and approaches? What are the long-term federal liabilities associated with the proposal?

To be effective and to justify the creation of a new special-purposes entity, the case should be made that such an approach would provide financing that is otherwise unavailable through existing government programs or the private markets and that it would be more effective than current programs in delivering the financial subsidies.

Specifically, if properly structured, a federal financing entity could serve one or more of the following roles:

- **Provider of leveraged public subsidy** – via lower cost financing and more flexible terms than are available from other sources.
- **Provider of backstop credit support** – in the form of credit enhancement to help projects gain access to private capital markets.
- **Financing pump primer** – by providing small direct funding assistance to major projects of national importance that cannot be fully funded with identified available revenue sources or through expansion of existing federal funding programs, including to help meet relatively risky start-up development costs for which outside financing is often difficult to come by.
- **Catalyst for national investment and state initiatives** – in addition to serving its national purpose. A federal entity could potentially serve as a model for state programs focused on smaller infrastructure investments with more localized benefits (akin to the relationship between the TIFIA program and state-level State Infrastructure Banks). It also could more generally

ensure ongoing focus on the national infrastructure investment challenge and serve as a catalyst for additional investment. While less concrete an objective than some of the financial objectives, this role is at least as important as any of the more technical ones, as evidenced by the positive impact that simply discussing a National Infrastructure Bank has had on the infrastructure funding debate.

In playing any combination of the above roles, a national financing entity could be quite beneficial. It is critical, however, to recognize that such an entity cannot be viewed as a substitute for existing resources but as a supplement to help provide incentives for net new investment by state, local, and private funding partners or to accelerate such investment through flexible lending arrangements. A clear distinction should be drawn between individual projects of national importance and general national needs that may be best addressed at the state or local level (potentially with stepped-up federal support channeled through existing or new programs). Distinctions also should be drawn between short-term needs arising out of recent credit market disruptions and anticipated long-term needs. And, finally and most importantly, any new or expanded financial assistance programs are not to be pursued as “easy” alternatives to addressing the overall infrastructure investment shortfall by generating new revenue. Hard choices need to be made regarding raising taxes, expanding the use of tolling and other user-backed revenue streams, and implementing other new and expanded revenue-raising mechanisms.

Following is a preliminary blueprint for development of a national infrastructure financing entity, assuming the concept passes the general tests outlined above:

(1) **Carefully target federal resources,** including drawing a clear distinction between "projects of national importance" and "important national needs." There clearly are certain infrastructure improvements that are too big (with large spillover benefits) to be easily funded at the local or state level and that are critical to the functioning of the national system (be it energy, transportation, and so on). But for investments that represent important national needs (such as clean drinking water, adequate schools, low-income housing), these investments must be made throughout the country, and individual projects do not in and of themselves represent projects of national significance. Perhaps the amount of funding and the cost-sharing arrangements among levels of government should be reexamined, but in general no single such "project" is more critical to the nation than another. Selecting "winners" of special federal funding through a national infrastructure financing entity for these ubiquitous investments (hundreds or even thousands of similar in nature and scale around the country) risks being ineffective, potentially spreading limited federal resources so thinly around the country as to generate practically zero net investment benefit, and, at the same time, to potentially be quite expensive.

(2) **Establish funding mechanism for the new entity,** acknowledging that many nationally significant investments will be for non-revenue-generating projects or projects that require seed funding in the form of grants (otherwise many would have been funded already). Thus, significant budgetary resources must be identified—whether from the General Fund, existing or new dedicated user charges, or other means. The ultimate funding source(s) for the public subsidy portion, however large that ends up being, should reflect the defined programmatic eligibilities and anticipated beneficiaries.

(3) **Structure the program in the most cost-effective manner,** recognizing that having a federal special-purpose entity raise capital to fund loans through special-purpose borrowing is likely to be costly and potentially unnecessary. Such a structure might make sense if: (a) the entity were not an instrumentality of the federal government and its activities would not be reflected on the

government's balance sheet; and (b) projects being assisted were largely revenue-generating projects that could repay assistance provided on roughly uniform commercial terms (i.e., investment-grade assets that could be pooled and potentially securitized to provide ongoing capital for a revolving fund). Neither is true. If the infrastructure financing entity is a federal entity and its borrowing and spending recorded as federal borrowing and spending, any special-purpose borrowing would be costly and inefficient compared with Treasury general borrowing, which a federal entity can take advantage of and lend to project sponsors at the government's cost of capital (such as through a direct federal credit program like TIFIA). In addition to much cheaper loan rates, a direct federal credit program can easily provide flexible terms that better accommodate the relatively speculative revenue profiles of many user-backed infrastructure projects. To the extent that the national infrastructure financing entity is intended to assist and encourage the financing of large projects backed by tolls or other user revenue streams, it appears evident that a direct federal credit program can provide more assistance faster and cheaper than competing proposals.

(4) Address the role of the new entity vis-à-vis other federal agencies and programs. If the new organization is to provide superior resource allocation, it must be equipped with the expertise and resources necessary to evaluate project proposals and structure and to negotiate funding and financing packages, monitor project development, and (in the case of financing commitments) ensure the receipt of loan payments. The new entity will have to cooperate with and rely on the expertise of many federal agencies to ensure that proposed projects are eligible for assistance and satisfy the many environmental, planning, and other project development processes. Furthermore, the financing entity will have to depend on other federal agencies to help monitor selected projects and ensure that federal requirements are met. Along these lines, the President's proposal for a National Infrastructure Bank, for instance, calls for it to be placed in the U.S. Department of Transportation with its focus initially on transportation infrastructure and later on other infrastructure sectors. Whether part of an existing agency or separately established, the new entity must be carefully structured so it provides a superior funding and financing conduit for major projects and does not become just another bureaucracy that is redundant to (and even competes with) existing programs. Whether the financing entity is housed within an existing entity or chartered as a wholly new one, to be fully effective it must have a significant degree of organizational independence.

Conclusion

The nation finds itself at a crossroads. To help put us back on the path to ensured economic vitality, security, and quality of life, we must reinvest in our physical infrastructure and we must do so at a time that is challenging in so many other ways. This will require stepped-up national leadership, structural reforms, unprecedented innovation, and, perhaps most importantly, collectively facing up to hard choices. As with prior large-scale infrastructure investment initiatives—such as those that resulted in the Interstate Highway System, the Air Traffic Control System, safe drinking water, and access to electricity, schools, and hospitals—taking these actions will pay dividends for generations to come.

Endnotes