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US Infrastructure Privatization and Public Policy Issues

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Introduction

National and regional economies function at their best when supported by functional and efficient public infrastructure, such as airports, seaports, rail, roads, bridges, water, gas, electricity, and telecommunications. Excellent public infrastructure allows private sector enterprise to operate at peak performance. This is not so different from infrastructure within a private enterprise, where investment in efficient computer systems, office space and factory machinery should result in improved performance.

Public infrastructure is accessed and used by the public at large, by businesses and residents. Most of this infrastructure has the characteristics of natural monopolies. For example, if infrastructure were purely in the private market, several companies might provide parallel roadways, wired phone lines, airports, water systems, etc. Since a free-for-all in the provision of such critical and expensive investments has not been viewed as in the best interests of the public, some governmental control has been typical in the US as well as most modern countries. How it is provided, however, varies from nation to nation. For example, in the US, rail, air, energy, and telecommunications have largely been provided by private companies, but are heavily regulated as monopolies by federal and state agencies. In many countries, these services are provided by government-owned companies or agencies. On the other hand, private firms own and operate public roadways in some countries, while they are traditionally under the ownership of governmental agencies in the US. Even tollways and toll-financed bridges are typically owned by governmental authorities in the US, whereas most of this infrastructure is privately owned and/or operated in other countries.

Experience in the US and other developed countries indicates that, due to its monopolistic nature, public infrastructure must be publicly regulated. However, its ownership and operation can be either in the public or private sector. If privately provided, appropriate regulation is key to its success in serving the best interests of residents and businesses. The US has had considerable experience in successfully regulating rail, air transport, gas, electricity, and telephone systems, and has acquired an extensive knowledge base. As a result, such regulation has evolved through the years, becoming more responsive to changing public needs. For example, telephone systems that were once monopolistic are no longer as wireless, cable and internet systems compete to provide an essential service. Regulations are struggling to catch up with this shifting landscape.

Expanding private ownership and operation of infrastructure to areas that have traditionally remained in the public realm in the US has recently become an issue of debate, with vocal opponents as well as advocates. In particular, roadways, bridges, airports, seaports and water systems have been the targets of discussion. Interestingly, privatizations have been controversial in this country, where most infrastructure has historically been owned by private firms.

Although private investment in infrastructure is hardly new to the US, conversion of government owned infrastructure that has historically been in the public domain into privately owned or operated enterprises is a fairly new trend. As such, it is providing opportunities for private investment. This paper attempts to assess the potential of this opportunity, and is a follow-on to a previous RREEF Research paper published in May 2006, entitled *Opportunities in Private Infrastructure Investments in the US*. Following the introduction, the paper discusses the movement and rationale behind privatization efforts. The advantages and disadvantages of privatization are reviewed in addition to a look at the critical infrastructure needs in the US. Following this, we provide historical and empirical evidence of labor market and efficiency impacts of privatization. Various forms of privatization are outlined, followed by a discussion of the regulatory environment surrounding the key infrastructure sectors. This is followed by an objective assessment of key federal and state level legislation that promotes increased private sector involvement in the provision of infrastructure services. Concluding remarks follow.

The Movement Towards Privatization

Two significant trends are driving the movement towards privatization. First, governments at all levels are strained for financial resources. Privatization is a means for providing needed and popular infrastructure without further straining the public budget. Second, the private markets are capital rich, seeking to invest increasing quantities of capital at attractive risk-adjusted yields. Investment in privatized infrastructure can offer attractive opportunities.

The federal government traditionally has heavily funded much of the infrastructure currently targeted for privatization. During the past few decades, efforts to reign in the federal budget have resulted in declining resources for roads, bridges, airports, seaports, and water systems. These budget reductions have impacted both capital and maintenance costs. As a result, these burdens have shifted to state and municipal budgets. Increasing revenue at the state and local levels, however, is politically very difficult. Thus, privatization is viewed as a mechanism for providing infrastructure without negatively impacting a state or municipal government's fiscal position. Over the past decade, it has been the regional governments in the US that faced severe fiscal pressures that have predominantly privatized. This issue impacts both capital costs of developing new infrastructure and maintenance costs for older infrastructure.

Infrastructure investment needs in the US fall into two basic categories. The first involves growth areas, including booming new suburbs and areas of regional growth, such as the southern and western portions of the nation. The needs in these areas are for capital to develop infrastructure to support this growth. With federal funds more limited, states and municipalities need to be more creative in financing these needs. Privatization of the new infrastructure is an obvious solution.

The second category involves curing deferred maintenance of older infrastructure. Older communities, particularly in the Northeast and Midwest, are served by old infrastructure. Typically, these regions suffered from under-investment in the maintenance of this infrastructure. With slow economic growth, little fiscal capacity exists to fund what is often substantial deferred maintenance. Once again, privatization offers a potential solution.

The private sector can provide desperately needed capital for investing in the crumbling infrastructure across the US. There has been severe underinvestment in US infrastructure over the past decade. The supply of infrastructure assets has failed to meet growing demand as exemplified by an aging infrastructure, expanding demand for services with a growing

population, and state/local government deficits that have not only restrained needed expenditures, but also had to accommodate competing priorities, such as health care.

The American Society of Civil Engineers (ASCE) has released its most recent Report Card for America's infrastructure, grading the top infrastructure categories. The summary results are reported in Exhibit 1 below. The grade point average has deteriorated to a "D" overall with an estimated \$1.6 trillion needed in further investments to bring conditions to acceptable levels.

Exhibit 1
The State of America's Infrastructure*
(American Society of Civil Engineers)

	Grade	
	2001	2005
Aviation/Aerospace	D	D+
Bridges	C	C
Dams	D	D+
Drinking Water	D	D-
Energy	D+	D
Hazardous Waste	D+	D
Navigable Water Ways	D+	D-
Public Parks & Recreation	-	C-
Rail	-	C-
Roads	D+	D
Solid Waste	C+	C+
Transit	C-	D+
Wastewater	D	D-

America's Infrastructure G.P.A. = D
Total Investment Needs = \$1.6 Trillion

*Each category was evaluated on the basis of condition and performance, capacity vs. need, and funding vs. need

Therefore the question of why privatize is that for many state and municipal governments, it may be the only way to provide or maintain needed infrastructure for their local constituents. Infrastructure investments, whether private or public, are a necessary input to expand the productive capacity of an area. Capital investment in infrastructure, private as well as public, goes hand in hand with economic activity. Empirical studies have shown that infrastructure has substantial payoffs, and currently in the US, public infrastructure is undersupplied and higher levels are warranted.

Benefits of Privatization

Several factors appear to be driving the current trend toward privatization of infrastructure:

- A perception or belief that private enterprise can develop and/or operate critical facilities more cheaply and efficiently than public agencies.
- Provide a source of capital to fund needed infrastructure that would otherwise need to be funded through tax revenue or public financing.
- In the case of an outright sale, provide cash to bolster public finances or to be used for other public needs.
- To provide the revenue to maintain the infrastructure over time.

- Remove critically needed facilities from on-going political meddling, which can often impede the efficient and economical provision of services.

Of the above-mentioned factors, the ability to provide infrastructure without sizeable public funding and the ability to generate cash through a sale of an asset are the most appealing to government officials and politicians. Because voters are highly resistant to increased taxes and higher public debt at all levels of government, opportunities to shift costs from the public to the private sector are appealing.

Canada has been at the forefront of this movement toward privatization in North America, with infrastructure becoming a mainstream asset class that attracts investor capital. Long-duration infrastructure investments are especially appealing to pension funds, which have long-dated liabilities.

The key arguments for privatization are presented in Exhibit 2.

Exhibit 2
The Case for Privatization

Problems with Old/Public Model	Benefits of Privatized Model
<ul style="list-style-type: none"> • Underinvestment • Fees that are not cost reflective • High costs • Low productivity • Accountability; providing appropriate service level • Shortages 	<ul style="list-style-type: none"> • Increased investment • Cost-reflective fees • Improved incentives for efficiency • Access to superior management • Improved service quality

Source: RREEF Research

Criticisms of Privatization

Privatization has some vocal critics as well. Essentially, any change in public policy has winners and losers, and this is particularly true of privatizations. Some critics argue that the result of a public to private transfer of a public monopoly results in price increases with no perceived or real improvement to service. The following are the most recently cited concerns:

- Loss of public control when a public asset is transferred to the private sector. This fear is particularly pronounced if the private entity is foreign.
- Loss of jobs, or reduced pay, benefits and civil service protections. Labor advocates argue that privatization is merely a means of cutting government jobs and slashing wages.
- Higher prices or user fees charged by the provider to generate a return on investment. Why pay more to fund a profit for a private firm?

Interestingly, infrastructure privatization in the US is not a particularly partisan issue. For example, the Democratic mayor of Chicago has privatized a portion of the region’s transport infrastructure (the Chicago Skyway), while the Republican Governor of Indiana has privatized the Indiana Toll Road.

Privatization: Empirical Evidence

From a public policy perspective, the benefits or lack thereof from privatization depend substantially upon how it is structured and regulated. This parallels the experience in the US of regulating private infrastructure, such as rail, air transport, telecommunications, gas and electricity. There is little political pressure in this country to take private infrastructure public, so there is clearly more of a move towards private rather than public ownership.

Efficiency is a key argument of privatization. Those in favor suggest that goods can be most efficiently provided by the private sector (Wood, 2004). They argue that privatization is a mechanism for achieving optimal economic efficiency. If the entity is given a profit incentive to maximize its service and efficiency, the private sector is likely to outperform the public. A private firm, so incentivized, can optimally reallocate scarce resources, improving technology and management. Although it has been tried, there is little evidence that such incentives can effectively be established within public enterprises to produce superior performance.

The argument that the profit incentive requires higher charges to be assessed needs to be addressed, however. Private ownership and/or operation of infrastructure must be sufficiently more efficient than its publicly owned predecessor to cover its profit targets. Therefore, the privatization should be structured so that at a minimum, the public receives service at least as good from the private entity as from its public counterpart for the same price. To the extent that the private firm can provide better service is a winning situation for the community.

Privatization is a sensitive issue, especially regarding its distributional effects. It is clear that privatization often lead to changes in employment, wages and benefits. Protected jobs can result in over-staffed public enterprises, and employees are generally provided good wages and benefits. Productive employees are often under-compensated and tend to move on to more lucrative jobs, while less productive employees tend to stay. In addition, civil service rules often protect these workers. A private enterprise will want to add efficiencies by reducing the staff and adjusting pay and benefits to private sector standards. Incentives will likely be added to retain the best employees. Thus, the argument that privatization is likely to reduce employment is probably true in the short term.

Nevertheless, a broader view should be taken of employment impacts. There is considerable evidence that a better and more efficiently provided infrastructure generates economic activity and jobs. Much of the historical precedence of privatization efforts has been concentrated in the International Monetary Fund (IMF) programs starting in the 1990s. Since then, over 100 countries, across every continent, have had some experience with privatization of previously state owned enterprises. Privatization has also occurred across all sectors of infrastructure. An estimated 75,000 medium to large-sized firms have been divested around the world, along with hundreds of thousands of small business units. Total generated proceeds are estimated at \$735 billion (Nellis, 2002).

Across the globe, all countries have privatized a significant number of their publicly-owned firms (with the exception of Cuba and the Democratic People's Republic of Korea). Even China, a long supporter of a planned economy, is accelerating the privatization of state-owned businesses and encouraging both foreign and private investors to buy major stakes in these enterprises.

Much of the literature reviewed suggests that in most cases private ownership provides a higher level of output for a lower cost than public ownership. Privatization is generally one of the best ways to reform publicly-owned enterprises and reduce any distortions they create. Private firms do better in fully competitive markets. This advantage persists but is less pronounced in monopolistic markets. (Shirley and Walsh, 2000).

Shirley and Walsh (2000) reviewed 52 empirical studies of infrastructure privatization. Of these 52 studies, 32 conclude that the performance of privatized firms is significantly superior to that of public firms. Among the 21 studies that examine the performance of a firm before and after privatization, 14 find that performance improves. This body of empirical literature indicates that private or privatized ownership is superior to public ownership in a variety of situations.

Other empirical studies on privatization have tried to assess the employment impact more specifically. Anecdotal evidence indicates that privatization has led to an immediate loss in jobs in the short run. But over the longer term, empirical studies show that the impact of privatization on employment is more ambiguous than that. Prior to privatization, publicly run enterprises maintained higher employment levels at the expense of efficiency. With privatization, labor gets reallocated and IMF data show that aggregate unemployment actually decreases in the long term following privatization. (Davis et al, 2000). These results, however, may be influenced by the massive privatization that occurred in Eastern Europe and the USSR.

Other empirical studies have shown evidence of labor market inefficiencies in the public sector. These findings actually suggest that there exists an adverse selection bias that undermines the effectiveness of public sector labor force restructuring policies. This bias leads to the firing of the more productive and skilled workers in the public sector. These findings support the notion that privatization can lead to cost savings and workforce quality improvements through more rational and flexible labor market policies. Indeed, much of the body of empirical literature has shown that when public services are contracted out to private providers, a large number of lower skilled workers are replaced with a smaller number of highly skilled workers. Overall wages actually rise in this scenario.

More recent empirical studies support the view that privatization has very high beneficial effects on profitability and efficiency (Eytan, 2003). The evidence of firm-level employment is mixed, however. The evidence does conclude unambiguously that for large firms, employment actually rises after privatization.

Case studies on the privatization of public hospitals have shown highly beneficial results. Studies have shown that privatization of public hospitals combined with public regulation does have unique and inherent advantages over the pure public provision.

In the case of all infrastructure asset classes, four realized benefits of privatization have been documented:

- The private sector can provide desperately needed capital. The private sector is viewed as a potential source of capital that can be invested in the crumbling infrastructure across the US, and for expanded infrastructure in growth markets. This frees up financial capital for other public uses. It has also been a way to transfer financial risk to the private sector. Another positive of deploying private capital is that it is likely to be used more efficiently than public capital. Also, there are limits as to how much the public sector can raise capital on their own. There is also a limit as to how much the municipal finance capital markets are willing or able to leverage an infrastructure project, similar to the private finance sector.
- The private sector brings with it expertise. Smaller municipalities may incur relatively high unit costs if they operate their own services as a result of not having the technical expertise or sufficient size to achieve economies of scale. Cost is never the only reason for privatization. Another important reason is the access to specialized expertise and proprietary technology.
- The private sector has incentives to operate systems efficiently, having more incentive to hold down costs and have more labor market flexibility in order to generate profits.

- The private sector is accountable to both its customers and shareholders, who require more transparency in operations and maximized profits. A publicly owned enterprise, on the other hand, is subject to political and bureaucratic interference.

Examples of failures in privatization of infrastructure and service delivery in less developing economies can be explained fundamentally by two types of policy mistakes. First, poor design of concessions – mainly in the area of distribution of risks and public guarantee. The second mistake is inappropriate regulatory structure and/or weak enforcement by regulatory institutions.

In the next section we define the various forms of privatization and provide an assessment of the most widely used in the US.

Defining Privatization

The broad definition of privatization is the transfer of property or control of assets used to deliver goods or services from the public to the private sector (Shehadi, 2002). But, privatization comes in different forms and alternative delivery systems. Savas (2000) distinguishes between three broad forms of privatization. (Please refer to Exhibit 3.)

Exhibit 3 Forms of Privatization

Delegation	Contract Public-private competition Franchise/Concession Public-private partnership Grant, loan, favored tax status, etc. Voucher Mandate
Divestment	Sale Free transfer Liquidation
Displacement	Default Withdrawal (load shedding) Voluntary Action (voluntarism) Deregulation

Source: E.S. Savas, Privatization and Public-Private Partnerships York: CQ Press, 2000)

There are three forms of privatization and, across each, distinctive subcategories as well. The first general form of privatization is **delegation** which is frequently referred to as “partial privatization”. In this case, the government continues to play an active oversight role. In the US, the most common form of privatization is by contract which is a sub-category of delegation. In President Bush’s 2001 management agenda, he referred to contracting as “competitive sourcing”. Contracting or competitive sourcing is the most pervasive form of privatization across federal, state and local governments in the US.

Franchising is another form of privatization increasingly used when the privatized services involve the public domain: airwaves, airspace, streets, etc. These arrangements are usually referred to as concessions. According to Savas, “infrastructure projects – water supply, wastewater treatment, highways, airports and bridges – that are built, expanded or upgraded through public-private partnerships are franchises, usually in the form of concessions.”

The use of public-private partnerships (PPPs) has been increasingly adopted to finance large-scale infrastructure projects (especially in Canada). Under a PPP arrangement, the government states its need for an infrastructure asset which is then privately financed and privately operated under a long term lease. The lease is typically 20 to 99 years. PPP projects are typically roads, airports, water systems, pipelines, and power plants.

In the case of **divestment**, the second broad form of privatization, the publicly-owned asset is sold or given away as an ongoing business. In developing nations, divestment is typically referred to as “denationalization”. Divestment is less common in the US since there are fewer “state-owned enterprises” to begin with. Outside of the US, the most common form of privatization is divestment.

Displacement is the third form of privatization. It typically occurs when the government deregulates a public good. One example of displacement in the US centers on public education. Increasingly, dissatisfied parents are withdrawing their kids from public schools and enrolling them in private schools. This is displacement by default.

As seen in Exhibit 4, contract arrangements are the predominant form of privatization in the US followed by grant or concessions.

**Exhibit 4
Forms of Privatization
Used by US State**

Contract	80%
Grant	5.7%
Franchise/Concession	5.0%
Public-private partnership	4.3%
Voluntary action	1.8%
Voucher	0.7%
Other	2.5%

Source: Chi & Jasper, 1998

Privatization Trends in the US

Most of the privatization efforts in the US today are driven by fiscal needs. The focus is to provide new or improved infrastructure without further burdening public coffers. In some cases, privatization generates cash that can be used for the public sector’s provision of services. It can also result from dissatisfaction with the level of taxation that is levied on individuals and businesses by municipal, state, and federal governments in order to pay for services.

For years in the US, and in economic theory surrounding natural monopolies, the public sector was viewed as better suited to provide a public good, one that has the characteristics of a natural monopoly. In the case of natural monopolies, these are essential services provided to a community where natural barriers to entry exist and, therefore, little or no competition. The view is that without competition, “monopoly owners” would be able to exercise considerable power and earn monopolistic returns. As a result, the public workforce was perceived to be the best provider of essential services. Public employees would reliably and efficiently protect the public safety and deliver water and power, maintain roads and bridges, collect trash, etc.

In reality, however, fiscal constraints and the absence of accountability and monitoring controls has resulted in inefficiencies and poor perceptions of performance and service quality. Chronic problems of providing adequate infrastructure have an increasing number of city planners and public policy officials looking to privatization.

In the US, privatization of surface roads is gaining momentum. In Exhibit 5 and Exhibit 6, two forms of road privatization arrangements are presented. The first covers PPP arrangements where the second includes the use of concessions. Exhibit 7 presents some of the latest toll road proposals.

Exhibit 5
New PPP Toll Roads in Operation

<u>State</u>	<u>Location</u>	<u>Road</u>	<u>Cost (\$B)</u>	<u>PPP Type</u>
AL	Tuscaloosa	Black Warrior Pkwy. Br.	\$0.025	BOO
AL	Montgomery	Emerald Mt. Expwy Br.	\$0.004	BOO
AL	Foley	Foley Beach Express	\$0.004	BOO
AL	Montgomery	River Pkwy. Bridge	\$0.012	BOO
MO	Lake of the Ozarks	Lake of the Azarks Br.	\$0.040	BOT
ND	Fargo	Fargo Bridge	\$0.002	BOT
CA	Orange County	91 Express Lanes	\$0.130	BTO
SC	Greenville	Southern Connector	\$0.191	DBFO
TX	Laredo	Camino Colombia	\$0.090	BOT
VA	Loudon County	Dulles Greenway	\$0.430	BOT
VA	Richmond	Pocohontas Pkwy.	\$0.325	DBFO
Total			1.293	

Source: Reason Foundation

Exhibit 6
Privatizations of Existing Toll Facilities

<u>State</u>	<u>Location</u>	<u>Road</u>	<u>Cost (\$B)</u>	<u>Type</u>
MI	Detroit	Detroit-Windsor Tunnel	\$0.07	
IL	Chicago	Skyway	\$1.83	99-year lease
IN	Indiana	Indiana Toll Road	\$3.85	75-year lease
VA	Loudoun County	Dulles Greenway	\$0.62	
Total			\$6.37	

Source: Reason Foundation

Exhibit 7
Current PPP Proposals, March 2006

<u>State</u>	<u>Location</u>	<u>Route</u>	<u>Est. Total Cost, \$B</u>	<u>Type of Project</u>
CA	San Diego	SR 125	\$0.6	new toll road
CO	Denver	C-470	\$0.4	add HOT lanes
GA	Atlanta	I75/575	\$1.8	add HOT and toll truck lanes
GA	Atlanta	GA-400	\$1.4	add HOT lanes
OR	Portland	3 new routes	\$1.0	new toll roads
TX	San Antonio to Dallas	TTC-35	\$7.2	new toll road
TX	Dallas	I-635	\$3.0	add HOT lanes, rebuild freeway
TX	Dallas	SH 121	\$0.3	new toll road
TX	San Antonio	Loop 1604	\$0.6	add HOT lanes
TX	Ft. Worth	Sh 161	\$0.5	new toll road
VA	TN to WV	I-81	\$7.0	add toll truck lanes, rebuild highway
VA	Northern VA	I 495	\$0.9	add HOT lanes
VA	Northern VA	I-95/395	\$1.0	add HOT lanes
			\$25.7	

Source: Reason Foundation

The long-term concession model, or lease, is the privatization model used more frequently in the US, especially in the transport sector. Two notable examples are the Chicago Skyway and the Indiana Toll Road. (Please refer to Exhibit 6)

The Chicago Skyway is one important example of privatization in the transport sector. The Chicago Skyway is a toll road and bridge that was built in the 1950s. Chicago received \$1.83 billion for that asset from a private operator that the city could now put to work on other projects. In return, the private operator received a 99-year lease for the Skyway.

In the case of the Skyway, there was no loss in jobs because of how the deal was structured between the City of Chicago and Cintra/Macquarie, the private operators. The deal provided that anyone who had been working on the Skyway that did not want to work for the new private operator could move into other city jobs.

The 75-year lease of the Indiana Toll Road for \$3.85 billion has been the major highway privatization in 2006. Unlike the Chicago Skyway transaction, whose proceeds were used to pay off debt and fund other municipal balance-sheet items, the Indiana privatization is key to fully funding the state's proposed 10-year highway program. This program calls for the upgrade of Indiana highways over the next decade, critical transportation investments that ultimately should boost overall growth in Indiana.

Experience with privatization in the US and elsewhere, in general, has not meant massive layoffs. Most operating contracts call for downsizing only through attrition and the assumption of the public payroll wages and benefits commensurate to those that existed in the public sector. In the following section, a review of the regulatory environment surrounding infrastructure privatization initiatives is presented followed by recent federal and state legislative initiatives.

Regulatory Environment of Infrastructure Privatization in the US

Federal Regulation of Industry Sectors

The following section highlights the agencies that have the lead responsibility for different industry sectors, the bulk of which fall within the broad transportation sector. Under the auspices of the 1966 Title 49 Transportation Act, the Office of the Secretary of Transportation (OST) oversees the US Department of Transportation (US DOT). The US DOT regulates the national transportation system through 10 operating agencies concerned with intermodal transportation, each with its own management and organizational structure. Often multiple agencies appear to have overlapping authority; this can be further complicated by state and municipal jurisdictional authorities.

Recent legislation and initiatives for these agencies suggest a trend toward greater deregulation, and consequently, outsourcing and privatization, at least at the national level. Concerns about public safety and terrorism as well as protecting state employees' jobs can result in divisive political, sometimes partisan, debates about privatization of infrastructure assets and services. This is reflected in state level legislation, presented later in this section, which often lacks clarity and guidance, particularly in states with a high percentage of government employment.

The agencies represented below are not intended to be an exhaustive list, but rather a frame of reference.

Roads – Federal Highway Administration (FHWA); Federal Transit Administration (FTA). The FHWA is responsible for ensuring that America’s roads continue to be safe, maintained and technologically up-to-date. Although state, local and tribal governments own most of the nation’s highways, the FHWA provides financial and technical support for constructing, improving and preserving America’s highway system. The annual budget exceeds \$30 billion and is funded by fuel and motor vehicle excise taxes. The budget is primarily divided between two programs: Federal-aid funding to state and local governments; and Federal Lands Highways funding for national parks, national forests, Indian lands and other land under federal stewardship. The FTA administers federal funding to support locally planned, constructed and operated public transportation systems throughout the US, including buses, subways, light rail, commuter rail, passenger ferry boats and people movers.

Airports – Federal Aviation Administration (FAA); Transportation Security Administration (TSA). The FAA was created vis-à-vis the Federal Aviation Act of 1958 to operate and maintain the nation’s aerospace transportation system. The accident investigation function of the FAA was transferred to the National Transportation Safety Board (NTSB) in 1967. The FAA is responsible for air carrier certification and oversight, the implementation of safety and technological improvements, and increasing capacity, efficiency and reliability of airport infrastructure. The FAA also has regulatory responsibilities for the launching of space payloads by the private sector. Legislation in 2000 prompted the establishment of a new performance-based organization with responsibility for air traffic services with the agency. Following the terrorist attacks of September 11, 2001, Congress created a new Transportation Security Administration (TSA) that succeeded the FAA as the agency with primary responsibility for security.

Ports – Maritime Administration (MARAD). MARAD’s mission is to improve and strengthen the US marine transportation system - including infrastructure, industry and labor to meet both the economic and security needs of the nation. The programs promote the development and maintenance of an adequate US merchant marine, sufficient to carry domestic waterborne commerce and a substantial portion of its waterborne foreign commerce, and capable of service as a naval and military auxiliary in time of war or national emergency. MARAD also seeks to ensure that the US maintains adequate shipbuilding and repair services, efficient ports, effective intermodal water and land transportation systems, and reserve shipping capacity for use in time of national emergency. Although MARAD oversees all state port authorities, regulation occurs at a state and local level as well.

Rail – Federal Railroad Administration (FRA); Surface Transportation Board (STB). The FRA was created to transmit and enforce rail safety regulations; administer railroad assistance programs; conduct research and development in support of improved railroad safety and national rail transportation policy; provide for the rehabilitation of the Northeast Corridor rail passenger service; and, consolidate government support of rail transportation activities. The STB was created in 1995 and is the successor agency to the Interstate Commerce Commission. The STB is an economic regulatory and adjudicatory agency with jurisdiction over railroad rate and service issues, rail restructuring transactions, such as mergers, line sales and construction, shipping company rate matters (trucking, moving vans, ocean shipping companies) and rates and services of certain pipelines not regulated by the Federal Energy Regulatory Commission (FERC).

Energy – Federal Energy Regulatory Commission (FERC). Congress reorganized the Federal Power Commission in 1977 into the FERC, an independent agency that regulates the interstate transmission and sale of electricity, natural gas, and oil. FERC also reviews proposals to build liquefied natural gas terminals and interstate natural gas pipelines as well as licensing hydropower projects. The Energy Policy Act of 2005 expanded FERC’s

responsibilities to include promoting the development of a “robust energy infrastructure” as well as “preventing exercise of market power by reliance on effective competition and regulation”. Importantly, many areas outside of FERC’s jurisdiction are dealt with by State Public Utility Commissions, which includes, but is not limited to, regulation of retail electricity and natural gas sales to consumers; approval for the physical construction of electric generation, transmission, or distribution facilities; regulation of nuclear power plants by the Nuclear Regulatory Commission; and issuance of State Water Quality Certificates.

Water Utilities – State Public Utilities Commission (PUC). The various state PUCs regulate privately owned telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. They are responsible for ensuring that customers have safe, reliable utility service at reasonable rates, protecting against fraud, and promoting the health of the states’ economy.

Federal and State Legislation

Serious life safety issues arising from deteriorating infrastructure has captured headlines in recent years and infrastructure is clearly on the radar of the US Congress. A broad keyword search of “Infrastructure” through the Library of Congress reveals at least 1,000 bills under consideration for all types of economic and social infrastructure.

In March 2006, Senator George Voinovich (R-Ohio), Senator Thomas Carper (D-Delaware) and Senator Hillary Rodham Clinton (D-New York) introduced S.2338 to the Senate. The bill, entitled “The National Infrastructure Improvement Act of 2006”, was created to address the deteriorating conditions of US infrastructure. The legislation, if enacted, would mandate establishment of a National Commission on US Infrastructure; completion of a study by February 2009 that addresses and prioritizes current and future demands; recommendations for a federal plan to address infrastructure needs; and, completion of a report to Congress by February 2009 that will detail infrastructure legislation deemed necessary for the next five, 15, 30 and 50 years. The bill was referred to Senate Committee.

The concept of privatization in the US continues to evolve in a way that reflects increased private sector participation in the delivery of services, without necessarily implying complete divestiture of government owned assets that comprise US infrastructure. For example, the 99-year lease of the Chicago Skyway for \$1.8 billion and the 75-year lease of the Indiana Toll Road for \$3.85 billion. While the proceeds in the Chicago transaction went toward paying off debt and to fund other municipal items, the proceeds from the Indiana privatization is expected to fully fund the proposed 10-year highway upgrade program.

The federal government has passed several initiatives that clearly facilitate the process of competitive outsourcing and encourage more private enterprise. These acts have provided tools for States interested in exploring innovative methods for financing public works by offering ways in which to clear the legal, financial and political hurdles inherent in privatization and public-private partnerships. Two notable changes include:

- Federal Activities Inventory Reform (FAIR) Act – Congress passed in 1998, classifying every federal job into categories, the most basic being “inherently governmental” (activities that can only be provided by the government) and “commercial in nature” (activities that can be and are provided by the private sector).

The US Department of Transportation (US DOT) surveyed stakeholders, which included state officials, law firms, private companies and trade associations about how to eliminate or reduce existing impediments. In response to the surveys and the immediacy of states’

needs, the US DOT made recommendations that became the cornerstone of the new surface transportation law.

- Safe, Accountable, Flexible and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) – This new surface transportation law was enacted as Public Law 109-59 in August, 2005 for the five-year period 2004-2009 and replaces the Transportation Equity Act for the 21st Century (TEA-21). This facilitates an alignment of interests between the parties and to accomplish state infrastructure improvements with the expectation of further reductions in federal aid. It includes a provision for a State Infrastructure Bank Pilot Program. SAFETEU-LU includes the following provisions:
 1. Tolling: Establishing variable toll pricing programs that would permit tolling on any highway, bridge or tunnel to manage congestion or reduce emissions; easing the eligibility requirements for the Interstate and Reconstruction Program and allowing states to permit single occupancy vehicles on high occupancy vehicles lanes so long as time-of-day variable charges are assessed (High Occupancy Toll ,or HOT, lanes);
 2. Private Activity Bonds: Allowing State and local governments to use up to an aggregate total of \$15 billion in private activity, tax-exempt bonds to pay for projects eligible under Titles 23 and 49 of the United States Code;
 3. Environmental Streamlining: Mitigating the environmental review process without compromising protection;
 4. TIFIA: Lowering the project cost threshold for Transportation Infrastructure Financing and Innovation Act projects to \$50 million;
 5. Design-Build: Eliminating the \$50 million threshold for design-build projects;
 6. Commercialization of Rest Areas: Establishing a pilot program to allow states to permit commercial operations at existing or new rest areas on Interstate System highways; and,
 7. Debt Service Reserve: Allows public transportation agencies to obligate capital grant funds for a debt service reserve, to lower the cost of locally-issued bonds.
 8. State Infrastructure Bank Pilot Program. The purpose is to complement the traditional Federal-aid highway and transit programs by supporting certain projects that can be financed in whole or in part with loans that can benefit from the provision of credit enhancements. By operating their own loan programs, states can have more flexibility in financing their transportation projects.

Transportation projects are one of the few major programs that will receive increased federal funding over the next few years. The SAFETEA-LU law includes \$228 billion in federal funds for highways and an additional \$52 billion for transit and \$6 billion for highway safety programs. The new law includes reforms that tie federal dollars to a state's fuel tax contribution. As a result the share of transportation funding for large, densely populated states has increased.

Typically, funding for capital improvements for transportation infrastructure is comprised by roughly 30 percent federal funds, 50 percent state funds, and the remaining 20 percent from bond issuance. As budgets have recovered, states have begun to restore transportation funding. In fiscal 2005, state transportation spending is estimated to have grown by 7.6 percent with state funds increasing by 2.9 percent and federal funds by 16.9 percent. Approximately 59.6 percent of transportation expenditures are funded from earmarked

revenues placed in special transportation trust funds, captured in the “Other State funds” category. The major revenue source is the gasoline excise tax. Some states also apply a sales tax.

Motor fuels taxes are a stable revenue source tied to federal motor fuels tax rates and may be affected by the reauthorization of the federal surface transportation law. A decrease in the federal tax rate will automatically trigger increases in the motor fuels tax rates in four states (California, Nevada, Oklahoma and Tennessee) by statutory provision, while other states require legislative action to adjust them. Currently, 11 states have variable motor fuels taxes that are adjusted at specific intervals to sustain funding levels. Federal funds cover more than half of all transportation spending in Alaska, Montana, North Dakota and South Dakota, which compares to a national share of less than one-third. The rate of federal support for transportation projects is also high in California and several southern states, including Alabama, Georgia and South Carolina.

Going forward, the large and growing federal deficit will continue to shift responsibility for funding infrastructure projects from the federal to the state and local levels. States will need to plan for funding the difference. A combination of federal, state and local funding sources often are used in constructing HOV lanes. Federal sources in some cases are FHWA funds and in other cases exclusively transit (FTA) funds. If a state receives funds from each, the FTA must concur in the decision to change the nature of these facilities. Current policy supports HOV *conversion* to HOT lanes, as long as public transit service quality is not degraded. The FTA does not have a statutory policy about *new* HOT lanes. Given the number of states actively pursuing either a partnership or privatization as a means for funding, it appears the FTA will have to move forward on something more definitive. Some of the most active states include California, Virginia, Minnesota, Colorado, Utah, Illinois, Texas and Florida.

State Initiatives on Privatizations and PPPs

As Federal legislation has progressed toward less dependence upon federal support, increasingly states have entered into the arena of private and public-private partnerships. During the 2001 recession many states suffered budget deficits and engaged in more competitive forms of out-sourcing to streamline and reduce costs and engaged private business to help fund critically-needed infrastructure projects.

Five major trends have emerged in the legislative debates about privatization and outsourcing. 1) Under the FAIR Act, employees must classify their activities as inherently “governmental” in nature or commercial; 2) employees must provide written justification for keeping a project in-house; 3) the cost savings of outsourcing must be documented, with many states assigning a seemingly arbitrary 10% hurdle; 4) the establishment of government councils to advise and oversee privatization initiatives; and, 5) the passage of State Enabling Legislation. Further, a few states now place restrictions on government competition with private enterprise.

State Enabling Legislation

Exhibit 8 details recent state level legislation and privatization initiatives. The outcome of each initiative is also presented, showing mixed results. Many states do not have in-place legislation that enables them to consider tolling projects, with or without private investment. Illinois, Indiana and Texas have set landmark decisions and other states have adopted a “wait and see” attitude before enacting similar privatization legislation. TX-DOT, for example, has received sharp criticism in recent years for its rapid conversion of existing free roads or general purpose lanes to tolls. To stem the controversy, a new law, HB 2702, enacted in June 2005 requires a local referendum to approve any such conversions, among other provisions detailed in Exhibit 8 - 8A.

Based upon the compendium of recent state-level legislation (and state finances moving back to a condition of surplus), the continued shift from state-run services and infrastructure management to competitive private sourcing and funding remains murky and objectionable to some. Alternatively, many states have embraced a movement toward privatization, with states such as Virginia, Florida and Colorado pioneering more clear-cut directives for this process.

Exhibit 8 State Regulation and Privatization Initiatives

State	Bill	Context	Outcome
CA	AB850	Included provisions for design-build and private investment. New legislation will include the same provision plus a proposed 10-year Strategic Growth Plan for \$107 billion in transportation infrastructure improvements.	Approved on a bipartisan basis by the transportation committees in both houses but never reached the floor in either due to fierce opposition from the Caltrans engineers' union.
CT	HB5684	Places excessive restrictions and regulations on contracting out and PPPs	Governor vetoed for third consecutive year
FL	SB2518	Florida Efficient Government Act. Codifies GATE management process; establishes legislative intent to direct state agencies to deliver services efficiently and effectively; requires them to leverage the private sector whenever they can reduce the cost of government; establishes a Council for Efficient Government that advises and provides oversight of privatization initiatives.	Signed by Governor Bush in June 2006
GA	SR469	A resolution creating the Senate Environmental Program Privatization Study Committee. The main purpose is to give regulating agencies as much flexibility as possible in running their organizations and effectively enforcing environmental regulations. Also, to introduce private sector competition or incentives that result in higher quality performance and most effective implementation of policies.	Underway
GA	SB602	Privatizing at least one mental health facility.	Failed
HI	SB942	Proposed amendment to Act 90 that passed several years ago. SB942 would have placed restrictions to "enhance government accountability." Prior to Act 90's passage, privatization was effectively outlawed.	Failed
IN	Multiple Bills	Legislation to restrict and limit the power of the executive from privatization. Created an additional layer of legislative oversight and review. If approved, any privatization plan would be subject to hearings just 30 days prior to project implementation.	Failed
IN	HB1006/SB323	Companion bills granting explicit authority for school districts to engage in shared services contracts.	Enacted
IN	HB1008	Granted Governor the authority to enter into a concession agreement for the 157-mile Indiana Toll Road.	Enacted
LA	HB632	Requires that the State Department of Corrections privatize all adult correctional facilities by 2016.	Still in committee
MA	H1333	Prevents local governments from privatizing water or sewer services	Failed
MA	S1742	Requires any privatized work be completed in US.	Passed committee, but no further action
MO	SB958	"Public Service Accountability Act". Before a state agency can privatize a service, it must prepare a cost benefit analysis and written statement about the findings and its proposed actions. Requires cost savings of at least 10 percent and limits contract duration to no more than five years.	Failed in its current form
NJ	S1777	Allows 49% of the New Jersey turnpike to be "corporatized". Proceeds to be directed to state pension obligations. Governor may favor but is not actively supporting the measure yet.	Underway

Source: The Reason Foundation, June 2006 and RREEF Research

Exhibit 8a
State Regulation and Privatization Initiatives

State	Bill	Context	Outcome
NJ	A2210/S1600	Companion bills establishing new guidelines and requirements for privatization. Requires "substantial" cost savings; proof that state performance is "contrary to the public interest"; gives public employees right of first refusal for any jobs under contract; contractor must "provide fringe benefit coverage and a pay rate and pay progression to its employees performing work under the contract not less than what is provided to state employees.	Introduced, but no further action
NC	Legislative study	Study ABC store privatization. Will consider partial and full privatization of alcohol beverage control board liquor stores. Feasibility study and the effects on price, revenue, safety and enforcement.	Underway
PA	HB2572	"Free Enterprise and Taxpayer Protection Act". Prohibits government competition with the private sector for goods and services. Refers to all government agencies, universities and any public authority.	Assigned, but not heard
TX	HB2072	Tolling and PPP Law. Requires a referendum to approve conversion of existing free roads or lanes to tolls; entire concessions and development agreements must be made public; most concession terms limited to 50 years; state and local authorities must approve the methodology used to set toll rates; the annual amount the state can invest in toll projects that are not self-supporting increased to \$2billion.	Enacted
TX		Announced an agreement with IBM to manage email services and systems for 13 state agencies. Expected to reduce email management costs by 45%.	Approved
UT	SB74	Creates a privatization task force to identify functions suitable for public-private competition and privatization. Would establish restrictions on government competition with private business.	Failed in Senate; no action in House
UT	SB175	Department of Corrections would issue an RFP for the new prison the state needs, or allow the private sector to offer proposals at any time.	Failed in committee
UT	SB80	Enables "concession" model deals for Utah's highways,	Enacted
VT	S34	Applies stricter standards to privatization. Grants a right of action to State Employees' Association to seek redress for any alleged violation of standards. Vermont already requires demonstrated 10% cost savings before approving privatization initiatives.	Passed the Senate
VA	SB666	Clarifies existing state code and further enables state to enter into concession agreements for private toll operations.	Passed
VA	HB667	Directs the department of transportation to identify additional opportunities for highway maintenance privatization.	Passed
VA	HB1122	"Freedom from Government Competition Act". Requires an agency to produce written justification for keeping a commercial activity in-house rather than privatizing the function.	Still in committee

Source: The Reason Foundation, June 2006 and RREEF Research

Conclusion

Privatization of public infrastructure is hardly a novel concept, particularly given that much of the US's infrastructure has historically been privately owned, including most rail lines, air transport, water, natural gas, electricity, and telecommunications. The emerging trend is to extend this private ownership to infrastructure that for historical reasons has been provided almost entirely by the public sector. For the most part, this includes roads, bridges, airports, seaports and water systems. A more complete discussion of the opportunities for such investment in the US can be found in a paper by RREEF Research dated May 2006, *Opportunities in Private Infrastructure Investments in the US*. As this paper outlines, the need for substantial additional investment in the nation's infrastructure is well established.

With the federal government shifting much of the costs of infrastructure development and maintenance to state and local governments, these entities are increasingly challenged to keep up. In high growth markets, including popular new suburbs and in the fast growing regions of the southern and western US, funding new infrastructure out of tax revenue and debt capacity is difficult and politically unpopular. For older areas of the country, key infrastructure has become old and under-maintained. In some cases, this infrastructure is literally crumbling. With limited fiscal resources and competing priorities, these states and communities are experiencing extreme difficulty in raising capital for maintenance and reconstruction. While privatization is probably not a remedy for all infrastructure needs, it is certainly an attractive alternative for cash strapped governments. Considerable capital availability in the private sector means that numerous sources of capital are likely to pursue investments in privatizations.

Nevertheless, privatization often faces vocal opposition, for a number of reasons. To the extent that the public or political establishments can structure agreements to mitigate objections and educate the public to its benefits, the more opportunity privatizations will have to be successful. Although public awareness about the impact of infrastructure privatization has increased, the economic implications are less understood.

One focus of opposition centers on the loss of control of a critical public good through its transfer to a private entity. In the US, however, few privatizations have involved outright sale. Approximately 80 percent of all privatizations in this country involve a contract transfer, including long-term leases and other contractual arrangements. Depending upon how these contracts are structured, the public can retain significant control over facilities, even allowing for cancellation in the event of non-performance. Foreign ownership is often a security issue for a community, and a fear-based objection. Because this tends to be more of an emotional rather than a rational response, any real issues should be accommodated in the contractual agreement.

A second, and quite vocal, opposition to privatization centers on the potential loss of public sector jobs and reduced pay. To the extent that the private operator is more efficient than the previous publicly-owned operator, this fear is likely to be real. The impact of job loss, however, can be mitigated through the contractual agreement. For example, redundant jobs can be eliminated through attrition or transfer to other government agencies. Pay scales can be maintained through the contractual agreement. Taking a broader view of the impact on jobs, however, empirical studies of the impacts of privatizations suggest that they increase jobs and incomes in the longer term. These studies conclude the improvements in infrastructure through increased investment and more efficient operations result in greater economic productivity. This increased economic activity results in job growth and higher wages.

A third issue raised by opponents is the likelihood of price increases to the user. The objection is that a private entity will increase prices to generate an attractive return on investment. In fact, a well structured privatization should create efficiencies that allow for a profit margin within the original pricing structure. The contractual agreement should provide an allowable cost structure for the private operator. However, this assumes that the original pricing structure covered the costs of capital and maintenance. Often public agencies have been under-charging, fearful of the political response to increases in user fees, so the fees have been set artificially low and the true cost of operations has not been recouped. In such cases where charges will need to be increased to allow for prudent repair and maintenance, the benefits of this decision need to be effectively communicated to the local constituencies. Highways, bridges, public transport, dams, water and wastewater systems and airports are central to the economic success of regions and localities. This is the link between the citizens' well-being and their support of necessary infrastructure investment.

Given that governments at all levels are highly reluctant to raise taxes and therefore have been disinclined to fund long term investment needs, private investment in infrastructure can be a logical solution. Pension funds can be a source of funds for long-term infrastructure capital and maintenance that are unpopular to fund out of tax revenue. However, politicians with an eye to the next election are also hesitant to enter into public-private partnerships that could create additional costs for users, who are also voters. Public acceptance for tolls that pay for additional capacity or allow motorists, in essence, to buy their way out of congestion appears to be rising as it is offered as an option rather than a mandate.

Noteworthy private sector concerns about a public-private alliance include availability of financing, uncertainty of revenue streams, risks associated with the environmental review process, tort liability and potential changes in political leadership.

The key to successful privatization is a free market setting, along with appropriate government oversight. Indeed, studies show that privatization can lead to economic gains in societies that have free market systems, even in the quasi-monopoly infrastructure sectors. However, the government must exercise a level of regulation and enforcement commensurate to the risk of unhealthy monopolistic influences. A proper balance between the users and owners/operators of an infrastructure asset safeguarded by performance-based and enforceable contractual agreements should attenuate objections and help control this process. This balance may shift over time, and the appropriate mechanisms should be in place for recalibration along with a defined implementation process.

From the perspective of public pension funds, there exist numerous social and political benefits in supporting privatized infrastructure investments. Infrastructure investments are essential assets serving communities and supporting local economic growth; assets with which pensioners can identify. It demonstrates support of development in the local community since a solid pace of infrastructure investment is highly correlated with economic growth.

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The views expressed in this report accurately reflect the personal views of the undersigned lead analyst. In addition, the undersigned lead analyst has not and will not receive any compensation for providing a specific recommendation or view in this report.

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