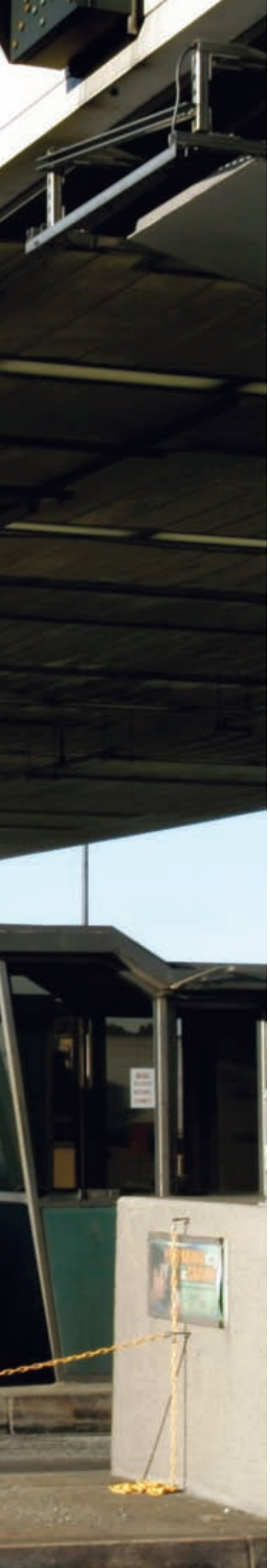


4 Paying the Way

The infrastructure funding crunch arrives at a critically difficult time for the United States. "We've been living off past prosperity and haven't had to pay for anything new for 30 or 40 years—but now we do." When greater needs slam into depleted resources, something has to give. Either you get more creative, pragmatic, and efficient, or you fall further behind with potentially dire consequences—compromised productivity and lowered quality of life in the form of greater congestion and various systemic breakdowns. Simply put, "If we're working with less than we need, we've got to invest it better."

Policy Shifts

As the gap between available monies and infrastructure needs grows, Congress gets mired in ongoing federal deficit cutting, and stimulus money runs out, the infrastructure funding burden is increasingly shifting to states and local governments. State and local leaders are challenged to think in new ways about how to plan and fund the infrastructure that will keep regions economically competitive.

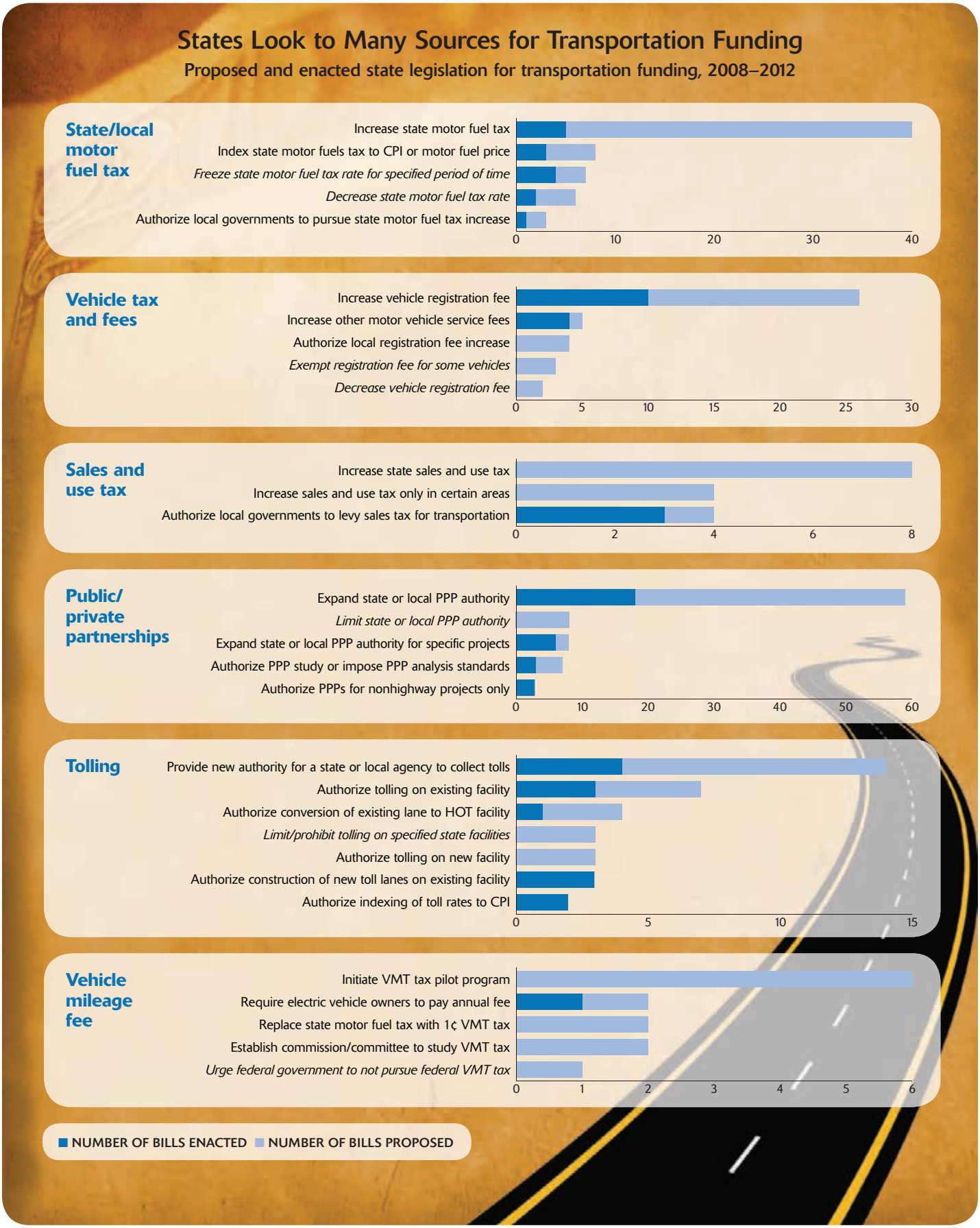
Time for Change

For starters, the country must "change how we make decisions." Unlike many of its global competitors, which retain more centralized control and attempt to implement national plans, the U.S. federal system defers most infrastructure planning to state and local governments. Deeply embedded in the constitutional separation of powers, the ground-up approach can lead to disconnected projects. Little chance of near-term

Cars drive through toll booths on the New Jersey Turnpike in Woodbridge, New Jersey. *(Mike Derer/ Associated Press)*

States Look to Many Sources for Transportation Funding

Proposed and enacted state legislation for transportation funding, 2008–2012



Source: Texas Transportation Institute.
Notes: Italics indicate state legislation to freeze or reduce transportation revenues. VMT = vehicle-miles traveled.

change exists; a U.S. Infrastructure Bank, modeled on Europe's, which could have helped identify and finance merit-based projects meeting national goals, is stalled in Congress.

Despite all "the less than optimum" hurdles and "partisan rancor," however, interviewees sense the first small signs of possible "transformative change" as infrastructure initiatives look more promising to more leaders from both parties as a way to help remedy the sputtering economy and position the country for future growth.

Not Counting on the Feds

Beginning three decades ago, the federal government began deemphasizing new project infrastructure funding after a spending spree that built some of the world's most modern transportation networks, including 50,000 miles of interstate highways, other roads, sewer treatment plants, and water lines across the country. When completed, responsibility to maintain these projects belonged to states and local governments, which seemed manageable at the time because new systems need less money. But now costs steadily mount as aging systems require refurbishment or replacement, and Washington shows no inclination to increase its share of the cost load. "We're in an era of self-help where you can't depend on federal handouts to get by."

Tax-allergic federal legislators last raised the federal gas tax in 1993, while higher fuel efficiency standards further stanch growth in gas tax revenues. Consequently, the country's Highway Trust Fund—the mainstay for both road and transit projects—is running short of cash. Up to this point, Congress has found ways to top off the trust fund with general revenues, maintaining federal spending levels, but growing controversy over these repeated bailouts translates into declining federal support for state and city infrastructure programs.

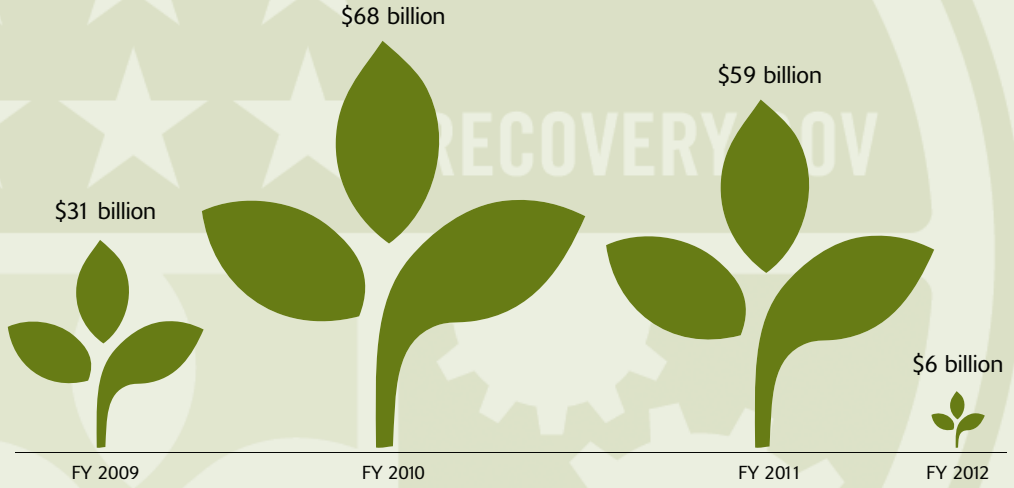
The trust fund breakdown occurs just as local leaders struggle with their own budget red ink, straining even to fund necessary repaving or fix-it-first refurbishments—now they must bankroll major projects like light-rail lines or highway extensions without as much federal help. State and local governments look to a variety of sources, including state gas tax hikes, user fees, and ballot measures, to build the infrastructure they need.

Stimulus Runs Dry

A favorite punching bag for deficit cutters, stimulus funding actually saved the day for many state and local agencies. Some states, like Florida—

Little Recovery Act Funding Will Be Available after FY 2011

Recovery Act Funds, 2009–2011



Source: Center on Budget and Policy Priorities.
Note: FY = fiscal year.

which had 14 shovel-ready transportation projects identified in its pipeline—scored major wins. They could execute on major initiatives that otherwise would have been impossible to complete—"stimulus had a significant impact on addressing existing congestion and network gaps, and helping accommodate the significant growth expected in these situations." But now stimulus allocations tap out, Congress will not re-up, and states must pick up the slack, hoping for upticks in tax revenues as the economy improves.

Ending Competition

With the onus on states and cities to be smarter, regions would be well served to work together to build the development and infrastructure they need, concentrating on projects that will deliver the greatest economic performance and long-term benefits. "It's problem solving at the grass roots, figuring it out by ourselves."

Ad hoc project funding, compartmentalized planning, and competition among neighboring jurisdictions have always been counterproductive—now they are totally unaffordable. "Business as usual no longer works" in a global economy. Metropolitan areas will learn to profit from intergovernmental collaboration and coordination or suffer ruinous consequences from their real competitors, who are overseas, not in adjacent counties.

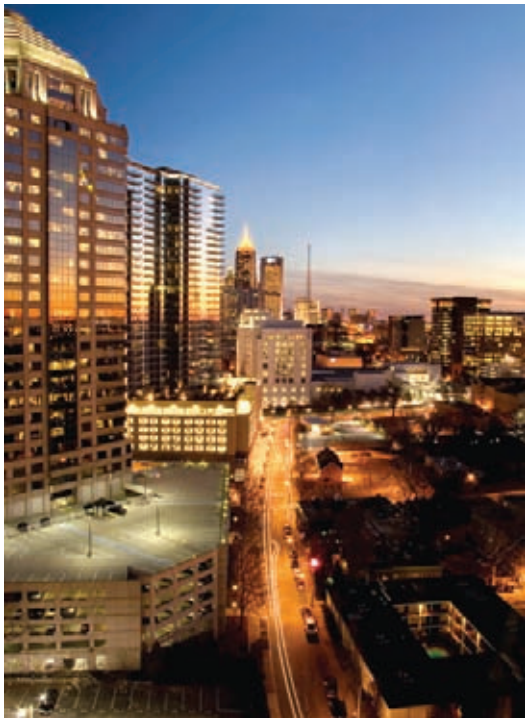
Regional and national policy makers would also be well served to make sure that core cities remain strong and that the nation's core economic drivers—the global gateway cities whose airports and ports sit along international commerce pathways—are building the infrastructure that will position them for the future.

Multiple Benefits

Officials would be wise to broaden their metrics beyond traditional transportation goals involving speed, safety, and mobility to include environmental, housing, and economic development measurements—"we need to attain multiple benefits from every dollar spent."

That means investing in transportation and related housing solutions that enable greater convenience, reduce car dependency and congestion, and permit more efficient, cost-effective lifestyles. In turn, building and maintaining systems that support more people and businesses in denser land use configurations can help boost efficiencies and economic returns.

Power and water-related infrastructure investments must also include lower-cost conservation and sustainability initiatives—smart metering, green roofs, tree planting, water recycling, and stormwater-retention technologies.



Atlanta's July 2012 transportation referendum could direct additional revenues to transportation.
(Scott Moore 2012/Getty Images)

Raising Money the Local Way

Sobriety takes hold; states and local governments must regain their bearings and focus on what can be done until outlooks improve—"that may be four or five years, probably longer." They either raise sales or gas taxes to support bond issues, switch to more user fees, or most likely adopt some combination, while cutting back services. And they consider more PPPs. When the going gets tough, "they'll be more likely to do whatever it takes."

TIFIA Push

Federal-level action is not totally absent. But even the few moves being seriously contemplated—such as a major expansion of the federal Transportation Infrastructure Finance and Innovation Act (TIFIA)—are designed to leverage local sources. TIFIA is a federal program that can draw more private investment into local projects, augmenting states' and cities' spending power. "It's the federal government's way of providing greater flexibility for obtaining private financing, while putting fewer dollars into the system." TIFIA helps by providing credit assistance and reducing financing risk, including interest rate protection, for local governments and private partners in PPP transactions.

Each federal dollar under TIFIA can provide approximately $10 in credit assistance and potentially leverages $30 in infrastructure investment for local project funding, not exceeding 33 percent of total eligible project costs. With relatively minimal impact on federal deficit calculations, TIFIA offers a welcome policy prescription in debt-ridden times and could help ignite slow-to-evolve PPP procurement in the United States. TIFIA can apply to a wide range of major project initiatives from highways, mass transit, and passenger rail to freight rail and port facilities.

Toll Time

The rush to raise or impose new highway tolls appears to grow as state and local officials more willingly advance into once uncomfortable decision-making territory. Driver wrath is muted by state-of-the-art electronic technologies that streamline toll implementation and reduce labor costs (no need for toll takers)—overhead gantries with easy pass and license plate tracking systems eliminate the need for traditional stop-and-pay barriers, which can slow traffic flows, increase the incidence of accidents, and raise driver blood pressures. The whole process is less noticeable and less irksome; user fee charges can get lumped in with monthly charge card billing, easing the apparent effect on drivers.

Even though tolling can be regressive, hitting lower-income drivers hard especially when they have few or no mass transit alternatives, many drivers are slowly accepting the increases or changing driving patterns to start using mass transit where it is available. They come to realize the charges are necessary for maintenance and building new systems. "There's a connect-the-dots aspect to user fees making them more palatable than paying taxes where you're not sure how the taxes are being used."

SR 520, a floating bridge in Seattle, is being replaced. A toll instituted in December 2011 is generating funding for construction of the new bridge, shown here in a rendering. *(Image courtesy of Washington State Department of Transportation)*

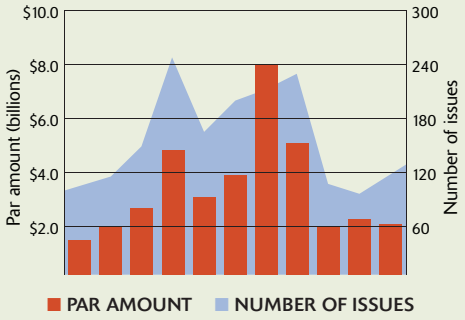
Tolls can encourage more efficient use of facilities. Traffic flows eased noticeably on roads leading into the State Route (SR) 520 bridge in Seattle after new tolls were installed.

Despite back-and-forth in Congress about the expansion of tolling on federal highways, local toll activity is strong. Toll action across the country includes the following:

- California, Georgia, Illinois, Texas, and Virginia, among other states, ramp up plans to add more HOT lanes. Any road extensions or lane additions come with toll features to pay for them. "There's no way you build a new road without tolls."
- Already featuring more toll roads than any other state, Florida plans a $300 million road-widening project east of Jacksonville that will create a new tolled highway. Florida also moves to a statewide all-electronic transponder system, which should facilitate planned tolling on additional roads and lanes.
- Pennsylvania raised the toll rate along its east–west turnpike to 8.5 cents per mile, the highest in the nation among grandfathered interstate toll roads. Since 2007, the turnpike tolls have provided the state more than $3 billion for road and bridge repair work. Next door, New Jersey will increase tolls on its turnpike and the heavily traveled Garden State Parkway by more than 50 percent over the next three years.
- Cash tolls on bridge and tunnel crossings from New Jersey into New York City were hiked late in 2011 from an already stiff $8 to a swallow-hard $12 per ride with increases slated to $15 by 2015. Toll revenues help pay for a raft of necessary refurbishment projects as well as construction of One World Trade Center (the replacement for the Twin Towers).
- Major toll increases appear in store for the deteriorating Tappan Zee Bridge across the Hudson River in New York to help pay for a new span.
- Maryland doubles tolls on some highways and has increased the fee for the Chesapeake Bay Bridge from $2.50 to $4. The long-awaited Intercounty Connector opened in 2011, linking the state's Washington, D.C., suburbs. Variably priced tolls are collected electronically at highway speeds.
- The SR 520 bridge linking Seattle to its eastern suburbs adds variably priced tolls, ranging up to $3.50 a crossing, depending on time of day.

Tax Increment Financing Activity Has Slowed Significantly Since the Recession

Annual U.S. TIF issuance, 2000–2010



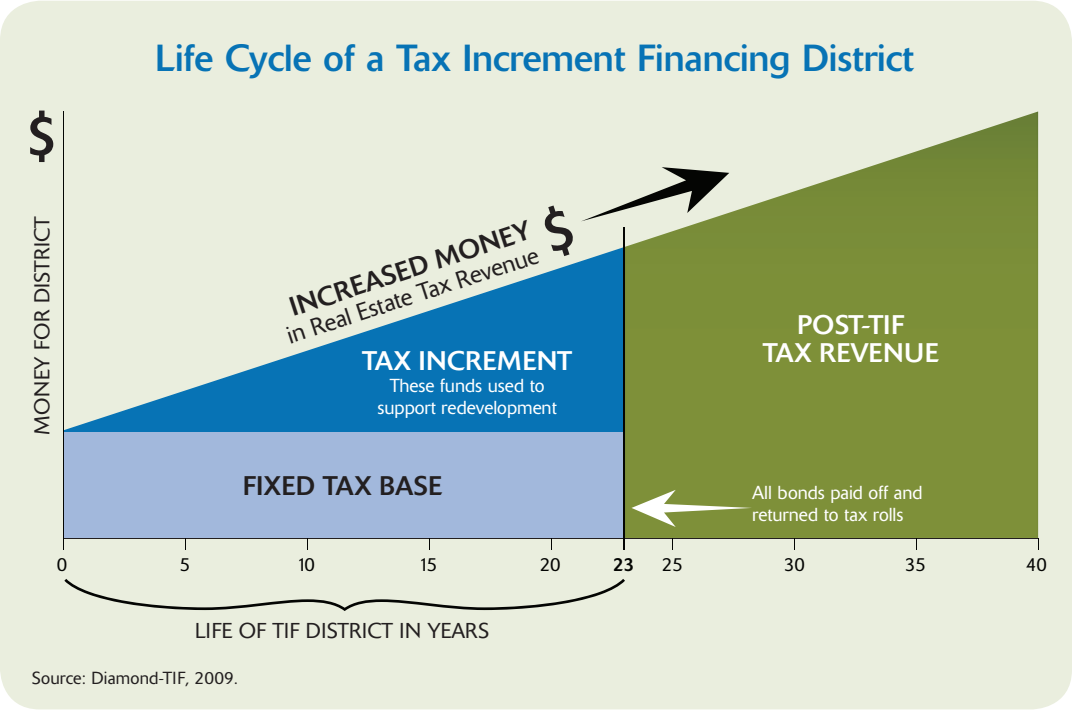
Source: U.S. Public Interest Research Group, 2011.

Note: Par amount is the amount that will be paid to the investors over the term of the TIF bond.

New Gas Taxes and Land Sales

Over the past year, more than a dozen states have raised fuel taxes, another potentially politically charged move. State and local officials find some cover in highly volatile gas pump prices; drivers have become inured to sudden price hikes and may not factor in a few additional tax cents to the gallon. More states likely will follow suit on such tax hikes, given relatively tempered driver reactions and overriding funding needs. Congress also might take note: maybe the public could handle a gas tax infusion to help suture the ruptured Highway Trust Fund.

Cities step up one-off sales of underused sites—like the rail yards on Manhattan's West Side—to raise dollars from developers for transit projects and other priorities. But local governments have just so much prime acreage available to fetch significant proceeds: "These are one-time harvests; you can't grow these crops next year."



Source: Diamond-TIF, 2009.

Tax Increment Financing and Special Assessment Districts

State officials are thinking more boldly and creatively about other funding strategies as well. Special assessment districts—where property owners are charged additional taxes that support infrastructure projects—can channel resources to transit and other infrastructure projects. Special assessments are a key component of the local funding for the Silver Line heavy-rail expansion to Dulles International Airport in Virginia.

Tax increment financing (TIF) is a traditional infrastructure financing tool that—despite a falloff in recent issuances—still shows promise. In a TIF district, the increase in taxes (the tax increment) that results from new development spurred by infrastructure improvements is used to capitalize the bonds that pay for the infrastructure investments. Traditionally, TIF districts have been used to aid struggling neighborhoods. New applications are seeking to extend TIF-style financing across multiple districts and communities and for new kinds of projects, including transit. For example, jurisdictions in the Dallas/Fort Worth metroplex are hoping that TIF will help build the Cottonbelt Line, but issues of phasing and market strength will need to be resolved.

Public/Private Partnerships

Properly framed, PPPs should "not be viewed in any way as privatizations of public assets." Rather, PPP structures can give "government greater continuous leverage over the private sector than through traditional procurement." They become more rationally "understood as a tool in the procurement tool box," which can help realize development and operating efficiencies, achieve proper risk transfers that protect taxpayers, and enable more cost-effective financing for new projects. "We're still in the learning curve process, there's more receptivity, but we're not yet at a tipping point."

PPP approaches are being applied to water assets and, in Europe, even to social infrastructure. The U.S. PPP market in transportation is evolving in fitful steps, but interviewees anticipate overriding government financing needs will force adoption of more PPP transactions and help mainstream structures and practices in coming years. Over the past decade, about half the states have used PPPs to help build nearly 100 transportation projects, totaling approximately $54 billion, but 65 percent of those transactions were confined to just eight states, and 26 states have yet to initiate any PPP construction. In particular,

Ten Metropolitan Areas Account for the Majority of U.S. Transportation PPP Investment Value

Top ten U.S. metro areas for PPPs

Metro area	PPP cumulative value, 1989–2011 (billions of 2011 dollars)	PPP projects (number)	PPP value (share of U.S. total)
Washington-Arlington-Alexandria, DC-VA-MD-WV	$7.2	8	10.8%
Los Angeles-Long Beach-Santa Ana, CA	$6.7	10	10.1%
Dallas-Fort Worth-Arlington, TX	$6.5	4	9.7%
New York-Northern New Jersey-Long Island, NY-NJ-PA	$5.2	5	7.9%
Denver-Aurora-Broomfield, CO	$5.1	6	7.7%
Miami-Fort Lauderdale-Pompano Beach, FL	$3.7	8	5.5%
Seattle-Tacoma-Bellevue, WA	$3.5	4	5.2%
Austin-Round Rock, TX	$3.3	3	5.0%
Salt Lake City, UT	$3.0	2	4.5%
Chicago-Naperville-Joliet, IL-IN-WI	$2.1	1	3.1%
Total	**$46.3**	**51**	**69.5%**

Source: Brookings Institution, 2011.
Note: Includes design-build projects.

Virginia continues to receive high marks from interviewees for its vanguard role in establishing sound PPP legislation.

Entering 2012, only 14 greenfield PPP transportation projects were underway nationwide, but they comprise some the country's biggest infrastructure initiatives, and nearly 50 other PPP projects move forward in the feasibility or procurement stage. "PPPs are still a very small part of the overall pie," says an interviewee, "but if you're a government official there's now enough of a body of work to weigh lessons learned—we're no longer wandering in the wilderness."

Interviewees offer reflections on the evolving PPP marketplace and recent lessons learned:

- **PATCHWORK OF RULES:** Despite progress, many states still have not drawn up procurement rules for PPP projects, and other states separately create a patchwork of codes and regulations, which make the bidding process more costly and onerous, discouraging private participation. "The federal government could be supportive by encouraging more uniform rulemaking at the state level" by helping identify the best procurement rule-making practices." Various federal agencies also have separate PPP procurement regulations, making for additional complications.
- **INSTITUTIONAL CAPACITY:** Many state public works agencies lack the knowledge base to understand and negotiate PPP deals. "The public sector needs to have better resources to manage and structure transactions as well as exercise oversight." Hiring private consultants can be tricky too. To build the needed capacity, the United States could look to successful models in Canada, where provinces such as Ontario have established authorities to concentrate infrastructure management skill sets and oversee PPP procurement across provincial agencies.
- **POLITICAL RISK:** Significant preclosing political risk can make potential investors think twice about getting involved in PPP projects. High-profile PPP project meltdowns—such as the 11th-hour cancellation of the North by Northwest Expressway PPP by the Georgia governor and litigation over the Presidio Parkway in California—undermine private sector confidence.
- **PUBLIC CONTROL:** Drivers are more comfortable with government agencies maintaining control over tolling authority and other user charges. Drivers do not want fee decisions left unilaterally in "for-profit" private sector hands. PPP structures involving tolls work well when private operators are compensated through availability payments—"we'll see a repetition of this concept around the country."

- **THE NEED FOR CHOICE:** Managed toll lanes gain widespread consumer acceptance by providing a choice—either using free lanes or "paying a premium for better performance." Private operators can be properly incentivized to take the risk for optimizing traffic flows (quickly clearing wrecks, preventing slowdowns), which the public will pay for in return for delivering reliable time savings.
- **USING PPP FUNDS:** The public expects any concession proceeds from transactions with private partners to fund long-term infrastructure needs, not short-term fixes for general obligations such as covering pension liabilities or balancing current budgets. Finding ways to accomplish PPP financing for new projects could free up "increasingly limited funds" from traditional state budget sources for critical maintenance needs.
- **SWEET SPOT:** Lack of clarity in the procurement process from jurisdiction to jurisdiction becomes particularly problematic for private operators considering bids on smaller projects: high upfront expenses in the complicated proposal process can turn daunting, deterring participation. The private partner "sweet spot" for bidding on projects ranges from "$500 million to a couple of billion dollars."
- **MEGAPROJECTS:** Complicated megaprojects may cry out for private investment, but these deals remain particularly difficult to put together, given risks involved in multibillion-dollar project costs getting out of control and uncertainty over complex payment calculations—"what will the revenue streams be?" "Private investment will get more involved in undertaking these projects, but the billion dollar question remains exactly how."

Growing Capital Base—Other Funding Sources

As governments around the world scrounge for infrastructure funding, institutional investors and sovereign wealth funds raise capital to fill at least some of the gap. But these investors struggle to get comfortable with various options and hesitate to rush full bore into the sector, especially in the United States where fractious PPP policies throw up hurdles. Studies show dedicated funds for

When completed in 2012, Virginia's Interstate 495 Express Lanes project, a PPP among the Virginia Department of Transportation, Fluor, and Transurban, will add four new high-occupancy toll lanes—two in each direction—along the Capital Beltway. *(Photo courtesy of Transurban-Fluor)*

infrastructure have multiplied worldwide by more than fourfold over the past five years from $60 billion in 2006 to $250 billion in 2011.

More than 60 infrastructure funds, including vehicles managed by investment banks and private equity managers, have a leveraged purchasing power of about $625 billion, which could be directed at the U.S. market if suitable investments can match up with risk-return targets.

Sovereign Wealth Funds

Investor profiles are changing, dominated by sovereign wealth money from Pacific Rim countries including China, Korea, and Australia. China in particular is emerging as an overseas infrastructure investment powerhouse, building projects throughout the world. China's aggressive construction of roads, bridges, and rail projects in Africa—part of a bid to gain access to rich stores of natural resources—has the potential to transform the continent.

Sidestepping investment manager fees, the cash-flush sovereign funds team up directly as capital partners with engineering-concession companies, which are happy to reduce equity contributions and transform into more full-fledged operating partners. These public companies no longer can avail themselves of ready leverage in the capital markets, and they have less incentive to invest more of their own money since they are now more likely to get penalized by shareholders for greater exposure.

Macquarie and Goldman Sachs Are Largest Infrastructure Investors

Top investors in the infrastructure asset class, 2011

Rank	Name of investor	Five-year capital creation total ($bn)
1	Macquarie Group	$31.83
2	Goldman Sachs	$10.72
3	Canada Pension Plan Investment Board	$9.97
4	Ferrovial	$9.42
5	APG Asset Management	$7.43
6	Alinda Capital Partners	$7.10
7	Energy Capital Partners	$7.04
8	Brookfield Asset Management	$6.26
9	QIC	$6.24
10	La Caisse de dépôt et placement du Québec	$5.92

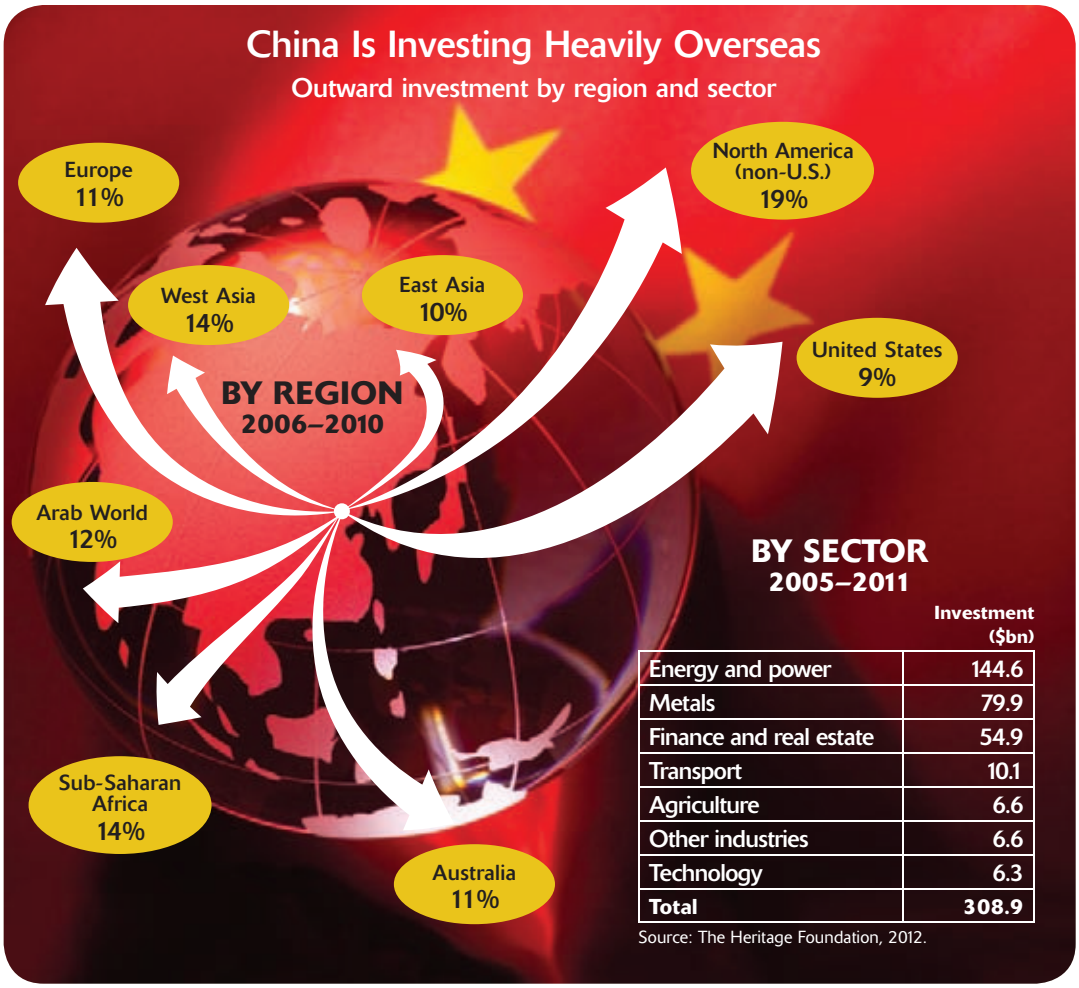
Source: *Infrastructure Investor,* June 2011.

Pension Plan Sponsors

Pension funds have been "slow to get their act together—still only one-half of 1 percent of their total assets" get allocated to infrastructure, but that could change, especially among public plan sponsors. Infrastructure's modest but steady investment yields can appeal to pension funds interested in reliable income returns to match with their long-term liabilities. Governors and mayors, meanwhile, hold more conversations with public fund officials about investing in infrastructure projects, which could produce jobs for their future beneficiaries and lift local economies.

On balance "it's gotten easier to raise money from pension funds, but there are headwinds," say fund managers, "and despite growing allocations, commitments, and interest, the pace of growth isn't as high as the need." Investors look for low volatility, predictable investment returns that meet actuarial rates of return in the 7 to 8 percent range, or inflation-adjusted returns plus 4 to 5 percent, which infrastructure can provide. But they remain concerned and distracted about "putting out fires in various portfolios," whether investment in Europe is safe, and "political partisanship in the U.S.," which stifles problem solving. The absence of available debt also steals away any chance to leverage up returns. "Overall uncertainty offsets general enthusiasm for asset class."

For the United States, "a great deal of capital remains interested—all it will take is the government becoming more constructive in approaching procurement of private capital and PPPs." The ideal combination for these risk-averse investors is a franchise with an identifiable long-term income stream, backed by government support through availability payments or guarantees, and a strong private operating partner. So far, investment activity has been relatively "minuscule."



BY SECTOR 2005–2011

	Investment ($bn)
Energy and power	144.6
Metals	79.9
Finance and real estate	54.9
Transport	10.1
Agriculture	6.6
Other industries	6.6
Technology	6.3
Total	**308.9**

Source: The Heritage Foundation, 2012.

A Look Forward

Progress often precipitates from failures—tough times have a way of helping reshape priorities and focus attention on crucial economic and social policies necessary for meaningful and sustained recovery. Noticeably, the will gathers to recognize and take up the nation's substantial challenges and consensus starts to develop for doing something even if there is less funding available.

In the global infrastructure game, local governments are stepping up to the plate, assuming more responsibilities and leveraging many sources of funding to build the infrastructure to bolster flagging economies and position for the future. But local efforts can only go so far, and in the United States, at least, lack of a clear federal direction for policy and funding can create uncertainty and inertia.

The immediate future will test whether the country can do more with limited resources: make progress on identifying worthy projects and attract private capital to pool with taxpayer funds to get them built. For success, planning and funding ultimately must orient to developing regional priorities in the context of integrating with national objectives to compete effectively in global markets. That will mean moving people and goods more efficiently and economically, using less energy and less water per capita, and enabling the growth of metropolitan areas where populations increasingly concentrate. At the same time, the country must keep repairing what its citizens already depend on.

It all amounts to an extremely tall order. But incremental progress may lead to better results—that's at least the hope.