8

FINANCING PLAN 2035

This plan has outlined the significant infrastructure investment needs currently facing the NJTPA region and has identified a range of highway, transit, and multimodal improvement projects that will address those needs. The Plan 2035 Scenario of investments charts a course between current trends (the Baseline Scenario) and the complete set of projects that would be undertaken were project costs and the availability of funding not an issue (the Aspirational Scenario). But of course, project costs and funding availability must be a consideration in this plan, and this chapter will address the key funding assumptions and expenditures underlying Plan 2035.

Although the benefits of the proposed highway, transit, and multimodal investments in this plan will be great, the projected costs are also great. Major transportation infrastructure projects in northern and central New Jersey are highly challenging, as they occur in a heavily built and environmentally sensitive region.

North Jersey's heavily traveled, aging transportation system poses a difficult funding challenge to the region. Route 22, Springfield, Union County.

These projects take many years from planning through design and engineering to construction and operation, particularly those projects which are seeking federal funding support. Costs for labor and key construction materials (concrete and steel) are expected to rise faster than existing revenue sources, and the NJTPA expects that long-run petroleum costs will also rise faster than inflation, increasing costs further. Finally, right-of-way acquisition for congestion mitigation projects is both time-consuming and expensive in the NJTPA region. All of these issues together mean that the NJTPA region must secure significant and growing revenue sources if it wants to undertake these costly proposed projects.

The situation is exacerbated by both current and long-term fiscal woes. New Jersey's Transportation Trust Fund (TTF) is close to exhaustion. The current recession is driving down revenues, and the credit crunch is making financing of projects difficult. Thus, even when the current economic crisis recedes, the state and the region will be starting from a lower revenue base than had been previously projected. And the long-term projections for growth in gas tax revenues are not strong—a combination of reduced growth in vehicle miles traveled (VMT) and increases in automobile fuel efficiency will continue to prevent gas tax revenues from keeping up with investment needs.

In this environment, NJTPA and its statewide and local partners must carefully establish priorities and must carefully manage limited resources. If the region ends up in an environment like the Baseline Scenario, with funding continuing on its current trend, then the region will face very difficult investment choices and a reduction in the quality of its transportation network. Conversely, if the NJTPA region wants to reach its full Aspirational Scenario goals for investment in highways and transit, then very substantial changes will need to be made about how transportation is funded in the state. The Plan 2035 Scenario offers a path between these two extremes—some worthy projects will have to be deferred, and some pain from additional taxation or other revenue raising measures will still be required, but the region will make progress on its overall transportation goals.

While the funding challenges are great, elected officials in congress and the state legislature have the authority and tools available to address the funding needs. Repeatedly in the past they have done so. The NJTPA is fully confident that, recognizing the state's pressing needs, adequate financing will be provided over the next 25 years.

This chapter of Plan 2035 presents forecasts of future funding. The funding for the recommended improvement projects will come principally from the state and various federal government sources. This chapter presents and discusses the assumptions underlying the federal and state funding projections. In the final section of the chapter, potential new and innovative funding sources for the region are also reviewed.

Toll plaza on New Jersey Turnpike, Middlesex County.

Investment Strategies

In developing the financial assumptions and scenarios that underpin Plan 2035, the NJTPA drew upon two complementary efforts to develop investment strategies to guide long term transportation planning and investment.

The first is the NJTPA Regional Capital Investment Strategy which was initially developed for NJTPA's 2030 Regional Transportation Plan, approved in September 2005. This RCIS has been carried forward into Plan 2035 (with minor modifications regarding environmental issues as noted in Chapter 7, Transportation and Land Use). The RCIS includes eight investment principles and sets goals for levels of investments among broad categories of funding. For example, maintenance and preservation investments are to be allocated 60 percent of available funding. The eight principles are listed in Chapter 2 (Developing the Plan) and the full RCIS is provided in the back of this plan.

° The second source of guidance for long term investment is the 2010 Statewide Capital Investment Strategy (SCIS). This is the product of a collaborative effort in 2009 involving NJDOT, NJ Transit, the New Jersey Turnpike Authority (NJTA), the South Jersey Transportation Authority (SJTA) as well as the state's three Metropolitan Planning Organizations—the NJTPA, the South Jersey Transportation Planning Organization and the Delaware Valley Regional Planning Commission.

The SCIS provides investment recommendations for transportation program categories based upon goals, objectives, and performance measures. The SCIS is a requirement of the Transportation Trust Fund Authority Act of 2000. The goal of the SCIS is to develop an annual spending level that can achieve the performance objectives of the NJDOT, NJT, NJTA and SJTA. Statewide financing scenarios were developed to determine performance levels based on different levels of funding, and these alternative scenarios help to provide a context for New Jersey's overall transportation needs. These statewide SCIS scenarios underpin the three scenarios developed for Plan 2035 as discussed below.

Issues and Uncertainties

Long-term planning in the current environment is difficult, and the nation may be at an "inflection point" regarding surface transportation. There are significant uncertainties regarding transportation policy (at both the federal and state levels); the economy (including petroleum prices and private investment in transportation facilities); and the environment (including climate change and carbon taxes). The upcoming federal surface transportation reauthorization is likely to address some of these uncertainties, leading to major changes in transportation priorities and funding, but this is difficult to predict at the current time. Plan 2035 incorporates the most current thinking on these key issues from NJTPA and its partner agencies, but also recognizes the many unknowns facing the region that will only be resolved over time.

Some of the key funding issues facing the region in creating Plan 2035 include:

- *Stimulus Funding:* On February 17, 2009, President Obama signed into law the American Recovery and Reinvestment Act (ARRA). The ARRA is a remarkable effort to revive the nation's economy. Its highest priority is to create new jobs and maintain existing ones, while at the same time addressing the needs of the nation's deteriorating transportation infrastructure. For the State of New Jersey, this legislation is providing over $1 billion for the State's transportation infrastructure needs, with approximately $650 million to NJDOT for highway and bridge projects and approximately $425 million for NJ Transit projects.

  Congress included a provision in the legislation that sub-allocated funds to MPO regions for their direct oversight. The NJTPA, as one of three MPOs in New Jersey, distributed $124 million among its 15 member subregions based on the formula already used for annually distributing planning funds to the NJTPA subregions. Congress created strict requirements for all projects receiving ARRA funding. For the NJTPA projects funded through sub-allocation, this means obtaining federal authorization by March 2, 2010. Federal

The American Recovery and Reinvestment Act funded dozens of projects in the region. Lodi, Bergen County.

Transportation creates jobs, from the construction sector to the goods movement industry. Madison, Morris County.

regulations specify that projects must meet environmental requirements, federal design and engineering standards, and be located on roads eligible for federal aid. In order to address these requirements and obtain authorization within one year, these projects must already have environmental clearances and permits in place or be able to quickly secure them.

Meeting all of these requirements and successfully obtaining federal authorization will help position the State to be eligible for future ARRA funds if they become available.

- *High Speed Rail:* The ARRA legislation also included an $8 billion allocation for High Speed Rail investment. While the Northeast Corridor is not designated as a high-speed rail corridor, improvements to the line are eligible for ARRA funding under the intercity passenger rail and congestion programs. At the time of Plan 2035's development, these funds had not yet been applied for; however, the plan can and will be amended if ARRA funds are received for projects in the North Jersey region.

- *SAFETEA-LU Reauthorization:* Reauthorization of the federal surface transportation legislation is one of the major challenges facing the current Congress. The National Surface Transportation Policy and Revenue Study Commission had many sweeping suggestions for changing federal transportation funding, including:
  - a complete reorganization of federal funding programs;
  - a significant increase in the federal fuel tax, plus indexing the fuel tax to inflation;
  - significant new flexibility for utilization of tolling and congestion pricing;
  - increased use of public-private partnerships for project delivery; and
  - examination of a vehicle miles traveled (VMT) fee as a supplement or even long-term replacement for the fuel tax.

  It is difficult to predict whether such recommendations will ultimately become part of the new legislation, and thus what federal revenues can be expected to flow to the NJTPA region. Given this uncertainty, the three plan scenarios make different assumptions regarding the total growth in federal transportation funding. In the Baseline Scenario, which has very conservative assumptions, federal program funding growth is well below inflation, meaning funding declines substantially in real terms; in the Plan 2035 Scenario, available funding grows somewhat faster than inflation and is in line with the overall funding increase during the previous reauthorization (from TEA-21 to SAFETEA-LU); and in the Aspirational Scenario, optimistic program changes are assumed and federal funding grows significantly faster than inflation. It is also difficult to predict how much federal funding will be available for major transit investments. This plan assumes that the current Federal Transit Administration (FTA) New Starts program continues in essentially its current form, but the three scenarios project different levels of New Starts funding for North Jersey.

- *Economic growth, demographics and travel demand:* Relative to other states, New Jersey has an aging population and a relatively high overall tax burden. The aging population may cause existing revenue sources to grow more slowly than in other states, while the tax burden may make it more politically difficult to cap-

ture any new revenue streams for transportation. However, New Jersey continues to derive economic strength from its position as a focal point for international trade and domestic goods movement, as well as being a destination for immigrants to the United States. These factors should help with sustained revenue growth. NJTPA has utilized the most recent demographic projections for population and employment in Plan 2035. While the uncertainty accompanying these projections must be acknowledged, as discussed in Chapter 2 increases in travel demand on all aspects of the transportation network are a reasonable expectation for the future, requiring the region to address potentially greater congestion, wear to roads and bridges, requirements for expanded transit, etc. These increasing needs provide the context for the scenarios considered in this chapter—that is, any level of future funding will have to address a steadily growing agenda of needed investments.

- *Mass Transit Tunnel (MTT):* The MTT is the single most crucial transit investment for the NJTPA region's long-term success. Its completion will not only provide critical redundancy for the existing 100-year-old tunnel under the Hudson River to Manhattan, but it will also allow for significant improvements to existing rail service and the introduction of new services. The local funding for the construction of the MTT, which matches the federal New Starts funding, is being provided not only by NJ Transit and NJDOT, but also by the Port Authority of NY and NJ and the New Jersey Turnpike Authority. In May, 2007, the NJTPA Board of Trustees approved a resolution to reallocate $1 billion over 10 years (2008-2017) to the MTT. This would be accomplished by flexing federal highway dollars to the transit portion of the TIP. An equal amount of state transportation funds would be allocated to NJDOT from NJ Transit. Completion of the project is projected to help create a substantial increase in transit trips under all three scenarios. However, once the MTT project is completed, significant additional annual operating funds will be required to support the new and expanded rail services.

The economic downturn and more fuel-efficient vehicles have led to less revenue from the state and federal motor fuels taxes.

Revenue Assumptions and Projections

The NJTPA region currently has approximately $2.5 billion in state and federal capital funding available for transportation purposes each year, although in 2009 the region also received one-time stimulus (ARRA) funding as discussed above. The region also receives more than $600 million in additional state and federal funds to support its portion of the operating costs of NJ Transit. The NJTPA has worked closely with NJDOT and NJ Transit to assess the long-term funding and expenditure needs for the region and to determine the appropriate assumptions about future transportation funding. Separate funding assumptions have been developed for each scenario (Baseline, Plan 2035, and Aspirational), and these varying levels of funding then support varying levels of capital and operating investment in each scenario.

It is important to note that new federal regulations adopted in 2007 require that MPO long range transportation plans show financial projections in year-of-expenditure (YOE) dollars. That is, MPOs must now explicitly account for expected future inflation and its impacts on both their forecasted revenues and the costs of their future projects. In accordance with the regulations, this plan provides revenue and cost estimates in YOE dollars, in contrast to previous plans which showed financial projections in current year dollars.[1] However, in areas where it may assist comprehension, both YOE and current year (2009) dollars may be presented and discussed in this Plan.

[1] The Plan assumes an average annual inflation rate of 3 percent when converting current year expenses and revenues to year-of-expenditure figures (and vice versa). There is of course uncertainty regarding the rate of future long-run inflation, and projections both above and below 3 percent have been put forward by various economic forecasting bodies. However, this Plan's assumption matches the assumption of core inflation at 3 percent per year from the Mass Transit Tunnel financial plan submitted to the Federal Transit Administration (FTA) as part of the New Starts grant application process, and NJTPA believes it to be a reasonable planning assumption.

Funding Assumptions Common to All Three Scenarios

The Mass Transit Tunnel (MTT) project has been included in all three scenarios, meaning that Plan 2035 assumes that NJ Transit will be awarded the approximately $3 billion in federal discretionary funding (through a Full Funding Grant Agreement, or FFGA, with the Federal Transit Administration) that is included in NJ Transit's most recent MTT financial plan. Other contributions to the MTT will include $3 billion in capital funding from the Port Authority of New York and New Jersey (PA-NYNJ) and $1.25 billion from the New Jersey Turnpike Authority.

All three plan scenarios also assume that state capital funding will remain flat through 2012 (less any one-time stimulus funding) as a result of the current economic crisis. State funding in the three scenarios then diverges after 2012. All three scenarios assume that some level of New Starts funding would become available for transit initiatives following the opening of the MTT in 2017.

Baseline Capital Funding Assumptions

In the Baseline Scenario, which assumes a continuation of recent funding trends, state capital funding remains flat through 2012 and then increases 3 percent annually through the plan horizon of 2035. (This results in an average annual growth rate over the entire plan period of 2.7 percent.) With inflation projected at approximately 3 percent per year during the plan period, the 2.7 percent average annual increases in state funding in the Baseline Scenario will be consumed by inflation, and the purchasing power of the state capital funding will remain essentially flat throughout the plan.

Similarly, the Baseline Scenario assumes very minimal increases in federal funding through the existing surface transportation legislation. This scenario assumes that federal program funding is flat in the upcoming reauthorization, but that the region receives a 10 percent increase every six years starting in 2017 (matching the federal reauthorization cycle). At 3 percent annual inflation, this translates into a reduction in spending power for the region. This increase is well below the approximately 40 percent increase (in year-of-expenditure dollars) in average annual funding that occurred for New Jersey between TEA-21 and SAFETEA-LU. The assumption that federal funding will be flat in the near-term and then grow only at 10 percent each reauthorization is conservative and matches the assumptions about federal funding in the SCIS. In addition, following the receipt of the New Starts funds for the MTT, the Baseline Scenario assumes very minimal additional discretionary transit funding for North Jersey—only an average of $30 million per year, most likely for the support of Small Starts projects such as bus rapid transit (BRT).

The total capital funding available under the Baseline Scenario (for the period 2010 to 2035) in year-of-expenditure dollars is $92 billion. Assuming 3 percent annual inflation, this translates into slightly less than $63 billion in current year (2009) dollars. Tables 8-1A and 8-1B show these funding levels in comparison to the Plan 2035 and Aspirational funding scenarios, as described below.

Plan 2035 Capital Funding Assumptions

The Plan 2035 Scenario envisions more transportation funding from both the state and the federal government as compared to the trends embodied in the Baseline Scenario. The average annual funding increases in the Plan 2035 Scenario are intended to be robust but reasonable—fulfilling critical regional requirements while remaining politically feasible. In this scenario, capital funding will increase at an average rate of 1.2 percent annually between 2009 and 2035 in 2009 dollars. With inflation assumed at 3 percent per year, this will require average annual YOE spending increases of 4.2 percent per year. At the same time, federal program funding is projected to increase by 35 percent in YOE terms every six years, which is more in line with the prior funding increase from TEA-21 to SAFETEA-LU. [2] This translates to 2.0 percent average annual growth in real terms, or 5.0 percent in year-of-expenditure terms—again, a feasible rate of growth if transportation becomes a national priority. Finally, North Jersey is assumed to still be in competition for additional significant New Starts transit funding in this scenario, and to receive $100 million per year beginning in 2018 (following the completion of the MTT), which will grow with inflation.

The total capital funding available under the Plan 2035 Scenario (for the period 2010 to 2035) in year-of-expenditure dollars is $141 billion. Assuming 3 percent annual inflation, this translates into

[2] Federal funding growth for New Jersey between TEA-21 and SAFETEA-LU was not the same for highways and transit. Highway program funding increased approximately 30 percent, while transit funding increased approximately 50 percent. For the Plan 2035 Scenario, it seems more reasonable to assume an overall funding increase (35 percent) toward the lower end of that range.

approximately $91 billion in current year (2009) dollars. The total increase in funding in the Plan 2035 Scenario over the Baseline Scenario is approximately 46 percent.

It should be noted that this 46 percent increase over the life of Plan 2035 will need to be phased in over time. Thus, the earlier years of the plan will see a lower annual average funding, which is then offset in the later years of the plan.

Aspirational Capital Funding Assumptions

Achieving the proposed investments in the Aspirational Scenario will require a very substantial increase in both federal and state funding. State funding will need to grow by an average of 4.8 percent annually in 2009 dollars across the entire plan period, or by approximately 7.9 percent annually in YOE dollars. This would need to be matched by increases in federal program funding of 50 percent every six years in YOE terms (or 6.9 percent annually), providing a average annual increase of 3.8 percent in 2009 dollars, and by the post-MTT New Starts funding of $100 million growing at 5 percent annually rather than only at the 3 percent rate of inflation.

The total capital funding available under the Aspirational Scenario (for the period 2010 to 2035) in year-of-expenditure dollars is $209 billion. Assuming 3 percent annual inflation, this translates into approximately $130 billion in current year (2009) dollars. The total increase in funding in the Aspirational Scenario over the Baseline Scenario is approximately 107 percent.

Tables 8-1A and 8-1B summarize the capital funding assumptions in each of the three scenarios over the plan period from 2010 to 2035 in 2009 dollars and Year of Expenditure dollars. Table 8-1A shows the cumulative totals of funding for each scenario over 25 years, starting with the $2.6 billion available in 2010 and adding in the assumed state and federal funding increases over the period. The YOE totals also include a 3 percent increase each year for inflation. Table 8-1B shows the average annual growth rates under each scenario. Figures 8-1 through 8-3 graph annual funding levels and include funding received from various sources. The large bump represents the MTT project, which makes up a significant fraction of overall funding. When the MTT is completed by 2017, total funding levels return to their underlying trend values in each scenario.

Operating Funding Assumptions

While capital funding is critical for the repair and replacement of the existing transportation network and the completion of new capacity investments, NJDOT and NJ

Table 8-1A
Summary of Capital Funding Assumptions:
Cumulative Total of Funding Available 2010-2035 (Billions of Dollars)

	Baseline	Plan 2035	Aspirational
Year-of-Expenditure Dollars	$92.0	$141.1	$209.2
2009 Dollars	62.6	91.4	129.6
Increase Over Baseline		46%	107%

Table 8-1B
Summary of Capital Funding Assumptions:
Average Annual Growth Rates

Year-of-Expenditure Dollars	Baseline	Plan 2035	Aspirational
State	2.7%	4.2%	7.9%
Federal	1.1%	5.0%	6.9%
Total	**2.0%**	**4.7%**	**7.4%**
2009 Dollars	**Baseline**	**Plan 2035**	**Aspirational**
State	-0.2%	1.2%	4.8%
Federal	-1.9%	2.0%	3.8%
Total	**-1.0%**	**1.6%**	**4.3%**

Note: Federal program growth shown is an average annual rate, although funding increases occur every six years

Figure 8-1A
Annual Capital Funding for NJTPA Region:
Baseline Scenario (Base Year 2009 Dollars)

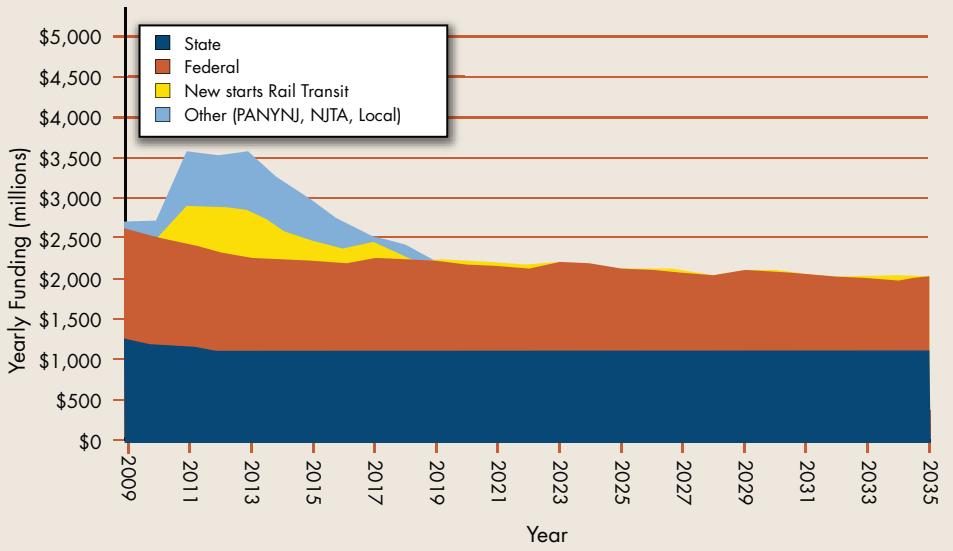


Figure 8-1B
Annual Capital Funding for NJTPA Region:
Baseline Scenario (Year of Expenditure Dollars)

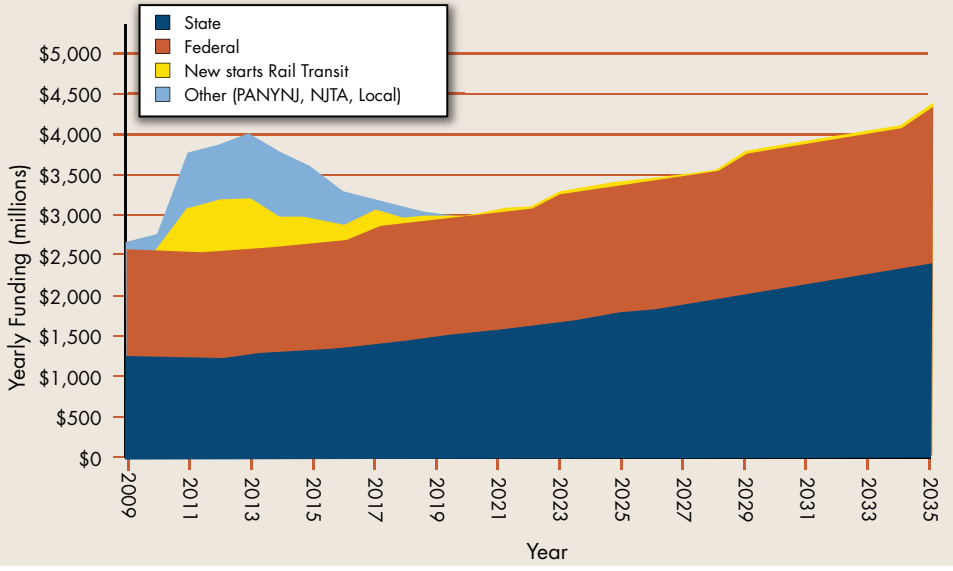


Figure 8-2A
Annual Capital Funding for NJTPA Region:
Plan 2035 Scenario (Base Year 2009 Dollars)

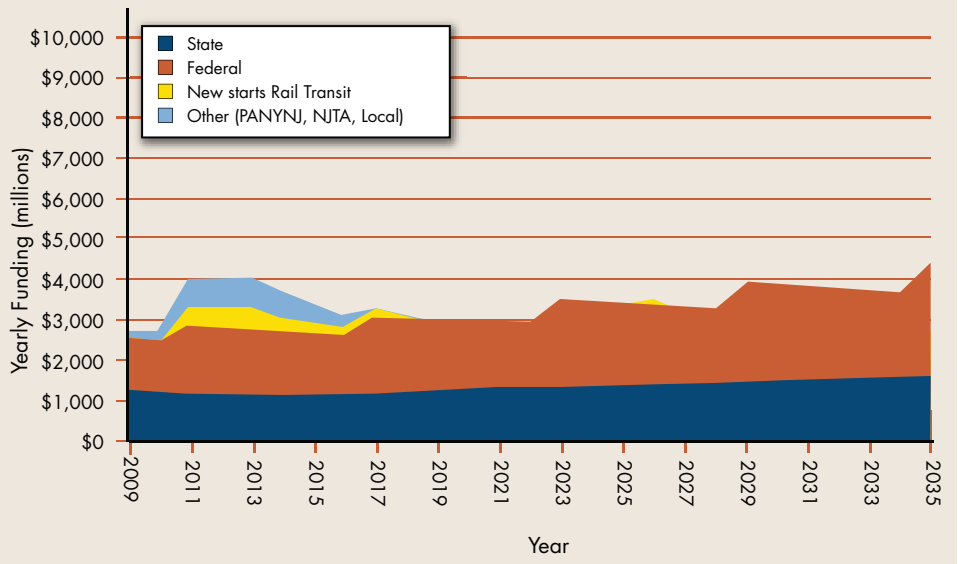


Figure 8-2B
Annual Capital Funding for NJTPA Region:
Plan 2035 Scenario (Year of Expenditure Dollars)

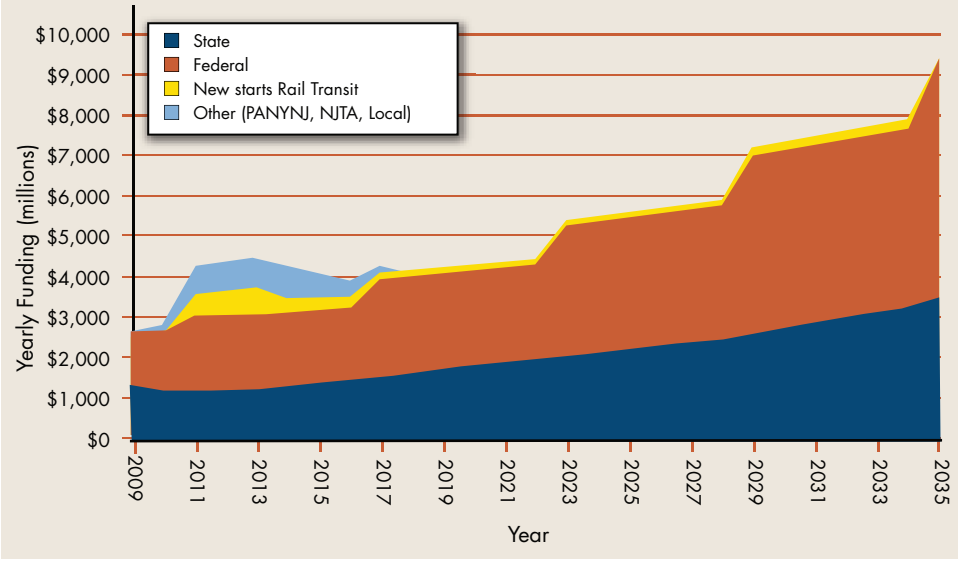


Figure 8-3A
Annual Capital Funding for NJTPA Region:
Aspirational Scenario (Base Year 2009 Dollars)

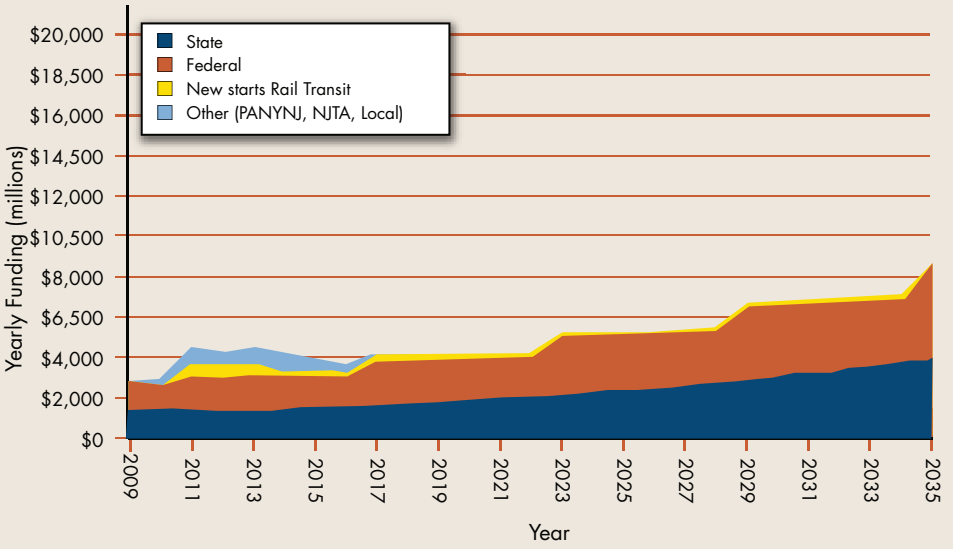
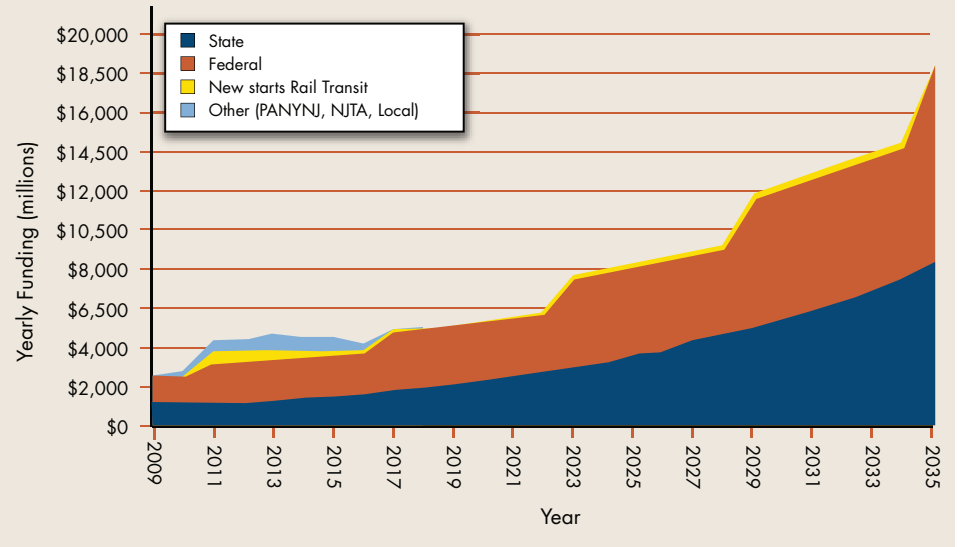


Figure 8-3B
Annual Capital Funding for NJTPA Region:
Aspirational Scenario (Year of Expenditure Dollars)



Transit also require and receive significant state appropriations for on-going operations.

For NJDOT, this funding covers a variety of critical areas such as snow removal, pothole filling, maintenance of roadside lighting and vegetation, inspections, technical studies, and general administrative costs. The 2008 appropriation for NJDOT operations was approximately $100 million, a relatively small amount compared to capital expenditures, but NJDOT continues to face cut-backs in its operating support, and over time these cuts will begin to have a negative impact on the ability of NJDOT to monitor and maintain the roadway and bridge networks. This reduction in monitoring and regular maintenance leads to higher long-term capital costs.

For NJ Transit, operating funding comprises a much larger share of its total expenditures, and operating funding gaps are a much greater long-term concern. NJ Transit is one of the largest public transit agencies nationwide, and, one of the most efficient, with over 51 percent of its operating budget supported by passenger fares and other system-generated revenues (such as advertising and parking fees). NJ Transit's 2009 projected operating budget is over $1.7 billion, and the NJTPA region accounts for approximately 80 percent of that total, or $1.4 billion. The expenses which are not covered by system revenues are supported by yearly appropriations from the state and by various federal funding sources, and the NJTPA region receives over $600 million of that funding annually.

The primary concern facing NJ Transit in the long-term is continued support for operations. In recent years, NJ Transit has also periodically been required to impose fare increases to make up for shortfalls in operating funds. It has also had to divert a portion of capital funds each year to support its operations. When the MTT project is completed and a new and expanded rail operating plan is fully in place, NJ Transit's operating budget will need to increase by an additional 20 percent over current levels, not including any inflationary increases. (This equates to slightly less than a 1 percent average annual increase in real or base year costs.) When the effects of inflation are included, operating costs will double by the end of the plan period. Despite the benefits of a robust regional transit system, and despite the fact that MTT services are projected to have a modestly positive fare box recovery ratio (i.e., that added fare revenues will exceed incremental operating costs), the current trend in operating funding support will not be sufficient to support the post-MTT transit system. Without significant additional funding for operations, the agency may need to adopt a slower incremental approach to implementing service changes and improvements and continue to allocate some capital funds, as allowed under Federal law, to cover major maintenance needs, in order to keep the trains and buses running. Plan 2035 calls for state action to provide adequate and stable operating funding for both NJ Transit and NJDOT.

Assessment of Funding Scenarios

As described above, the NJTPA region will require a substantial and sustained funding increase over current trends in order to move from the Baseline to the Plan 2035 or Aspirational Scenarios. The Plan 2035 Scenario, the NJTPA asserts, is a realistic basis for future transportation investment. The substantial increase it includes represents the fundamental funding needs of the region. In the past, the state and the federal government have stepped up to support those needs, and the NJTPA expects the them to continue to do so in the future. In particular, at the federal level, given the recent high-profile efforts of groups such as the National Surface Transportation Policy and Revenue Study Commission (noted above), as well as the renewed focus on infrastructure following the 2007 collapse of the I-35W bridge in Minneapolis, NJTPA believes it is reasonable to assume that the upcoming reauthorization will identify new revenue sources for transportation and allow for program funding growth that increases purchasing power and begins to address the major infrastructure needs facing the nation.

At the state level, the Plan 2035 funding assumptions also require a significant increase in funding over current trends. The final section of this chapter reviews specific revenue options that might be pursued to achieve this level of funding, but the broader need for a new commitment to transportation funding has been well established, going back to New Jersey's 2003 Blue Ribbon Transportation Commission Report and many earlier studies. Put simply, the revenue assumptions in the Plan 2035 Scenario do not represent funding for a "wish list" of extravagant new projects, but instead represent a necessary correction to years of under-funding of the existing transportation network. Even in the Plan 2035 Scenario, revenues will overwhelmingly be used simply to maintain, rehabilitate, and replace key transportation assets in the North Jersey region, and to plan for less will result in highway and transit networks that cannot keep up with the needs of the region's residents and businesses. Moreover, without a sustained commitment to increased funding, the region will face very difficult

choices which may include the need to restrict or limit use of infrastructure and ration the limited funds available among desired investments.

Expenditures & Investments

The state and federal funding that NJTPA projects to be available under the three scenarios will provide the means to implement the planned highway, transit, and multimodal improvement projects included in Plan 2035. As stated previously, all three scenarios assume that the MTT will be completed as planned. The next section will outline some of the potential policies and new revenue sources that will need to be implemented to achieve the assumed levels of funding. This section will summarize the investment level in each scenario and the expected performance outcomes—greater detail is available in Chapter 5 (Scenario Planning) and the plan appendices.

Baseline Expenditures

The Baseline assumes an investment level for both highways and transit below what is needed to maintain the condition level of the existing networks, so network performance worsens and the backlog of needed investment will grow—for example, the number of deficient bridges in the NJTPA region will increase. The Baseline also reflects no new bus or fixed guideway transit services in the region other than those already programmed, and it assumes that effective highway capacities are reduced by 5 percent over their current levels due to reduced levels of infrastructure maintenance and preservation.

Plan 2035 Expenditures

As noted earlier, the Plan 2035 Scenario is intended as a "middle ground" scenario requiring some additional new funding which then allows the region to maintain its existing infrastructure while also improving capacity and system performance. There is some capital available within the Plan 2035 Scenario to allow transit or highway improvement to advance in an incremental way. Transportation investment in the existing network in the Plan 2035 Scenario is modeled as a mid-point between the Baseline and Aspirational Scenarios. This investment level allows the region to maintain and slightly improve existing system performance, depending on the particular asset category or program area.

The Plan 2035 Scenario includes the completion of the MTT and a modest (5 percent) increase in bus services in the region (representing investments such as in new shuttles or connectors, increased frequency on bus routes or the implementation of bus priority treatments or BRT on critical corridors). However, the rail transit system (commuter rail and light rail) assumed for travel demand modeling purposes to evaluate the Plan 2035 Scenario is identical to that of the 2035 Baseline Scenario. A number of other future rail projects in the region are now undergoing planning and environmental analysis and may be candidates for federal funding. It is expected that at least the initial operating segments, if found justified and feasible through detailed study, could be accomplished under the level of funding assumed for the Plan 2035 Scenario. However, since neither mode, alignment, specific technol-

Table 8-2
Comparison of Investment in RCIS Categoriess
(Average annual millions of 2009 dollars)

RCIS Summary Category	RCIS%	Baseline		Plan 2035		Aspirational	
Bridges	15%	$539	22%	$682	19%	$826	17%
Road Preservation & Enhancement	20%	516	21%	808	23%	952	19%
Road Expansion	3%	43	2%	98	3%	98	2%
Transit Preservation & Enhancement	40%	1,038	43%	1,313	37%	1,928	39%
Transit Expansion	16%	143	6%	323	9%	744	15%
Freight, ITS, TDM, Safety, Bike/Ped	7%	125	5%	282	8%	422	8%
Total		**$2,404**		**$3,506**		**$4,970**	

ogy to be used and other factors are determined at this point, the travel demand modeling for the Plan 2035 Scenario did not include these possible rail investments. Additionally, under this scenario, modest congestion mitigation efforts will occur on the highway network in the region, which will have the effect of holding capacity constant at current 2009 conditions (in contrast to the Baseline Scenario, this scenario does not assume any degradation of highway capacity due to the effects of not maintaining highway pavements and bridges at a State of Good Repair).

Aspirational Expenditures

The Aspirational Scenario marks the upper bound for the region—that is, what investments could potentially (but still feasibly) be made if significant new funding were realized. In this scenario, in addition to significantly improving existing system performance, a major investment would be made in new services. Effective highway capacities would increase by 5 percent, and major transit improvements would occur—a 25 percent increase in frequency on non-NYC buses; added peak hour frequencies on Hoboken-bound rail services; and a doubling of off-peak rail service network-wide. Additional new transit services, currently under study, may become sufficiently defined during the life of the Plan to be implemented under the Aspirational Scenario. Significantly more highway congestion relief (in the form of intersection improvements and selective widenings) occurs in the Aspirational Scenario, and major fixed guideway transit corridor investments are assumed, although the exact alignments and modes are not determined.

Comparison to RCIS

Table 8-2 compares the three plan scenarios above to the NJTPA's strategic preferences for investment as expressed in its Regional Capital Investment Strategy (RCIS). As noted at the beginning of this chapter, the RCIS expresses the NJTPA's long-term preferences for how regional transportation dollars should be allocated across major program areas. In this case, the comparison of the scenarios to the RCIS makes it clear how critical near-term needs can sometimes be in tension with long-term desires.

It is clear from the Baseline that current trends in funding and infrastructure condition have shifted investment away from transit expansion and into bridges and preservation of transit infrastructure. Despite the expressed preferences within the NJTPA region, the maintenance of the existing system (particularly bridges) must take precedence over expansion. In the Plan 2035 Scenario, there is significant growth in all areas as compared to the Baseline, but the shares have shifted. Bridge investment is reduced as a share of the total, reflecting better bridge conditions and investment in the smaller categories of freight, ITS, safety, TDM, and bike/ped has more than doubled. Transit expansion funding has also more than doubled, raising its share, but it remains below the RCIS goal, again reflecting the need to attend to maintenance and other needs in response to the performance impacts estimated through the scenario modeling. Road expansion investment, while still modest overall, is larger than the preference expressed by the NJTPA Board of Trustees in the RCIS, highlighting the difficulty of balancing so many competing needs in the region. Finally, in the Aspirational Scenario, we see investment shares that are nearly identical to those expressed in the RCIS, as transit expansion becomes a major piece of the investment.

Thus, the Plan 2035 Scenario serves as a realistic approach to allocating the region's limited funding, by balancing the needs of the existing system with modest expansion efforts. If regional funding turns out to be much worse than expected (for example, if the current recession persists for many years), then the Baseline Scenario can guide the region. Conversely, if the funding situation turns around and becomes much more positive, as in the Aspirational Scenario, then the region can undertake a broad reallocation of funding and truly achieve the goals as laid out in the RCIS.

Table 8-3 demonstrates federally required "fiscal constraint" for Plan 2035. It shows that the projects and programs included in the Project Index can be fully funded under the revenues in the Plan 2035 Scenario. These projects and programs will be implemented over the near, mid and long-term. It also indicates that the remaining funding capacity will be allocated according to the priorities established in the NJTPA RCIS and the Plan 2035 Scenario.

The level of remaining funding capacity is reasonable as many long term project needs have yet to be determined. The current list of projects in the Plan 2035 Project Index have gone through extensive planning and project development and have project costs and limits that are known. The next generation of projects has yet to be determined but will fit into these RCIS categories as scopes and future costs of projects take form.

Table 8-4 demonstrates that very significant amounts of new operating funding are going to be needed to support

Table 8-3
Fiscal Constraint of the Plan 2035 Scenario
(Millions of Year of Expenditue dollars)

	Plan 2035		NJTA Expeditures Already Specified[1]				
Program Category	Total Revenue	% of Total	Near-Term[2]	Mid-Term[3]	Long-Term[4]	Total Specified	Remaining Capacity
Bridges	$27,456	19%	$2,497	$9,293	$13,868	$25,658	$1,798
Road Preservation & Enhancement	32,521	23%	1,839	3,923	9,426	15,187	17,334
Road Expansion	3,948	3%	389	1,653	481	2,524	1,424
Transit Preservation & Enhancement	52,816	37%	191	9,427	22,074	31,693	21,124
Transit Expansion	12,982	9%	45	9,291	1,062	10,398	2,584
Freight, ITS, TDM, Safety, Bike/Ped	11,366	8%	1,130	2,706	7,155	10,992	374
Total (2010-2035)	**$141,089**	**100%**	**$6,091**	**$36,293**	**$54,067**	**$96,452**	**$44,637**

1 - Projects with associated cost estimates listed in the Project Index.
2 - Projects that can be completed within 1-4 years and contained in the 4-year Transportation Improvement Program and Authority projects.
3 - Projects scheduled to be completed within a 5-10 year period. This includes the six out-years of the State's 10-year Capital Construction Program and those in the final phase (Preliminary Design) of the Project Development Work Program and Authority projects.
4 - Project and program estimates during the final 15 years of the Plan.

Table 8-4
Comparison of Annual Operating Cost Requirements for NJ Transit in Each Scenario
(Millions of YOE Dollars)

	2009	2035		
Annual Operating Expenses	Existing	Baseline	Plan 2035	Aspirational
Existing Services				
Rail	$551	$1,416	$1,416	$1,416
Bus	470	1,179	1,179	1,179
Light Rail	62	605	605	605
Administration	281	605	605	605
Baseline New Services				
Committed Rail Service Initiatives		40	40	40
Access to the Region's Core		237	237	237
Plan 2035 & Asirational Services				
New Bus & Rail Services			59	648
Total	**$1,364**	**$3,699**	**$3,758**	**$4,347**
Cost Increase vs. Baseline ($)			$59	$648
Cost Increase vs. Baseline (%)			2%	189%

2009

NJ Transit's operations. Just to support the continuation of existing services plus the MTT and a few already committed rail service initiatives (e.g., Meadowlands Rail Link, Lackawanna Cutoff MOS to Andover) will require YOE operating funding to grow at an average of 3.9 percent annually, almost a full percentage point above inflation. (This assumes that the proportion of expenses covered by passenger fares stays roughly constant across the years of the Plan.) The increased expenses and revenues associated with the bus service added in the Plan 2035 Scenario are fairly modest (only 2 percent above the Baseline), but the Aspirational Scenario—with its significant non-NYC bus service increases and improvements to both peak and off-peak rail—requires another 18 percent boost in funding compared to the Baseline. As stated previously, additional operating funds will be needed to support important bus and rail initiatives currently under study,

Potential Revenue Sources

A range of statewide transportation funding options was presented as part of Plan 2035's public outreach process. Table 8-5 shows a modified version of those funding options, and the table assumes that the NJTPA region would receive approximately 75 percent of any funding source that was implemented statewide, in keeping with the estimates used for allocating highway and transit funding.

The figures in Table 8-5 are intended only as rough guides. The gas tax, VMT tax, and sales tax figures assume minimal demand elasticity—that is, that automobile travel or retail purchases would not drop significantly in response to any of those tax changes. A demand elasticity of -.10 is assumed for the New Jersey toll road system (meaning that a 10 percent toll increase would cause a 1 percent decrease in toll road patronage), and an elasticity of -0.20 is assumed for NJ Transit services. Significant study would of course be required before the actual implementation of any of these sources could proceed, and if the likely traveler response is more elastic, then revenue generation will be significantly more difficult. Finally, it should be noted that the revenues from future transit fare increases are likely to go overwhelmingly to support transit operations (as existing fare revenues do), rather than to support major capital investments.

The Plan 2035 Scenario requires approximately $1.1 billion immediately in additional average annual funding for the region (in 2009 dollars), as noted above. If the state were responsible for providing half this new funding, the additional revenue could be achieved in a number of ways, based on the options in Table 8-5. A phase-in of a 10- to 15-cent increase in the gas tax plus a moderate toll increase, for example, could likely provide that level of new state funding, if those increases were then also indexed to inflation. However, there are a number of other funding combinations that might prove feasible based the economic outlook and the particular projects being supported.

Achieving the Aspirational Scenario requires almost $2.5 billion in additional revenues per year. If the state were responsible for providing half this new funding, there is no way to achieve this level of new funding without major changes to current tax and toll levels. A combination package of a 10-cent gas tax increase, a 1-cent-per-mile VMT charge, and a 0.5 percent sales tax would generate the annual state funding needed for the Aspirational Scenario (again, also assuming indexing to inflation).

Toll facilities are just one way the region can generate revenue for transportation investments. Helix approach to Lincoln Tunnel, Weehawken, Hudson County.

Table 8-5
Options for Additional Transportation Revenues

Option	Base	Action Needed to Raise Given Amount of NJTPA Regional Funding Per Year (2009 Dollars) $400 Million	$800 Million
Gas/Carbon Tax Increase	14.5¢ state gas tax generates approximately $50 million per penny statewide	Increase by 10¢ per gallon	Increase by 20¢ per gallon
Baseline Toll Increase	$750 million in GSP and NJ Turnpike toll revenue in 2008 (statewide)	Increase tolls by approx. 80%	Increase tolls by approx. 160%
Transit Fare Increase	$700 million in transit fare revenue last year (statewide)	Raise fares by 2.4x	Not feasible*
VMT Tax	$146 million daily VMT in NJTPA region, growing to 182 million in 2035	Institute roughly 1¢ per mile tax	Institute roughly 2¢ per mile tax
Sales Tax	7% total sales tax generates revenues of $8.5 billion statewide	Slightly less than 0.5% (half penny)	Slightly less than 0.5% (half penny)

*Assuming a -0.20 elasticity, ridership will decline too much to generate $800 million at the required fare levels.

Assessment of Revenue Options

The Baseline Scenario assumes that state funding will increase 3 percent per year after 2012. In the past, given population growth and steady increases in vehicle miles traveled (VMT), annual increases in funding of this scale could be achieved relatively easily. In the current environment, however, sustained growth in gas tax revenues cannot simply be assumed. For the Baseline Scenario, the state may need to examine indexing the existing gas tax to inflation, in order to protect the current purchasing power of that revenue source.

Plan 2035 Scenario will require significant legislative and executive action by the state in order to achieve the assumed funding. The assumptions for the Plan 2035 Scenario and for the Aspi-

Urban centers face their own transportation funding challenges. Downtown Newark.

Fare box revenues are just one component of the funding needed for a robust transit system. Belmar Station, Monmouth County.

rational Scenario, should conditions make them possible, show funding growing smoothly over time, but of course the actual implementation of new funding sources in the future may mean that revenues plateau for a period and then jump significantly. However, most of the sources discussed above could be modified so that the revenue stream becomes more predictable once implemented, and in most cases this means indexing to inflation. For example, a VMT tax which starts at one cent per mile could be indexed, meaning that by the plan horizon in 2035, the rate would rise to a little over two cents per mile. Similarly, toll increases, transit fares, and any new gas taxes could also be indexed to inflation. (In fact, many transit agencies have already adopted formal or informal policies of linking fare increases to inflation, precisely to protect the purchasing power.) Finally, a sales tax is implicitly linked to inflation, since it takes a fixed percentage of a tax base which generally increases with overall price inflation. However, economic forecasters have recently expressed some concerns about the long-term growth prospects for sales taxes, as the Baby Boom generation ages and shifts more of its purchasing dollars to un-taxed services and away from taxable goods. If New Jersey considers a transportation-supporting sales tax, this changing relationship will be an important consideration.

Other Funding for Transportation

The state and federal investments in transportation discussed in this chapter are supplemented by additional investments by a number of transportation authorities in the region—principally, the Port Authority of New York & New Jersey, New Jersey Turnpike Authority and Delaware River Joint Toll Bridge Commission. Their investments will continue over the life of this plan. Key projects planned by the authorities are included in the Project Index. The jurisdiction of these authorities is as follows:

- *Port Authority of New York & New Jersey:* Key facilities operated by the PANY&NJ include Newark Liberty International Airport; Teterboro Airport; the PATH rail system; the Port complex in Newark and Elizabeth; and major interstate New York-New Jersey crossings—Outerbridge Crossing, Goethals Bridge, Bayonne Bridge, Holland and Lincoln tunnels, and the George Washington Bridge. The agency has built passenger ferry facilities, maintains roadways within its facilities and contributes to other key infrastructure elements that access its facilities and aid the movement of goods and people throughout the region. Details of future investment strategies are provided in the Port Authority's 2007-2016 capital program.

  Over seventy-five percent of the Port Authority's funding comes from revenue collected largely from its toll facilities and rental properties and from bonds and notes issued. Its regional transportation projects to 2016 are projected to total over $5 billion, which includes a $3 billion commitment towards the MTT. Other investments that benefit the NJTPA region include the purchase of New PATH cars, dredging near the Port, modernization efforts and Newark Liberty International Airport.
- *New Jersey Turnpike Authority:* Legislation to combine the New Jersey Turnpike Authority with the Garden State Parkway Authority was signed in 2003. The Authority operates and maintains both of these tolled highways. The Turnpike is 146 miles (56 miles in the NJTPA region) and includes 27 interchanges, nearly 500 bridges and 12 service areas. The Garden State

Parkway is 173 miles (121 miles within the NJTPA region) and includes 90 interchanges, approximately 300 entrance and exit ramps and nearly 500 bridges.

The NJ Turnpike Authority's funding comes from bonds and from toll collection. In 2008, tolls were raised, which allows for the widening of the Garden State Parkway between interchanges 63 and 80 and the Turnpike between interchanges 6 and 9, reconstruction of Exit 14A, as well as a contribution of $1.25 billion towards the MTT and other important capital improvements. This investment is outlined in the Authority's 2009—2018 capital plan, as part of its $9.8 billion ten year capital program (in 2008 dollars). Funding for the MTT will come from the Supplemental Capital Fund.

- *Delaware River Joint Toll Bridge Commission:* This Commission maintains and operates seven toll bridges over the Delaware River, stretching 139 miles from northern Burlington County, New Jersey and Bucks County, Pennsylvania northward to the New York State Line. All the DRJTBC Toll bridges are in the NJTPA region except for the Trenton-Morrisville Bridge. They are responsible for the repair and maintenance of the first seven miles of Route I-78 in Warren County, and have recently repaved this section.

  The Commission is supported primarily through toll revenue, which was approximately $85.5 million in 2007, an increase of almost 7 percent due to increased tolls on commercial vehicles. While most of the improvements funded by the DRJBTC are bridge repair, rehabilitation and reconstruction, they are investing in technology to improve bridge and highway traffic flow. They are planning to install open road tolling on the I-78 bridge. In addition, there is a security initiative in place, consisting of cameras, an improved communications network, and an access control system for the agency's facilities. The cameras and communications can also be used as part of a future ITS system, and will currently be used to assist first responders to accidents at DRJTBC facilities.
- *The Private Sector:* Private funding also makes substantial investments that enhance the regional transportation system. In particular, developers are frequently called upon to construct local streets as part of the development process and often will construct or improve county or state facilities impacted by their developments. Also, private operators of ferries and bus lines help supplement or offer alternatives to public transit operators. In the freight sector, private companies are engaged in nearly every aspect of goods movement including private port operations, trucking companies, rail lines and brokering/forwarding firms. All these private operations depend on government-supported infrastructure investments. As a result, this plan calls for continued cooperation and coordination by the NJTPA with private sector interests, as well as the region's transportation authorities, in it's year-to-year investments of state and federal funding.