MEMO #21

INFRASTRUCTURE:
Building a New Paradigm for Finance and Governance

Mark Pisano and John R. Bartle

There is a growing recognition that the U.S. infrastructure is in a state of disrepair and needs to be fixed. Nationwide, we are spending about $245 billion a year to refurbish and build our infrastructure, two-thirds local and state funded and one-third federally funded.[69] Estimates of needed investment to deal with our backlog and to make the necessary investments to support our growth are well over $1 trillion annually-a fourfold increase.[70]

The growth in demand for all modes of transportation has significantly exceeded population expansion. Pressure on the highway transportation system has increased as households acquire more cars and travel more miles.[71] Americans love to travel and air passenger traffic continues to grow. And, as online commerce increases, there is continued high growth in freight transportation. In many places, failure to address these changes has led to severe ground and air traffic congestion and gridlock during rush hours and to long delays in freight movement. There needs to be a new strategy to develop the right infrastructure in the right places.

There is little disagreement, nor are there partisan differences, on the need to regenerate our nation's infrastructure, and capture the economic and job creating benefits from addressing this national need. Both presidential candidates had infrastructure investment on their campaign agendas, but did not begin to address the infrastructure backlog, let alone provide for the future. President –elect Trump declared that renewing infrastructure would be an early and important part of his administration.

What has not yet been clarified is how to do it? The problem is so massive and the needs are so great that existing legislation such as the recently passed surface transportation act did very little to address the problem. What is needed is a new partnership among the levels of government, with the private sector, and with those who use and benefit from these investments, to make it happen. There is not a policy difference on the need for infrastructure but rather a governance issue (how do we organize ourselves to get it accomplished?); and a funding challenge with all levels of government facing fiscal constraints.

Currently, the role of the federal government in infrastructure investment is highly fragmented across different programs, agencies and congressional committees, complicating implementation and integration at the local and state delivery points. We are suggesting a new paradigm that would replace

[69] Richard H. Mattoon, "Measuring and Financing Infrastructure Investments," Chicago Fed Letter, Federal Reserve Bank of Chicago, 2015. https://www.chicagofed.org/events/2014/infrastructure-economic-growth-measuring
[70] "Report Card for Americas Infrastructure," American Society of Civil Engineers, 2015. http://www.infrastructurereportcard.org/economic-impact/
[71] U.S. Department of Transportation, 2010. *Highway Statistics*, Washington DC.

this fragmented approach to our infrastructure. Infrastructure includes every form of investment in the built environment: utilities-energy, water, and communication, transportation, environmental mitigation, parks and open space- which enables economic development and wealth creation which can in return generate revenues that can fund the investment. This memo to national leaders proposes what the federal role could do in this initiative, in partnership with other levels of government, and it suggests how to undertake such a massive effort with limited existing public revenues at all levels of government.

A New Paradigm to Renew the Nation's Infrastructure

The key to this new paradigm is organizing the levels of government in a new partnership to capture all the revenues that infrastructure creates and using these funding streams to repay private, public, and pension funds debt and equity loans that finance these investments. Users of infrastructure pay user fees that also can be used. Those that benefit from increased property and economic development values can also participate in providing funding to pay for these investments. But we are not organized to capture these funding streams and use them to pay back loans and debt. We implement infrastructure in a fragmented and piecemeal way with fragmented programs and overlapping federal and state requirements and regulatory overlays that preclude the capturing of these revenue streams. To address our infrastructure crisis we must first solve our governance problem by first creating local/regional capacities to capture funding streams, integrating our deployment of infrastructure through federal, state, and local partnerships and creating new relationships with the capital market that define this new paradigm.

- **Capturing multiple revenue streams**

  The first component of the new paradigm addresses the funding of infrastructure investments. Traditional funding sources will not be sufficient to meet the burgeoning demand for new investment without tapping private capital and the beneficiaries of an improved infrastructure. The paradigm we are suggesting creates economic opportunities that can help pay for its costs. For example, owners of real estate benefit from a sound infrastructure and it is reasonable to ask those who profit from increased property values to help pay for infrastructure improvements. Users of infrastructure, such as consumers of transportation and water, etc., should be expected to pay for the costs of these investments, reflecting the economic value they gain. Governance arrangements to collect and integrate these multiple funding streams are the first and most fundamental element of this new paradigm. Additionally this step will create a pipeline of investment opportunities that is lacking today.

- **New partnership with the finance community**

  The new paradigm would tap private financing from businesses, and pension funds, among other sources, to meet the nation's unfunded infrastructure needs. There are large quantities of capital in the market place looking for investment opportunities. Infrastructure investments can also appeal to long term investors such as pension funds, especially in the current period of low and uncertain returns on capital. To make these transactions work the market risks that are associated with this portfolio of investments needs to be addressed in the governance design. This method of financing was the norm historically but market failure was among the reasons we changed to the current finance structure for infrastructure-mainly tax financing on a pay as you

go basis. Federal participation in the portfolio could greatly assist in the marketability of the investment portfolio and would reduce overall borrowing costs.

- **Applying business principles**

  Tapping into private financing calls for governments to apply business principles in making infrastructure investment decisions. Investment and plans for infrastructure and development which traditionally include local policy objectives, including environment and equity, will need to develop business plans that should lay out revenue streams that can be amortized into securities brought to market to access private capital and pension funds. Associated with each plan should be investment and revenue schedules that can be used to determine the risk level and to calculate return on investment

- **Federal program integration**

  The new paradigm calls for a more integrated set of federal program initiatives to drive the major infrastructure priorities for the nation. The current federal approach is characterized by many fragmented programs, within and across agencies, featuring different financing rules, permitting procedures and administrative processes.

  State and local governments provide a major share of funding for infrastructure and typically bear the responsibility for designing and operating infrastructure facilities and assets. Many of these investments decisions involve Federal facilities, land, and projects with grants that have significant national interests. Currently there is no Congressional or Executive process for spelling out clear national policies and priorities for these investments; nor is there a partnership between the levels of government in first making these investment decisions, integrating investment programs and the development of funding streams to implement them. National infrastructure investments also create state and local benefits that are not captured. Given the funding constraints at the national level, the federal government often fails to make needed investments. The new paradigm calls for strengthened partnerships across our intergovernmental system to ensure that infrastructure reflects common goals and standards, jointly decided by these intergovernmental partners including the federal government. This enables the Federal government to become an investment partner with state, regional and local partners and to expand the investment levels in Infrastructure. This partnership also improves, the nature, location and function of infrastructure to reflect state and local preferences as well as national priorities.

Encourage Consumer Driven Investment Strategies by State and Local Leaders

Many experiments at the subnational level of government that have been successfully implemented throughout the country can be models for the new paradigm on the federal level. Examples include (1) the Alameda Corridor, a goods movement project in the Los Angeles region, (2) the extension of the Silver Line transit line to Dulles Airport in Virginia, (3) the new border crossing at Otay Mesa between San Diego and Mexico, (4) freeway links in Texas and southern California, (5) Refurbishing the Tappan Zee Bridge in New York and (6) public space acquisition programs linked to large investment programs that raised billions of dollars. The commonality among these projects is that they were implemented as

a result of partnerships among non-profit organizations, private sector businesses and various levels of government relying on a benefit received pay structure.

Several states have created institutions that have authority to collect payments from users and landowners. For example, last year California enacted an Enhanced Infrastructure Financing District statute. The boards of these Districts are independent governmental entities called Public Finance Authorities (PFAs). They have authority to collect revenues from fees, tolls, assessments on property, value capture, and to develop anticipation payment schedules from existing state and federal programs. This legislation was modeled after the approach used to build, on time and within budget, the largest infrastructure project in the world, the $26 Billion Crossrail transit project in London. Transport for London (TFL) was the Finance Authority; the source of funds was 1/3-user fees, 1/3 land surcharges, and 1/3 national government. [72]

PFAs may also rely on subventions from constituent governments using current or new funding streams from long term contracts, development agreements, public-private partnerships, tax credits, grants, and loans from states and the federal government. The major difference from current practice is the development of PFA business plans that calculate the return on investment before projects are started. The coupling of existing programs with business plan funding can increase the level of funding to meet our national needs.

The PFA Districts can be of any size and can cross jurisdictional boundaries. They can issue securities with up to 45-year payback schedules. Maryland, Virginia, Texas and Washington and several other states have enacted similar approaches, all with the objective of developing new funding sources for infrastructure.

Envisioned in the PFA funding structure, in public transit, transit-oriented development (TOD) organizations work to capture value created by new transit stops to help finance the project. This is what the Cross-rail project in London did and is now being untaken throughout the United States. These approaches are still emergent; but acceleration of this successful practice shows that this new paradigm works. They are also more flexible and can be customized to the project and thus bring forward more local and private support and relieve the demand on government.

Coordinate Existing Federal Legislative Credit Enhancement Programs

Adopting a new paradigm will require leaders at all levels of government to rethink existing programs, which already began by Congressional action. The recently enacted Fixing America's Surface Transportation Act (FAST Act) and the Administration's 2017 Budget Infrastructure Proposal: Expanding Public Private Collaboration on Infrastructure are steps in this direction. These recent actions have started to define the new paradigm. But this is only the beginning.

Federal participation in the portfolio could greatly assist in the marketability of the investment portfolio and would reduce borrowing cost. Congress has developed an extensive list of programs, each with their own provisions and requirements. But Congress took a step toward a new approach with the

---

[72] Mark Pisano, "Innovations in Planning and Funding Infrastructure Renewal: The London Experiment," *Innovations in the Public and Non-profit Sector,* Edited by Patria de Lancer Jules and Ed Gibson, (Rutledge Press, New York, 2016). Pg. 129-146.

establishment of the Bureau of Innovative Finance in the recently enacted FAST Act. The purpose of the Bureau is to co-ordinate the multiple credit enhancement programs in transportation.

Together there are ten credit enhancement programs and four Department Infrastructure Finance Centers covering different segments of infrastructure. Some are program-specific and preclude participation in integrated investment strategies. Each investment assistance program has its own set of requirements and eligibility provisions. Further complicating the application of these investment assists is that they are derived from legislation from separate congressional committees. To enhance integration and usefulness of these provisions, mechanisms are needed to encourage integration of the federal tools so that a common platform is developed. A strategy to integrate these multiple instruments so that they can be useful to state and local partners is an essential first step. This process would not only help accelerate state and local processes but would also increase transparency and accountability of the investment decisions.

Ultimately, the key component of a reformed federal public-private strategy is to promote rigorous cost-benefit analysis to improve investment decisions and determine if projects are viable in meeting public policy objects and are fundable. Once projects are shown to be viable, they will attract investment and can identify revenue streams which can be amortized into securities and brought to market to access private capital and pension funds. Associated with each plan are investment and revenue schedules from which potential investors will determine the risk level and interest calculations.

The objective of federal participation is not to develop a backstop approach in the event of market failure, but to lower interest rates and to improve management and efficiencies of the investments, thereby reducing market risks. One strategy to do this is to diversify funding streams in the business plan, spreading risks over different program areas. The strategy of multiple funding streams is an often-used approach to reduce risk in the financial world. Another is to increase the diversity of the purchasers of the securities--including Federal participation facilitated by integrating the Federal credit enhancement programs that are sufficiently capitalized.

The early action program of the new administration and Congress, should involve streamlining the application processes for grant and low-cost financing (TIFIA, WIFIA, RIF) to the point where state/local public sponsors are clamoring for these dollars and Congress will increase the authorization levels of all the programs. Recently, Congress reduced the authorization level of TIFIA because of lack of utilization.

Create a National Fund to Support Consumer Driven Investment Strategies

The integrated credit enhancement programs need to be capitalized at a sufficient level to fully support the regeneration and development that will meet the needs of the country, essentially increasing funding four- fold to address the magnitude of our problem. President-elect Trump outlined that new revenues would be used to leverage finance authorities by attracting new private infrastructure investments through a deficit-neutral system of infrastructure tax credits. The precise mechanism needs to be designed in conjunction with the repatriation and tax reforms that are also under discussion as early actions in the transition. The approach would capitalize and assist in integrating the credit enhancement approach described above.

The administration of this fund in partnership with state and local funding authorities could leverage ten dollars of finance for every dollar of federal participation. When the (OIJ) funds are coupled with existing revenues from the existing intergovernmental funding programs, the amount is sufficient to meet our national needs. The ROI decision-making approach and market risk assessment would improve project selection and project management and would also improve the marketability of state and local securities. The partnership among the levels of government could facilitate the co-ordination needed for inter-state issues.

An important economic implication pointed out by a recent International Monetary Fund Report is that using debt financing in this period of slow economic growth and low interest rates has a substantial increase in the economic multiplier effect of infrastructure investments on economic growth.[73] Implemented correctly the larger multiplier from a national infrastructure regeneration will serve as the stimulus program for our slow growing economy. With the higher level of growth additional tax revenues will be generated, augmenting revenue shortages at all levels of government. This reinforces the attractiveness using debt financing as opposed to our traditional pay as you go approach to fund our public infrastructure.

Coordinate Standards and Policies with Local Investment Programs

Over time, laws have been enacted to implement national policies in environmental protection, safety and labor protection. Implementation of this regulatory system has been built around federal grants to state and local governments that helped to offset the cost and mediate differences. Considerable fragmentation and delays are built into the current program structure, reflected in the multiple permits that projects must obtain before construction can begin. The Obama Administration began efforts to untangle the 35 different permitting authorities that existed across 18 agencies. This included creating a permitting council to encourage concurrent rather than sequential reviews, reducing the timeline for replacing the Tappen Zee bridge in New York by two to three years.[74]

The FAST Act institutionalized this Council by authorizing funding for staff and a monitoring dashboard for federally funded projects. The Federal Permitting Improvement Council was tasked with creating a streamlining process that will employ best practices that can be used to initiate this process. This includes practices such as: collapsing federal and state processes: concurrent reviews, limiting the time of legal challenges; dashboards that will track schedules. Eligibility for federal credit enhancement funds could be used to incentivize and accelerate the implementation of these reforms. Additionally, the use of the business plan approach to obtaining financing, where ROI calculations are improved by reducing delays will create incentives to resolve regulatory delay

Change Policies in Budget Scoring, Procurement, Federal Asset Management and Acquisition Regulations

The federal government owns vast amounts of real estate and owns and operates critical components of the aviation and navigation systems (such as the FAA's NextGen system, Corps of Engineers and Bureau of Reclamation locks and dams, etc.) Many of these assets need more investment yet there are

[73] Abdul Abiad, David Furceri, and Petia Topalova, IMF Survey: The Time Is Right for an Infrastructure Push, IMF News, September 30, 2014. http://www.imf.org/en/News/Articles/2015/09/28/04/53/sores093014a
[74] John Kamensky, "It Shouldn't Take Feds 6 Years to Approve Major Infrastructure Projects" , *Government Executive,* October 31, 2016

impediments and obstacles that need to be addressed. For example, Congressional budget scoring that requires capital to be scored in the year that a project is authorized promotes accountability to the Congress but it makes it difficult for agencies to find sufficient funds from increasingly limited discretionary budgets. Alternatives pursued by some agencies including building up investment accounts that can be used to satisfy needed infrastructure investment.

Other provisions preclude the Corps of Engineers, the FAA and other Federal agencies from participation in regional and local financial partnerships. Procurement rules limit use of new technologies that could materially assist infrastructure projects. The new paradigm, can create new opportunities for changing procurement provisions by selecting investment strategies on the basis of outcomes instead of what was done in the past, bringing provisioning of public goods into the 21st century. Changing legislative and administrative rules in each of these areas would enable the Federal assets and resources to act as partners in investment strategies rather than separate actions. This partnership arrangement would bring the collective funding resources of all levels of government together; thereby marshaling the resources of the country to meet all the goals and objectives that today are not being met.

Redesign Grant Programs to Encourage Better Pricing and Preserve Fixed Assets

A key component of the infrastructure deficit is inadequate maintenance funding. If policies ignore the operation and maintenance costs of assets, the likely outcome is asset deterioration and potential failure.[75] Better pricing could help address the maintenance deficit by building long-term operation, maintenance, and repair costs into fees paid by users as a part of a business plan that would also identify revenue needs for the assets. This can be incentivized by federal grant policies that embrace sound investment strategies to encourage that pricing be based on the full lifecycle costs of the infrastructure. A more targeted approach to infrastructure investment funded by well-designed user charges will grow capacity where needed, charge those who benefit from the services, and ration capacity efficiently.

While user fees encounter some political opposition and can be a burden on lower-income people, in general they offer a significant opportunity. For highway travel, improved technology has significantly reduced the costs of toll collection and the delays for motorists. These fees can be much more precisely calibrated to the costs of supporting the services. They can be part of a strategy for reducing congestion, as they provide information to guide where capacity does and does not need to increase. They also create a revenue stream that can support debt issuance allowing for development and system expansion as needed. Similarly, aviation fees should be more closely tied to the costs imposed on airports and the Federal Aviation Administration for air traffic control, security, takeoffs and landings, and international flights. Congestion fees on planes that takeoff and land during rush hour can also optimize airspace. When done right, many costs can be covered, putting the trust funds on a more sustainable path.

Conclusion

The premise of this Memo to National Leaders is that we can address the infrastructure crisis in America if we undertake the governance changes that are preventing us from: capturing the benefits that infrastructure and coordinated economic and environmental enhancements create; undertaking a new

---

[75] Michael A. Pagano, "Funding and Investing in Infrastructure," Urban Institute, December 2011.

intergovernmental partnership; and formulating a new way of working with private and non-profit sectors. The early action items of these governance changes are:

- Encourage all states, regions and local governments to organize themselves to capture the wealth and revenue streams that are created with this approach;
- Use fees and value capture from the beneficial uses of infrastructure and economic development to complement existing tax revenues;
- Redesign federal participation in the intergovernmental system so that they also participate in the wealth creation process;
- Streamline and integrate federal programs, existing funding, federal lands and assets into these new intergovernmental partnerships;
- Undertake federal budget reforms, procurement and other federal processes that hamper progress in meeting infrastructure needs;
- Establish clear and integrated national priorities to assist clarifying federal participation; and
- Capitalize the credit enhancement process with revenue neutral tax credit proceeds from the tax reform and repatriation deliberations to set off the cycle of investment.