

Transportation Capacity Expansion in an Age of Debt

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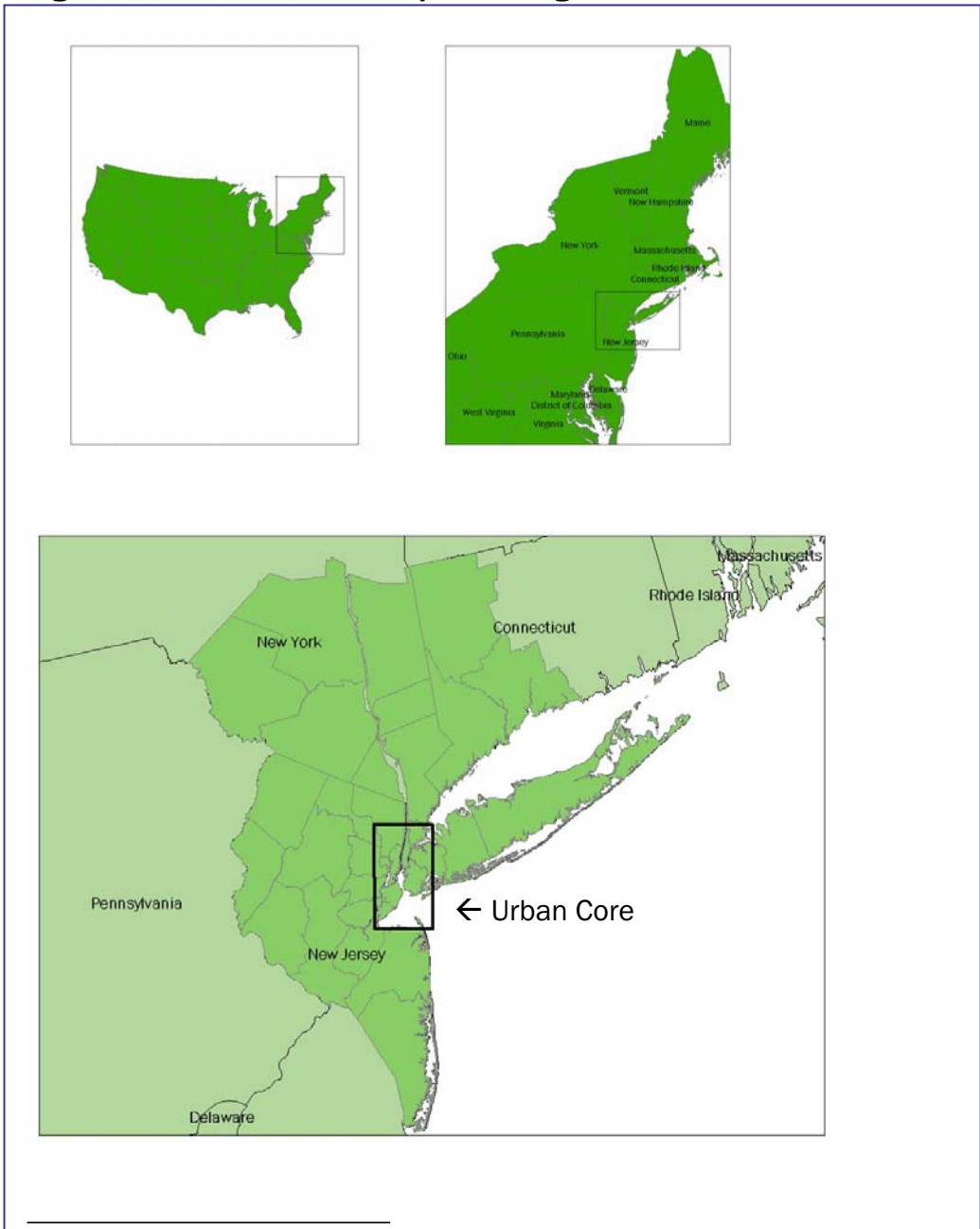
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The New York Metropolitan Region

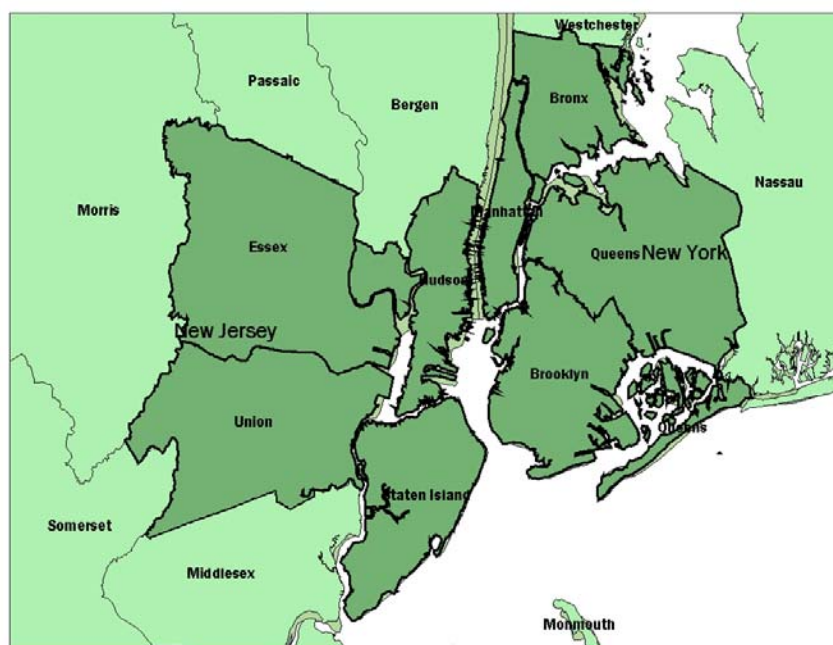
The New York-New Jersey-Connecticut metropolitan region is made up of 31 counties in 3 states, covering over 12,600 square miles of land (see Figure 1). Twenty two million people live in the region. It is sometimes defined as the commuter shed for New York City, however there are eleven other major urban centers that draw workers in every day. In all, 9.3 million people work in the region, 48% of them in the urban core shown in Figure 2 and defined as New York City, and Hudson, Essex and Union counties in New Jersey.¹

Figure 1: The New York Metropolitan Region



¹ US Census 2000.

Figure 2: The Urban Core of the Region



It is hard to overstate the magnitude of the region's transportation system. There are over 42,000 total roadway miles in the region and over 3,000 miles of track moving 7 million people every day.² The region is also set apart by very high levels of transit use: 68% of commuters use public transportation compared with only 9% in the US overall and only 10% in other major metropolitan areas.³

The Metropolitan Transportation Authority (MTA) is the nation's largest transit operator. It operates New York City Transit which encompasses the subway and bus systems, the Metro North and Long Island Rail Road commuter lines, and Staten Island Railroad. MTA's subway system carries ten times the number of passengers as the next largest system in the nation (Chicago's); it handles 4.5 million passengers per day; in terms of volume, it is surpassed only by Tokyo, Moscow, Seoul, and Mexico City. MTA also has the largest subway fleet in the world: 6,200 cars servicing 25 lines. New York is the only major city with 24 hour subway and bus service every day.⁴ The other major transit agency in the region is NJ TRANSIT, which services 800,000 trips on its bus routes, commuter rail and light rail lines daily. Each day, 68,000 passengers board an NJ TRANSIT train at Penn Station in New York City. The combined 5-year capital programs of MTA and NJ TRANSIT total \$37 billion, or \$7.4 billion per year.

Like many urban areas in America, the New York region is growing after years of stagnation and decline. As highways become more congested and fuel costs rise, the auto-dependent suburbs are becoming less attractive. Over the last 30 years, most of

² Federal Highway Authority Annual Highway Statistics report; NJ TRANSIT 2005; Metropolitan Transportation Authority 2006.

³ US Census 2000. "Other major metropolitan areas" includes census-defined metropolitan statistical areas with a resident labor force of 1,000,000 or more.

⁴ Ascher, Kate. *The Works: Anatomy of a City*. New York: The Penguin Press, 2005.

the residential development in this region has taken the form of single family houses in the outer suburbs. However, land availability at the periphery of the region is shrinking, and highway congestion, especially at peak hours, is growing. The patterns of the last generation may be poised for a change: Table 1 shows that many of the most populous and dense counties in the region are also those with the highest growth in residential construction, as measured by the average annual change in building permits over the last five years. Development is increasingly drawn toward pedestrian-oriented neighborhoods with transit accessibility. Given these patterns and the decreasing capacity of the highway and transit systems, it is clear there is a need for further investment in the region's transportation systems.

Table 1: Density, Transit Use, and Growth in Building Permits by County

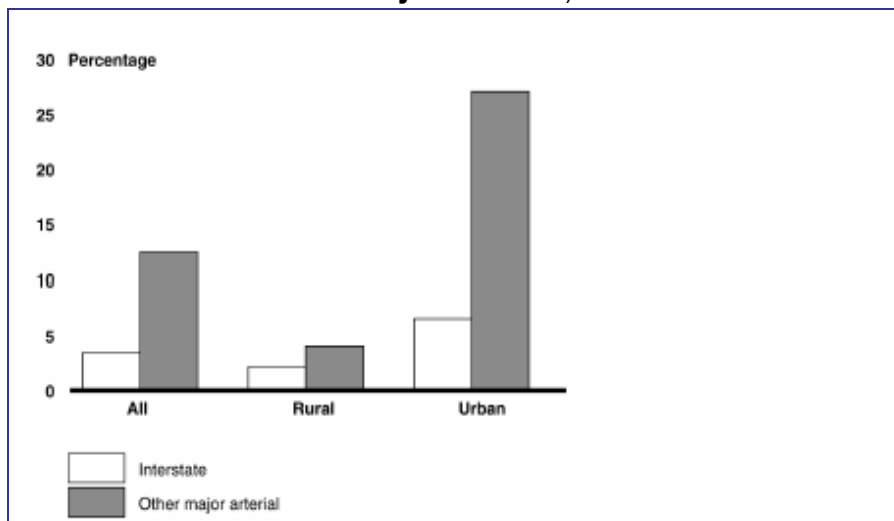
New York Metropolitan Region		Population 2005	Population Density (people per square mile)	Share of Commuters Use Transit, Walk or Bike	Average Annual Change in Building Permits, 2000 to 2005
Urban Core	New York County, NY (Manhattan)	1,593,200	47,178	87%	16%
	Kings County, NY (Brooklyn)	2,486,235	25,658	68%	28%
	Bronx County, NY	1,357,589	23,641	62%	27%
	Queens County, NY	2,241,600	12,574	54%	23%
	Hudson County, NJ	603,521	9,667	43%	31%
	Essex County, NJ	791,057	6,106	24%	17%
	Union County, NJ	531,457	5,039	14%	15%
	Richmond County, NY (Staten Island)	464,573	4,532	32%	-4%
Inner Suburbs	Bergen County, NJ	902,561	3,657	14%	8%
	Nassau County, NY	1,333,137	2,942	19%	1%
	Passaic County, NJ	499,060	2,533	12%	9%
	Middlesex County, NJ	789,516	2,448	12%	7%
	Westchester County, NY	940,807	1,881	26%	-9%
	Rockland County, NY	292,916	1,469	12%	0%
	Fairfield County, CT	902,775	1,079	11%	8%
	Somerset County, NJ	319,900	1,049	6%	-12%
	Morris County, NJ	490,593	1,019	6%	6%
Outer Suburbs	Mercer County, NJ	366,256	1,601	12%	2%
	New Haven County, CT	846,766	982	7%	4%
	Monmouth County, NJ	635,952	956	12%	-1%
	Suffolk County, NY	1,474,927	622	9%	4%
	Ocean County, NJ	558,341	610	4%	-11%
	Orange County, NY	372,893	445	9%	-2%
	Putnam County, NY	100,507	408	9%	-14%
	Dutchess County, NY	294,849	357	9%	-5%
	Warren County, NJ	110,376	304	4%	-7%
	Hunterdon County, NJ	130,404	298	4%	-2%
	Sussex County, NJ	153,130	286	3%	-1%
	Litchfield County, CT	190,071	201	4%	-2%
	Ulster County, NY	182,693	157	6%	12%
	Sullivan County, NY	76,539	77	7%	28%

US Census, US Department of Housing and Urban Development, State of the Cities Data System

Aging Infrastructure

Even as new residential infrastructure is being built in the region, existing transportation infrastructure is aging and, in some cases, failing. In general in the US, poor highway and pavement conditions are concentrated in urban areas, as shown in Figure 3. Urban roads are also the most heavily used. While they represent only 22% of total national miles, they account for 60% of total national miles traveled.⁵ In addition, bridges in urban areas are in worse condition than rural bridges: 27% of bridges on urban Interstates and other freeways and expressways, and 38% of those on urban minor arterials and collectors are deficient, compared with 16% to 17% of rural bridges.

Figure 3: Percentage of US Roads with Poor Pavement: Interstates Versus Other Major Arterials, 2000



General Accounting Office testimony before the subcommittee on Highways and Transit, Committee on Transportation and Infrastructure, US House of Representatives, "Physical Conditions of the Interstate Highway System Have Improved, but Congestion and Other Pressures Continue." Statement of Katherine Siggerud, September 26, 2002.

These national trends are clearly reflected in the New York metropolitan region. A recent report on New York State's transportation policy found that transportation infrastructure is deteriorating and in need of significant new investment.⁶ It points to sharp increases in vehicle miles traveled and MTA ridership, especially since the introduction of unlimited-ride fare cards in 1997, as reasons that both highways and transit systems are under stress. New Jersey faces similar challenges: about half of New Jersey's state highway system is deficient, and 53% of the current state roadway system is structurally inadequate to sustain current traffic loads.⁷ NJ TRANSIT's ridership grew by 30% over the last 10 years.

New Jersey is facing a particularly tough financial challenge because of its aging bridges. Most structures on New Jersey's highways were built in the 1950s and the average bridge age is now 47 years, nine years more than the national average. More importantly from a funding standpoint, 40% of bridges in New Jersey are over 50 years

⁵ Federal Highway Administration Annual Highway Statistics Report.

⁶ "Transportation-Trouble Ahead: Findings and Recommendations of the New York State Advisory Panel on Transportation Policy for 2025." (November 2004)

⁷New Jersey Department of Transportation. "Capital Investment Strategy Fiscal Years 2007-2011." (March 31, 2006)

old, the age at which they require costly replacement or rehabilitation. Because many more bridges will age into this category soon, the New Jersey Department of Transportation is expecting a drop in overall bridge ratings even if it is able to provide increased funding over the next several years. As a result, New Jersey has a backlog of structurally deficient bridges and an estimated need of \$7 billion over the next ten years just to reduce the backlog by half (its stated goal). The list of deficient bridges includes seven so-called high-cost bridges that will cost \$50 million or more each to repair and rehabilitate. Most of the bridges are located in the most densely populated parts of the state.

The American Society of Civil Engineers issues a regular report card on infrastructure condition for each state and for the US overall. In the US, transit was rated a “D+” citing a significant reduction in federal investment since 2001. The report notes that many major transit authorities are borrowing funds to maintain operations, even as they are significantly raising fares and cutting back service. At the same time, the increased popularity of transit, as evidenced by robust increases in transit ridership and strong support for local funding initiatives, has led to growth in both the number and size of transit systems in the United States. These statements are especially true for the New York metropolitan region. Additional data from the report are in Table 2.

Table 2: Condition of Infrastructure by State

	New York	New Jersey
Share of Major Urban Roads are Congested	34%	51%
Share of Major Roads are in Poor or Mediocre Condition	35%	71%
Share of Bridges are Structurally Deficient or Functionally Obsolete	38%	37%

Report from the American Society of Civil Engineers, 2005

Transportation Planning and Investment in the Region

Major transportation projects in this region are largely planned and financed through the MTA Capital Plan and the New Jersey Capital Investment Strategy. The New York State DOT also plays a role but is less relevant to the metropolitan region. The Port Authority of New York and New Jersey is a bi-state agency that also has a large impact on the face of transportation in the region, including airports, the PATH transit system, ports, and major bridges and tunnels connecting New York and New Jersey. Its finances are handled separately from the two major transit agencies, and rather differently: the Port Authority is funded entirely with internal resources. Its system-generated revenue cross-subsidizes its transit and port facilities, and is often sought by both New York and New Jersey for non-transportation purposes. The Port Authority will not be discussed at length in this report.

The MTA capital plan is created every 5 years. The current capital plan calls for \$21 billion to be invested from 2005 to 2009. The New Jersey Capital Investment Strategy is comprised of capital plans for NJ DOT and NJ TRANSIT. It is released every year and calls for \$16 billion to be directed toward transportation from fiscal years 2007 to 2011. For

agencies on both sides of the Hudson River, policies that began in the 1980s are still shaping the way transportation is funded. MTA began capital planning in the 1980s with the intention of cleaning up and fixing the decrepit system after years of divestment. That sensibility continues today, evidenced by the agency devoting 76% of its capital funding to upkeep or state of good repair and only 21% to expansion (see Figure 4). The New Jersey Transportation Trust Fund began directing capital funds to the New Jersey agencies in the early 1980s as well, but with the goal of increasing the commuter capacity to Manhattan. Consequently, as shown in Figure 5, only 36% of NJ TRANSIT's 10-year capital plan is dedicated to state of good repair and 45% is for capacity expansion; the remaining 19% is used for operating expenses, a problem discussed later in this report.

Figure 4: MTA Capital Program

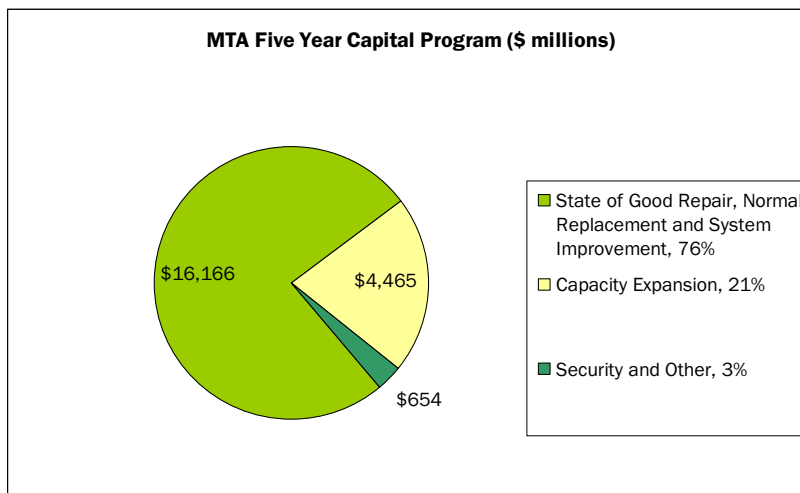
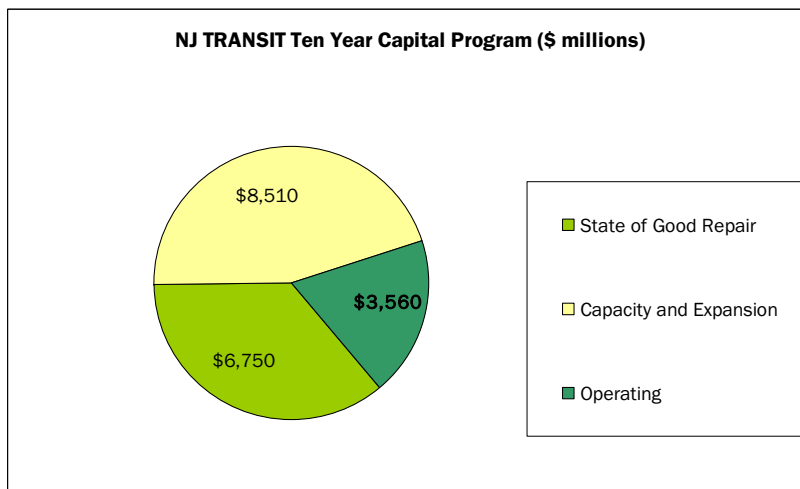


Figure 5: NJ TRANSIT Capital Program



The transportation agencies of both states rely heavily on debt to finance their capital programs. Extrapolating from New Jersey's FY 07 capital programs, 52% of NJ TRANSIT's and 49% of NJ DOT's capital programs will be paid with bonds issued by the Transportation Trust Fund Authority. Fifty one percent of MTA's five year capital plan will

be paid with bonds. The bulk of the remainder of the agencies' capital programs will be paid for with federal funds and, for MTA, a contribution from New York City (11%). The accepted wisdom is that this reliance on debt is appropriate given the nature of transportation capital programs: long-lasting assets can be financed with long-term borrowing. However the debt is being issued in states that suffer from already large debt loads and at levels that cannot be sustained with current or projected revenues. For the MTA, outstanding debt grew from \$14 to \$22 billion over the last five years, and is projected to reach \$32 billion in 2010. Likewise, debt service is projected to grow as a share of total revenues from an average of about 12% between 1996 and 2005 to 20% in 2009.⁸ As state debt levels continue to increase in New York and New Jersey, the capacity to tax or borrow for transportation projects is diminished. As New York State Comptroller Alan Hevesi has said, "Our debt is going to kill us."⁹

Residents of New Jersey and New York have the highest and second highest debt burden per capita, respectively, in the nation. Debt costs \$2,901 per capita in New Jersey or 7.3% of personal income, the highest amount in the nation. New York comes in second at \$2,509 per capita or 7% of personal income. In gross dollars, New York's debt is a relatively close second to California's, and California has nearly twice the population of New York.

While per capita debt burdens are increasing, debt service as a share of New York State revenue has actually been declining. The state has restructured much of its debt and postponed near-term payments.¹⁰ In New Jersey, there is a similar trend toward longer, slower repayment of debt, especially of transportation-related debt. In 2006, outstanding debt held by the New Jersey Transportation Trust Fund Authority was restructured to lower payments by \$100 million per year; in so doing it extended those payments for 9 more years on each issue. Likewise, highway debt service in New York State has been increasing over time: in 1995, it cost the state \$73.7 million, and by 2002 it had risen to \$715 million.¹¹ Overall, New York State is scheduled to pay 48.5% of state-funded debt outstanding within 10 years, falling short of industry standards of 50% to 65%. The FY 07 budget for New Jersey highlighted the "persistent practice of selling long-term bonds to cover short-term operating costs" and the state's "increased appetite for debt" as major problems for the state.¹²

Although the Federal Highway Act of 1956 promoted pay-as-you-go funding for transportation projects, issuing long term bonds for transportation infrastructure is now considered appropriate by state legislatures and finance departments. In 2005, voters in New York State approved a \$2.9 billion transportation bond act that will finance a portion of large-scale projects including two major rail projects in New York City (a new subway line on Second Avenue and East Side Access, which will bring Long Island Rail Road into Grand Central Terminal) as well as highway projects throughout the state. The bond act was actively promoted by most of the legislature and governor, along with

⁸ Citizens Budget Commission. "Danger Ahead! How to Balance MTA's Budget." (June 2006)

⁹ Gotham Gazette. "Reforming Public Authorities." (19 June 2006). <<http://www.gothamgazette.com/print/1888>>.

¹⁰ New York State Office of the State Comptroller, Alan G. Hevesi. "Debt Affordability Study." (December 2005)

¹¹ "Transportation-Trouble Ahead: Findings and Recommendations of the New York State Advisory Panel on Transportation Policy for 2025." (November 2004)

¹² New York Office of Management and Budget. "Fiscal 2007 Budget in Brief." (March 21, 2006)

transportation and labor advocates, and the New York State Comptroller called it “the right kind of borrowing.” In New Jersey, the state legislature approved extending bond maturities and raising bond caps for the Transportation Trust Fund Authority when a new Governor was elected in 2005. After decrying the over-reliance on debt to fund transportation projects in the state, including operating budgets, and blaming past borrowing practices on bringing the state dangerously close to a gas tax increase, the Treasurer and legislature approved extending borrowing because it was considered appropriate for transportation infrastructure.

Transportation-related debt comprises a sizeable portion of state debt.¹³ However, not all transportation borrowing is for the right reasons. In New Jersey, approximately \$400 million per year is moved from the Transportation Trust Fund – a fund established to finance capital projects – to the operating budgets of NJ TRANSIT and NJ DOT. Diverse groups of transportation advocates, including both highway proponents and environmentalists, have condemned this act as inefficient, contrary to the original intent of the fund, and an underlying cause of the general loss of public trust.¹⁴ In New York State, the misuse of borrowed funds for operations is a statewide problem. The state reports that \$7.7 billion of outstanding state-issued debt was borrowed for deficit financing and budget relief. An additional amount was issued for grants to private corporations and nonprofits, instead of long-lasting, state-owned capital assets. The State Comptroller notes that issuing debt for these purposes “creates a long-term cost for future generations without creating an asset.”¹⁵

Why has borrowing increased to the extent that transportation agencies are committing fiscal improprieties in the hundreds of millions of dollars? In short, because their only option would be to raise taxes. Transportation agencies receive funding from the federal government,¹⁶ the state and, in some cases, city governments, along with system-generated resources such as tolls, fares and advertising. Federal and state funding comes mostly from motor fuels taxes, with additional support from real estate and sales taxes. Political pressure tends to keep system-generated revenue low, especially in New Jersey. However, even substantial increases in fares and tolls could not pay the bill for decades of deferred maintenance and delayed expansion.

The main source of funds, therefore, remains the gas tax. The federal government backs its transportation funding to states through an 18.4 cents-per-gallon federal gas tax, and states and localities have the power to impose a tax on petroleum at the wholesale and retail levels. Gas tax revenue is used to back MTA and New Jersey Transportation Trust Fund bonds. As the demands of a growing economy and aging infrastructure are requiring more from transportation agencies, the gas tax is faltering in its role as the main source of revenue. One reason is simply that it has not been raised. The tax is unpopular, as consumers often believe it is a major component of the price of gas. It is also considered regressive.

¹³ New York has a total \$48.5 billion in state-funded debt of which \$12.6 billion is transportation-related. Comparable New Jersey figures are not available.

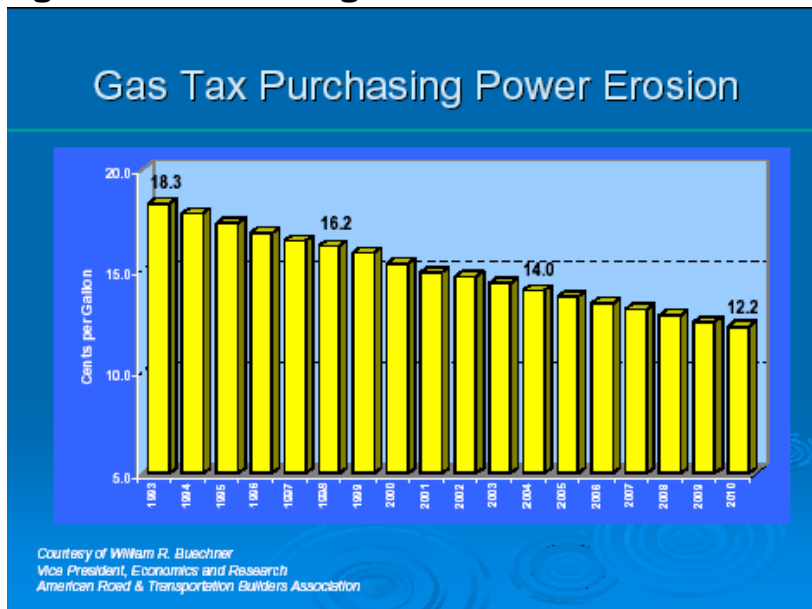
¹⁴ Regional Plan Association. “Putting the Trust Back in the New Jersey Transportation Trust Fund.” (July 2005)

¹⁵ New York State Office of the State Comptroller, Alan G. Hevesi. “Debt Affordability Study.” (December 2005) pg 14.

¹⁶ Some of the federal funding is an outright grant to states, while other funding requires a state match.

In other parts of the country, sales taxes are an increasingly popular tax for transportation projects. In 2004, voters in 18 states approved billions of dollars worth of measures to raise taxes – usually local sales taxes – to back bonds that will finance specific projects, such as a new light rail line in Miami, Florida, and brand new commuter rail in Austin, Texas. The New York metropolitan region does not have the luxury of promising new infrastructure for its tax hikes. Instead it uses the funding it already has to pay for maintenance, rehabilitation and replacement, relying almost exclusively on borrowing against existing revenue sources for any new expansion projects. Because it is considered political suicide to ask voters to raise taxes – especially gas taxes - for projects that promise no new trains or roads, existing funds are stretched farther through longer bond maturities and higher bonding caps. The existing funds themselves are shrinking: as shown in Figure 6, the gas tax is losing value over time due to inflation and improved fuel efficiency. As a result, states have turned to increased borrowing to pay for transportation maintenance, operations and expansion.

Figure 6: Gas Purchasing Power Erosion



Presentation to the Association of Metropolitan Planning Officials by Jack Basso, American Association of State Highway and Transportation Officials, March 14, 2006.

The federal government has responded to growing needs and decreasing resources by giving states more opportunities to borrow funds to build infrastructure. In the last federal transportation bill, the Transportation Infrastructure Finance and Innovation Act (TIFIA), which provides direct loans, loan guarantees, and standby lines of credit to projects of national or regional significance, reduced its project size threshold and loosened some other requirements. It became easier to qualify for Private Activity Bonds, which facilitate public-private partnerships with tax exempt debt. Several pilot programs were also established and expanded that allow states to put tolls on roads; since tolls provide a steady stream of income that can be borrowed against, the new toll programs will likely result in increased borrowing by states and public authorities as well.

Since 1991, the federal government has permitted states to borrow money using Grant Anticipation Revenue Vehicles, or GARVEE bonds.¹⁷ These are bonds that can be issued by states and backed by future federal transportation funding. As of last year, 16 states issued 35 GARVEEs for a total amount of \$7.5 billion in bonds issued.¹⁸ GARVEEs have been promoted among state lawmakers as a tool to implement projects sooner than with pay-as-you-go funding, avoiding some of the costs of inflation. They can also allow states to exceed debt limits and avoid going to the voters for approval via a referendum. GARVEEs have been criticized as yet another way to increase debt while producing no new revenue. There is also some concern that federal appropriations may not be stable and predictable enough to support the bonds in the future. Critics have gone so far as to assert that GARVEEs “have negatively impacted state transportation budgets, and should be avoided until significant structural flaws in the financing mechanism can be worked out.”¹⁹

Criteria for New Revenue Sources

The New York metropolitan region is growing and in need of accompanying growth in transportation capacity that will allow it to continue to offer a high quality of life. Old revenue sources, such as the gas tax, real estate taxes and sales tax, are being tied up in debt payments far into the future to support today’s capital programs that will keep the transportation systems in a state of good repair. Increasing existing revenue sources has proven to be politically untenable. Expansion will require new financial remedies, including new revenue sources and new financing mechanisms. It is important that states and transportation agencies choose those new revenue sources that will be stable, predictable and appropriate for the purpose. For this reason, an advisory panel to New York State developed criteria for a funding program for the state’s transportation system. In short, it called for a funding program that is of adequate size, sustainable over the long term, based on predictable funding, and flexible enough to make efficient use of the system’s multi-modal character.²⁰ The following is a slightly more economically-minded set of criteria:

- The source of funding should be closely tied to transportation purposes. Where possible, the benefits should be linked to source of revenue. For example, highway toll revenue can be used to maintain the same roads on which they are collected.
- **Equity:** the burden of paying the tax or fee should be progressive. Gas taxes and tolls may be fair, because they evenhandedly apply to all drivers, but some may argue they are inequitable because they place a greater burden on lower income drivers. Real estate taxes, on the other hand, can be structured progressively.

¹⁷ Although established in 1991, the first state did not issue a GARVEE bond until 1998.

¹⁸ Robert Puentes and David Warren. Brookings Institution Series on Transportation Reform. “Today’s Roads with Tomorrow’s Dollars: Using GARVEE Bonds to Finance Transportation Projects.” (March 2005)

¹⁹ Surface Transportation Policy Project. “Measuring Up: The Trend Toward Voter-Approved Transportation Funding”. (2002) pg 8.

²⁰ “Transportation-Trouble Ahead: Findings and Recommendations of the New York State Advisory Panel on Transportation Policy for 2025.” (November 2004)

The New York mortgage recording tax, for example, places an increasing burden on higher-value properties.

- **User pays:** Drivers and riders should pay transportation-related fees and taxes in proportion to their use and to the environmental and other costs they impose on the system.
- **Inflation and recession resistance:** the buying power of the proceeds should not be eroded by inflation, and collections should be stable against changing economic conditions.
- **Implementing the funding mechanism should have minimal negative impact on regional competitiveness.** This is especially important in multi-jurisdictional regions where policies that differ across state and county borders can impose artificial incentives with inefficient results.
- **Minimal transactions costs:** the funding source should be inexpensive to administer and not place undue inconvenience on those who are paying.
- **The funding sources should provide high enough yearly revenue.** For example, some of the motor vehicle registration fees discussed below may bring in only tens of millions, instead of hundreds of millions, of dollars per year. They may be partly relied on to diversify, and thereby stabilize, the set of resources backing a given project, but their limited capacity to raise funds should be clear to legislators and voters alike.

New Resources and Financing Mechanisms

The following section discusses funding sources and financing mechanisms which hold some promise for the future of transportation funding in older, built-up regions in the US. This is by no means an exhaustive list, but rather provides a range of the types of new resources that are being considered by transportation agencies and public officials to fund the next generation of capacity expansion.

Commuter Tax

From 1971 to 1999, New York State had a nonresident earnings component of the personal income tax, known more commonly as the commuter tax. It was repealed by the New York State legislature in 1999 in the midst of an economic and real estate boom. The tax was justified on the argument that jobs held by nonresidents in New York City have associated additional expenditures that the city must bear. One estimate showed that each commuter contributes on average \$2,253 per year to the city while requiring \$2,925 per year in public expenditures.²¹ Given the increasing burden placed on cities as employment centers, and the growth of places with transit infrastructure (see Table 1), a commuter tax that is dedicated to specific transportation projects may

²¹Chernick and Tkacheva, Hunter College Department of Economics. "The Commuter Tax and the Fiscal Cost of Commuters in New York City." (December 2001)

have more political viability than the prior levy. The tax stands up to some of the criteria listed above rather well: it is relatively progressive or can be structured thus, it adheres to the 'user pays' criteria, it is inflation resistant, can raise significant funds, and it has minimal transactions costs. It is, however, sensitive to economic downturns, and opponents claim it can cause jobs to move out of the city, thereby reflecting poorly on the region's economic competitiveness.

Congestion Pricing

Congestion pricing is being discussed as a possible tool for both improving the quality of life in New York City by calming traffic, and raising revenue for transit investments. Even as traffic congestion worsens, and with its rates of asthma and road accidents, New Yorkers tend to think that traffic, like the weather, cannot be controlled and must be tolerated. London and Stockholm have proven differently, and New York may be poised to learn from their examples.²²

Congestion charging is usually discussed as an option for the Manhattan central business district (CBD), although theoretically it could be implemented anywhere. The Manhattan CBD is an 8.5 square mile area south of 60th Street that is the economic center of the region. It is transit-rich and yet prone to gridlock that causes costly delays for cars, buses and trucks. In a 2003 report, Regional Plan Association constructed four pricing scenarios for the purpose of understanding how congestion charging might work, how much traffic it might discourage, how much transit use it might encourage, and how much revenue it might raise. The four scenarios are various combinations of bridge, tunnel and cordon tolls organized around the fact that free entry for motor vehicles to the core occurs from two directions – from the east over the four free East River bridges, and from the north using eleven entry points (see Figure 7). Approximately 255,000 vehicles enter Manhattan via the four currently free East River Bridges owned and operated by New York City, and 390,000 enter via the eleven southbound highways and avenues crossing 60th Street. Those driving from the west (from New Jersey) pay at the two tunnels under the Hudson operated by the Port Authority of New York and New Jersey; west-bound drivers pay at the two tunnels under the East River operated by the Metropolitan Transportation Authority. Overall, only 22% of the 800,000 motor vehicles that enter the CBD each weekday pay to enter.

²² More on congestion pricing in London, Stockholm and New York can be found in the Appendix to this report.

Figure 7: Vehicles Entering the Manhattan Central Business District, 2003



Number of Vehicles Entering the Manhattan Central Business District, 2003

The four scenarios were tested by estimating drivers' five possible responses to an added charge: (1) not making the trip at all, (2) changing the destination of the trip to outside the CBD, (3) shifting from driving to another mode, (4) shifting the route of travel, or (5) shifting the time of day of the trip. The study found that all four scenarios will lower traffic congestion, raise revenue, increase transit ridership, and cause only a very small decrease in trips made to the CBD.

Additional studies from RPA and other groups are expected to be released this fall. City officials and NYC DOT have not officially commented on the idea of applying congestion pricing to New York City, and it is a politically thorny issue. Congestion pricing in Manhattan would seem to many the same as installing tolls on the currently-free East River Bridges, an option considered by multiple mayoral administrations and always rejected due to political concerns.

Congestion charging ranks very well according to the criteria listed above: it is a user fee, it raises significant revenue, and it is closely tied to transportation. Its added traffic relief benefits can help make the region more economically competitive, as has been argued by business groups in both London and New York. Nonetheless, it can be sensitive to recession and inflation, and, as proven in London, can entail significant transactions costs. Some may also argue that it is regressive, while others argue that the traffic benefits are more than worth the cost even to the lowest-income drivers. The use of funds (for example, to pay for more transit accessibility in lower income neighborhoods), tools such as tax credits, and careful time-of-day pricing can also offset the argument that the charge might be regressive.

Motor Vehicle Registration Fees for Large Vehicles

Residents of New York and New Jersey, like most states, periodically pay a fee to register passenger vehicles. In New York, the fee schedule is based on weight; in New Jersey, it is based on both the weight and age of the vehicle. For cars less than 2 years old, the registration fees are higher in New Jersey than in New York when only the state-level fee is considered. New York counties impose registration fees in addition to the state fee, most of which vary by weight using the 3,500 pound cut-off. The county fees can make it more expensive to register some vehicles in the core of the region than in New Jersey. Nevertheless, the variance by weight is significantly different by state, as shown in Figure 8. The New York registration fee increases gradually by weight, so that a 6,000 pound vehicle costs a bit over twice as much to register as a 3,500 pound vehicle. The current New Jersey registration fee schedule does not vary as closely with the weight of the vehicle; a 6,000 pound vehicle costs about 1.4 times as much to register as a 3,500 pound vehicle of the same age.

Figure 8: Motor Vehicle Registration Fees in New York and New Jersey, by Weight



There have been calls to vary New Jersey’s registration fees more finely by weight. New Jersey’s relative wealth (it has fourth highest per capita personal income in the US²³), its lack of a meaningful vehicle registration weight penalty, and its low gas taxes (fourth lowest in the nation), all contribute to New Jersey’s status as one of the fastest growing states in terms of sport utility vehicle (SUV) and pickup truck ownership. The Vehicle Inventory and Use Survey released by the US Census in December 2004 showed that New Jersey is adding more light trucks per driver than the nation overall. In 2002 there

²³ Bureau of Economic Analysis, 2005. Regional Economic Accounts Table SA1-3.

were 912,600 SUVs registered in New Jersey, and sales of SUVs increased 72% between 1997 and 2002 in New Jersey. Table 3 shows there are relatively more SUVs in New Jersey than elsewhere.

Table 3: Sports Utility Vehicle Ownership per Driver, Ranked by State, 2002

Rank among States 1 = lowest, 51 = highest	
New York	19
New Jersey	46
Connecticut	18
Pennsylvania	15

A heavy vehicle fee, or ‘SUV fee’, would increase the registration fee significantly for vehicles weighing 6,000 pounds or more. Proponents of an SUV fee point out that federal tax breaks already benefit SUV owners, and SUV owners can afford expensive vehicles. Trucks weighing over 6,000 pounds are eligible for a \$25,000 federal deduction plus bonus depreciation and regular depreciation of around \$11,000. Prior to Oct. 22, 2004, when President Bush signed the American Jobs Creation tax bill, the same SUV buyers could write off up to \$100,000. Although few SUVs are used for business, many SUV buyers take advantage of this deduction which was intended to help small businesses and farmers. Noncommercial vehicles that weigh over 6,000 pounds are also among the most expensive, including Excursions, Hummers, Navigators, Escalades, Yukons, Range Rovers and Mercedes-Benz G500s, ranging in cost from \$37,000 to over \$117,000. An SUV fee would not raise significant funds and it would be sensitive to recession or other changes in the economy or federal policy; however, it would be progressive, closely tied to transportation, present minimal transactions costs, and likely have no effect on the regional economy. Depending on how it is structured, it could be inflation-resistant. It may also have strong symbolic value among environmentalists and other progressives.

Mileage Based Fees

The federal gas tax, along with many state gas taxes including New Jersey’s, are excise, or per-gallon taxes. As such they are vulnerable to inflation, and are destined to have declining revenues over time if they are not regularly increased. They are also vulnerable to increasing fuel efficiency. At the federal level, this presents a conflict of policy goals: on the one hand, the federal government (if not this administration then others) may wish to increase fuel efficiency standards and encourage drivers to use more fuel-efficient cars for environmental and geo-political reasons; on the other hand, the federal government continues to rely on increased use of gasoline because it needs the added gas tax revenues. Many states have averted these ongoing problems with a variety of methods: indexing the gas tax to inflation, using a sales tax, or some combination that allows the gas tax to be regularly evaluated and adjusted according to a given formula. Mileage-based fees present another option. These fees would charge the driver for the number of miles driven and, potentially, the time, place and level of congestion. An

experiment is currently underway in Oregon where 280 cars are outfitted with global positioning system-based devices to test the system. While proponents argue that a mileage fee is the only hope of decreasing the inexorable climb of vehicle miles traveled in the US, those concerned with the environment might argue that replacing or reducing the gas tax removes the disincentive against gas guzzling vehicles and could even lead fewer drivers to switch to hybrid and fuel efficient vehicles. Nonetheless, when considered independently of other tax policies, the mileage-based fee ranks fairly well according to the criteria above. It is a user fee that is very well connected to transportation, can raise significant funds, is unlikely to affect the regional economy of dense regions, and it can easily be structured as inflation resistant. Depending on the technology, there may be significant transactions costs, and like the gas tax it is sensitive to recession and can be seen as regressive. Overall, depending on the technology's availability, reliability, cost, and ability to sufficiently protect privacy, this could be could be an excellent addition to or even replacement of the motor fuel tax.

Public Private Partnerships

In the quest for new revenues without the pain of new taxes, states are increasingly looking for ways to tap into private capital. The federal government has been a vocal supporter of using public private partnerships to finance transportation capacity expansion.²⁴ Public Private Partnerships (PPP) refer to a wide range of tools designed to attract private sector funding to public transportation. A private firm may build new infrastructure, lease existing infrastructure, and/or operate infrastructure, with varying levels of restrictions imposed by its contracts with the public sector. The most familiar model is the full concession, wherein the rights to collect tolls on a road are leased to a private firm for a given sum. Contracts usually specify a schedule of permitted toll increases, responsibility for operations and the end condition of the asset, and ability of the public sector to build or improve competing infrastructure. States have also issued exclusive rights agreements, where the state receives a fee for agreeing to grant the exclusive right to investigate privatization opportunities to a specific private firm. This would provide a one-time influx of funds, but also might prevent private firms from competing for a final privatization bid, thus potentially lowering the final price gotten by the state.

Highway privatization arrangements in the United States have met with varying degrees of success. For example, in the case of State Road 91, the public sector had to buy back the asset from the private firm due to the contract's restriction on the state building competing infrastructure; in Texas and elsewhere, private contracts have failed due to over-optimistic traffic projections. In other cases, such as SR 125 in California, the Chicago Skyway, and the Indiana Toll Road, results seem positive but it may be too early to judge. Here are two of those examples:

Chicago Skyway (2005): Macquarie Infrastructure Group and Cintra Concesiones de Infraestructuras de Transporte (Cintra-Macquarie) paid \$1.83 billion for a 99-year lease that allows it to collect tolls on a portion of an 8-mile existing toll road. Chicago is using the one-time revenue to retire

²⁴ US DOT Secretary Norman Mineta has spoken to this effect on several occasions, including at the National Highway Funding Commission, May 24, 2006. < <http://www.dot.gov/affairs/mineteasp052306.htm> > .

debt, stabilize the city's finances, and pay for a variety of programs. The city's bond ratings immediately improved and Fitch rated a recent general obligation bond AA with a stable outlook.

Indiana Toll Road (2006): Cintra-Macquarie agreed to pay \$3.85 billion for a 75-year lease that allows it to collect tolls on a 157 mile existing toll road. Indiana has promised to dedicate the funds to building new transportation infrastructure. A consumer group tried to block the deal by alleging the intended use of the funds is unconstitutional. The case was tried at the State Supreme Court and ultimately the bond issue was deemed legal.

Two main benefits are often cited as the main reasons to use PPPs. (1) The private sector provides a large lump sum that can be used to pay off debt, finance future transportation infrastructure or fund other public purposes. (2) Private sector operators may have the capital and freedom from bureaucracy to facilitate investment in new technology and may be less wary of experimentation that can improve operations, such as changing the speed limits in electronic toll lanes or installing high occupancy toll (HOT) lanes that can control congestion. Public agencies often need extraordinary political will to make these types of changes.

From the public perspective, there are potential pitfalls to PPPs. A private firm may not consider the network effects of its road pricing. For example, its toll schedule may increase its profits while moving some traffic on to local roads. This may cost the state and localities more in the long run because of congestion and damage done by trucks to local roads. Privatization contracts may also restrict public agencies from building 'competing' infrastructure. A non-compete clause that seems reasonable now may prove detrimental in 20 or 30 years. The risk of default is another potential issue. Privatization projects have failed in the past due to over-estimating toll revenue. Some projects have led to governments buying back roads, higher tolls, and poor management of the toll road. The risk of default may be borne by a number of parties depending on the structure of the deal. If the private firm meets financial default due to any number of factors that could lower revenue and impede its ability to reimburse bondholders, it may be rational for the firm to abandon or neglect the road to save money. Labor agreements may also pose a problem, as public authorities in older metropolitan regions are usually restricted to hiring relatively higher-wage employees and deviations from this practice may cause public disapproval.

These potential drawbacks can be avoided with a carefully written contract, but this in turn poses two more issues. (1) A contract that addresses tolling, competing infrastructure, risk, and labor agreements to protect the public sector is worth less upfront than one that is looser. The public can expect a lower windfall. (2) Initially negotiating the contracts to ensure that level of protection requires a high level of expertise from the public sector. Bureaucracies not accustomed to handling complex financial investments may need to hire consultants at considerable cost to manage the arrangement, again lowering the windfall and increasing transactions costs.

Skeptics assert that if the public sector is able to sign contracts with private firms allowing them to increase future tolls, there is little stopping the public sector from committing to a schedule of toll increases that allows it to issue long-term, high value bonds. If the politics of toll increases were removed from the equation, the main difference would lie in accounting. Public agencies do not account for depreciation, and it is the tax ownership of the asset that makes these deals appealing to the private sector. Cost savings from private sector management styles or efficiencies, are considered insignificant to the total value of the project.²⁵

Transparency and Fiscal Responsibility

In addition to new sources of revenue and financing options, a growing, thriving transportation capital program in older cities will rely in part on improved transparency and fiscal responsibility in transportation finance. A main problem underlying the growth of debt service in both New York and New Jersey has been the lack of sufficient oversight and accountability of public authorities. There are at least 1,000 public authorities in both states. The authorities issue debt, usually associated with a specific development project, largely outside the regulatory restrictions and oversight applicable to government agencies. They are corporate entities governed by boards of directors appointed by the state. As such, they are not directly accountable to the public but are closely tied to the state governors. In New York, the numbers and variety of authorities without sufficient independent oversight are creating increasing tax burdens for residents. In New Jersey, the problem lies with one specific authority with massive control over that state's transportation finance system. What follows is a discussion of the accountability issues around public authorities in New York and New Jersey.

New York

In New York, public authorities hold \$113.8 billion in outstanding debt. The state Public Authorities Control Board (PACB) reviews the revenue sufficiency of projects prior to approving the debt issued by 11 of the major state public authorities. Most transportation-related debt is not issued by these agencies (although some is issued by NYSERDA).²⁶ These 11 authorities represent 65% of total debt issued by state authorities.

1. New York State Environmental Facilities Corporation
2. New York State Housing Finance Agency
3. New York State Medical Care Facilities Finance Agency
4. Dormitory Authority
5. New York State Urban Development Corporation
6. Job Development Authority
7. Battery Park City Authority
8. New York State Project Finance Agency
9. State of New York Mortgage Agency
10. New York State Energy Research and Development Authority (NYSERDA)
11. Long Island Power Authority

²⁵ As noted by speakers from the private sector at the March 2006 NY DOT conference, *Partnerships for New York: Innovative Transportation Financing and Contracting Strategies: Opportunities for New York State*, Albany, New York.

²⁶ Exclusive of PANYNJ debt. The Citizens Budget Commission of New York estimates that public authorities owe \$227 billion in debt, and emphasize that there is no clearinghouse for this information.

Much of the discussion of public authority reform in New York has been about the other 35% of debt held by public authorities aside from these eleven. A State Comptroller audit recently found dozens of cases of disregard for the rules, wasteful management, and abuses of power among these authorities.²⁷ In 2005, New York State passed legislation that compels a large group of authorities and their subsidiaries to submit contracts for approval from the State Comptroller's office, subjecting them to similar procurement oversight as regular state-issued contracts. It also established the Authority Budget Office (ABO) to enforce the legislation and provide annual reports on the operations, practices and finances of about 300 state and local public authorities.²⁸ In May 2006, a commission appointed by the state governor issued a report calling for additional oversight and empowerment of the ABO.²⁹

In addition to oversight problems with the hundreds of public authorities in the state, there are significant issues with the largest public authority in New York State: the MTA. The MTA is perhaps the public authority most riddled with charges of corruption. In 2003 and 2004, the MTA was publicly accused by state officials of 'cooking the books': keeping two sets of records to justify a fare increase.³⁰ A budget director was fired over the scandal. MTA has also been involved with a scandal over its office space. The authority undertook renovation of an office building supposedly in a less expensive location than where it now has its headquarters. The renovation ended up costing 3 or 4 times more than estimated, mostly due to bribes accepted by the MTA from organized crime elements involved with the contracting. Four MTA officials went to jail over this particular scandal. These scandals apparently did not dampen the public's trust in the MTA as an issuer of debt. Despite the MTA already having an enormous debt burden and opaque, untrustworthy finances in general, voters recently supported the Rebuild and Renew New York Transportation Bond Act of 2005. The bond act allows the MTA to borrow an additional \$1.45 billion for capacity expansion projects.

New Jersey

In New Jersey, one very large public authority is the culprit for the state's transportation finance misdeeds. New Jersey's transportation system is funded in large part by the state's Transportation Trust Fund Authority. The fund is the repository of the state's gas tax revenue, and also receives funds from a few other transportation-related sources. When the fund was established in 1984, the intention was to use it for capital improvements to the system. An original goal was also to keep the Trust Fund sustainable, and that meant bonding caps and other measures that reigned in spending. Over the years, these measures were stripped away until 2006, when New Jersey found itself having dedicated all its anticipated tax revenue that was supposed to feed the Trust Fund to pay debt service for the next 12 years. No funding was left for a new capital

²⁷ New York State office of the State Comptroller, Alan G. Hevesi. "Public Authority Contracting Practices, Billions of Dollars of Public Funds Committed without Adequate Oversight." (February 2006)

²⁸ The Public Authorities Reform Act, which includes this language: The Act creates a new independent public authority inspector general and a new public authority independent budget office, and provides for (i) enhanced oversight of authority operations, (ii) regulation of additional debt issuance, (iii) greater control over the independence of authority board members, public authority procurements, and sales of property, and (iv) regulation of procurement lobbying (which also applies to state agencies).

²⁹ New York State Commission on Public Authority Reform Report. (May 17, 2006)

³⁰ New York City Independent Budget Office, Alan Treffeisen . "New York City Transit's Budget Gap: Reviewing the Numbers." Inside the Budget No. 112 (January 16, 2003)

program. Since Trust Fund monies are used to match federal dollars, this also put at stake over \$1 billion in anticipated – and greatly needed – federal funding to the state. The state’s solution was to again expand borrowing. This time, the state extended permitted bond maturities from 21 to 30 years. It then dedicated a small portion of already-collected additional revenue to the fund, and issued bonds. The state essentially paid for its 5-year capital plan by tying up 35 years of tax revenue. The Fund will run dry again in 2011, when all revenue dedicated to it will be needed for debt service until 2041. One of the reasons borrowing needs are so high is that the funds are paying for some operating costs in addition to capital costs. These so-called capital-to-operating transfers are against the original intent of the Trust Fund, and potentially illegal (although no case has been brought). From an operations point of view, using capital funding often leads to use of more expensive contractors and fewer regular employees, and from a budgeting point of view, the true operating cost of the system is obscured by the use of capital funds; fare-setting, legislative appropriations and other policies which should be based on true operating costs get skewed by the practice.

A 2005 Regional Plan Association report concluded that the Trust Fund is managed with insufficient oversight and accountability. It notes that overly-ambitious capital programs have been approved alongside structurally deficient operating budgets. In addition, it is difficult to get information about how much should be going into or out of the fund: the constitutional language dedicating gas tax and other revenue is loosely worded, and the public does not know how much is collected from its gas and other transportation taxes. One of the main problems is that the Trust Fund Authority was not charged with participating in the development or management of the capital programs at NJ DOT or NJ TRANSIT, and was not to be involved with the management of federal funds. The Trust Fund did not address operating costs, leaving those to the state General Fund. The report concludes that this structural flaw, in addition to years of growing the capital program without commensurate increases in revenue, point to a number of reform measures it encouraged the state to undertake.

One recommended reform measure is to plan for operating and capital needs together, so the two budgets can function together and not in competition. Without resolving the structural deficit, the capital budget will continue to appear to under-perform and the operating side will continue to be starved and forced to steal from the capital side. A Blue Ribbon Commission convened in 2003 recommended weaning the state off of capital-to-operating transfers; the RPA report recommended ending the practice at once. Both groups recommended appointing a politically-independent policy review committee with responsibility for examining both the capital and operating sides of the equation. The Trust Fund authority is currently comprised of the Commissioner of Transportation and State Treasure (both appointed by the Governor), and five appointees by the Governor and Legislature. The Authority is only responsible for issuing bonding within legal limits; a review committee would ensure its practices were consistent with a long-term, stable plan. Other recommendations include having the state issue regular reports on how much revenue is collected through the gas tax and other transportation-related taxes, and limiting bond maturities in the short term until financial solvency is restored.

Conclusion

Older regions, including the large and economically-important New York metropolitan region, are facing a confluence of unfortunate circumstances. Aging infrastructure requires increased investment just as traditionally transportation-related resources are losing value and/or being obligated to future debt service. These problems are occurring in states with already-high debt burdens, limiting the potential for using state revenue for transportation-related funding in the future. At the same time, demand for transportation capacity is growing as people increasingly seek transit-friendly urban environments. Two elements of this equation must change for these urban areas to continue to offer the transportation amenities that make them attractive and viable places. (1) New funding resources and financing mechanisms must be sought that will allow these regions to provide new capacity. There is an opportunity when determining new revenue sources to choose those that reflect a growing understanding of the connection between transportation capacity, economic growth and quality of life in large urban regions. (2) Improved oversight and accountability of the borrowing process, especially of public authorities, needs to be in place to ensure the same mistakes are not made with new revenue sources in the future.

Appendix

Traffic Pricing in London, Stockholm, and New York

Early in 2003, London, which is very similar to New York in size and traffic congestion, successfully implemented a program of motor vehicle charges for entering its CBD during daytime hours. Its stated goal was to reduce traffic, not necessarily to raise revenue (although Transport for London adopted a policy that would direct any surplus revenue from the program to public transportation projects). The congestion charge is paid in advance through a variety of cashless media and is enforced through cameras using automated number plate recognition technology. Photographs of license plates are matched against the pre-paid records. There are heavy fines for non-payment. As a result, traffic volumes are down by 16 percent and motor vehicle travel times have been substantially reduced. Notably, however, the city has not received a major financial windfall from the charge. Initial technical problems produced higher-than-anticipated costs. Operation expenditures have now steadied at about half the gross revenue collected from the charge, or just under 100 million pounds per year.

Stockholm, Sweden is also attempting to ameliorate its traffic problems with a combination of a congestion tax and an extended public transportation network. With a budget of about US \$450 million, Stockholm is currently in the midst of a six month trial of the program. It began on August 22, 2005 with an extension of the public transportation network; the Congestion Tax itself went into effect on January 3, 2006 and ends on July 31, 2006.¹ During this time, all registered vehicles that pass into Stockholm's inner city between 6:30 am and 6:29 pm are required to pay a tax either by using a transponder that uses dedicated short range communications at certain checkpoints or by keeping track of the fees by hand and paying them at a later date.² Like London's system, this is enforced through the use of cameras connected to automated number plate recognition technology. The voters will decide whether or not this tax will be permanently implemented in September 2006.³

According to an expert group summary, the congestion tax generates a substantial net social surplus and will pay for itself within 4 years.⁴ In the first half of the year, traffic volume was cut by 25%; wait times are down 33% during morning rush hour traffic and 50% in the evening. Analysts have speculated that personal injuries due to traffic problems have decreased by about 10%, carbon dioxide emissions are lower, and public transportation use has increased by 4.5%, all while having only a marginal effect on businesses.⁵ Accordingly, opposition to this tax has decreased significantly from a poll taken in December 2004, in which 50% of respondents "were likely" to vote against the

¹ "The Stockholm Trials Start 22 August and 3 January," January 2005, City of Stockholm, 12 June 2006:1-2, <http://www.stockholmsforsoket.se/upload/FaktabladEng050615.pdf>.

² "Trial Implementation of a Congestion Tax: 3 January – 31 July 2006," Vägverket: Swedish Road Administration, 12 June 2006:1-2, http://www.stockholmsforsoket.se/upload/Infomaterial%20VV/Faktablad_Eng_Allm%C3%A4n_v2_3.pdf.

³ Abbas Owoade, Ismail Badarin, and Osama Abu-Safa, *Congestion charge trials in Stockholm 2006*, Feb. 2006, The Royal Institute of Technology: Department of Infrastructure Planning, 12 June 2006:2, <http://www.infra.kth.se/courses/1H1171/papers/OwoadeBadarinAbuSafa.doc>.

⁴ "The Stockholm congestion charging trial charging – what happened?: Expert Group Summary."

⁵ "Stockholm congestion charge 'is working,'" 21 June, 2006, *The Local*, 22 June, 2006, <http://www.thelocal.se/article.php?ID=4129&date=20060621>.

referendum to make this tax permanent,⁶ to a poll taken in May 2006 which finds that only 30% of people would vote “no” to the referendum.⁷

Other cities, both in the United States and around the world, have successfully instituted charges for road use, either on clogged roads or to enter core areas, by charging either a flat rate or by using variable pricing to relieve peak period traffic. These areas have made use of technological advances to allow for cash-free, non-stop fee collection systems. In the New York region, three of the area’s four largest toll agencies have put in place some form of time-of-day variable pricing: the Port Authority at its three Hudson River crossings, the New Jersey Turnpike Authority throughout its entire system, and the New York State Thruway Authority at the Tappan Zee Bridge (for trucks only). At 10 locations, high-speed, barrier-less toll collection has been implemented as a complement to regular electronic toll collection, which is already widely used in the region. This allows for the collection of tolls at a fast pace, adding capacity while not slowing traffic.

⁶ Owoade, Badarin, and Abu-Safa 5.

⁷ “Majority Favour Congestion Charge,” 17 May 2006, *The Local*, 13 June 2006, <http://www.thelocal.se/article.php?ID=3825&date=20060517&PHPSESSID=bf3cd5d25a5a9e5e2dd0e2c65a0d47bf>