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November 9, 2000

The Honorable Richard C. Shelby
Chairman
The Honorable Frank Lautenberg
Ranking Minority Member
Subcommittee on Transportation
Committee on Appropriations
United States Senate

The Honorable Frank R. Wolf
Chairman
The Honorable Martin Sabo
Ranking Minority Member
Subcommittee on Transportation and Related Agencies
Committee on Appropriations
House of Representatives

Subject: Mass Transit: Review of the South Boston Piers Transitway Finance Plan

The Massachusetts Bay Transportation Authority (MBTA) is constructing a 1.5-mile underground transitway to connect its existing transit system with the South Boston Piers area, which is undergoing significant economic development. The South Boston Piers Transitway project is to be built in two phases. The first phase is a 1-mile, three-station bus tunnel between South Station and Boston's World Trade Center. In November 1994, the Federal Transit Administration (FTA) entered into a full funding grant agreement with MBTA,¹ under which the federal government would provide \$331 million (80 percent) of the projected \$413 million total cost for the project's first phase, which was to be completed in December 2000. To date, MBTA has received almost \$242 million of that amount. However, this phase has experienced significant cost increases and schedule delays; currently, the project is 3 years behind schedule and its estimated total cost has risen to \$601 million.

Concern over the project's increased cost led to a provision in the conference report accompanying the Department of Transportation and Related Agencies Appropriations Act for fiscal year 2000 that made the funds for the project contingent on MBTA's completion of a finance plan. This plan was to set forth the full cost of completing the project and MBTA's strategy for paying this cost, among other things.

¹The Federal Transit Administration's New Starts program provides funds for new transit systems and extensions to existing systems. Full funding grant agreements set the terms and conditions for federal participation in these projects.

The report also directed GAO and the Department of Transportation's Inspector General to conduct independent analyses of the plan and report to the House and Senate Committees on Appropriations.² Accordingly, this report provides information on (1) the financing of the project, (2) the remaining risks to the project's cost and schedule, and (3) MBTA's ability to operate and finance its transit system.

On February 25, 2000, MBTA submitted a finance plan to FTA to document its ability to fund the project while continuing to operate and maintain its existing infrastructure. In June 2000, we postponed our ongoing review of the finance plan because of concerns that delays and cost increases in the Boston Central Artery/Tunnel (CA/T) project could affect MBTA's costs under three contracts that it and the Massachusetts Highway Department share for the design and construction of segments of the South Boston Piers Transitway and the CA/T projects. On August 17, 2000, MBTA and the CA/T project completed a joint analysis of the finance plans for the South Boston Transitway and CA/T and concluded that each plan's projections included only that project's fair share of costs on the joint contracts. Therefore, we resumed our analysis of MBTA's finance plan.

Results in Brief

MBTA's South Boston Piers Transitway finance plan demonstrates that the agency has the financial capacity to pay the current estimated cost of \$601 million to complete the project. MBTA plans to rely on federal funds, specifically \$331 million in New Starts funds (55 percent) and \$150 million in transit formula funds (25 percent),³ to finance 80 percent of the project's costs. The New Starts funds remain at the same level as approved in the original full funding grant agreement. In addition, \$120 million in state and/or MBTA bond funds will be used to cover the remaining 20 percent of total project costs. To cover additional cost increases that might occur, MBTA has established a \$50 million capital reserve bond fund.

We found, largely through the work of FTA's project management oversight contractor,⁴ that the transitway's finance plan contains reasonable cost and schedule projections. There are, however, two issues that could jeopardize the project's schedule and cost. First, the contractor believes that subsurface problems encountered while stabilizing the earth under the Russia Wharf section of the project could cause a schedule delay. Second, the estimated cost to purchase the project's buses has increased by \$10 million because of market conditions and the vehicles' design. MBTA is still considering a number of options to offset this increase. Despite these two concerns, the contractor believes the project's expected opening date of December 2003 is realistic and MBTA's \$50 million capital reserve fund should be able to cover any additional cost increases.

²The conference report accompanying the Department of Transportation and Related Agencies Appropriations Act for fiscal year 2001 contains a similar provision with respect to the project's 2001 funding.

³Capital funds are also made available for urbanized areas on a formula rather than a project-specific basis.

⁴A project management oversight contractor serves as an extension of FTA's technical staff in assessing grantees' project management and technical capacity and capability to successfully implement major capital projects.

Finally, we note that while MBTA has demonstrated that it has the financial capacity to complete the project, it has not yet clearly demonstrated to FTA's financial management oversight contractor that funding the transitway project will not impair its ability to operate and maintain its overall transit system.

Background

MBTA believes that the South Boston Piers Transitway project is the missing link in the chain of development along the waterfront in the South Boston Piers area. City and state officials expect that more than 13 million square feet of new development, as well as the upgrading and conversion of existing development to more intense use, will occur in the area within the next 15 years. Daily ridership for the transitway is expected to range from 22,000 to 34,000 in 2010.

The first phase of the South Boston Piers Transitway project is now expected to cost \$601 million—a \$188 million increase (46 percent) over the \$413 million projected in the 1994 full funding grant agreement. The project management oversight contractor, FTA, and MBTA attribute most of the project's cost increase to schedule delays and the fact that the original cost estimate was based on an early project design. Construction delays were due, in part, to technical interface problems on three joint construction contracts with the CA/T project, complications with relocating utilities, and site conditions. According to MBTA, the joint construction contracts were between 25- and 72-percent complete on September 25, 2000. Currently, most major contracts have been awarded, construction is under way, and the transitway is expected to open for service in December 2003, 3 years later than originally projected. MBTA does not anticipate any circumstances that would further alter either the revised cost estimate or the completion date.

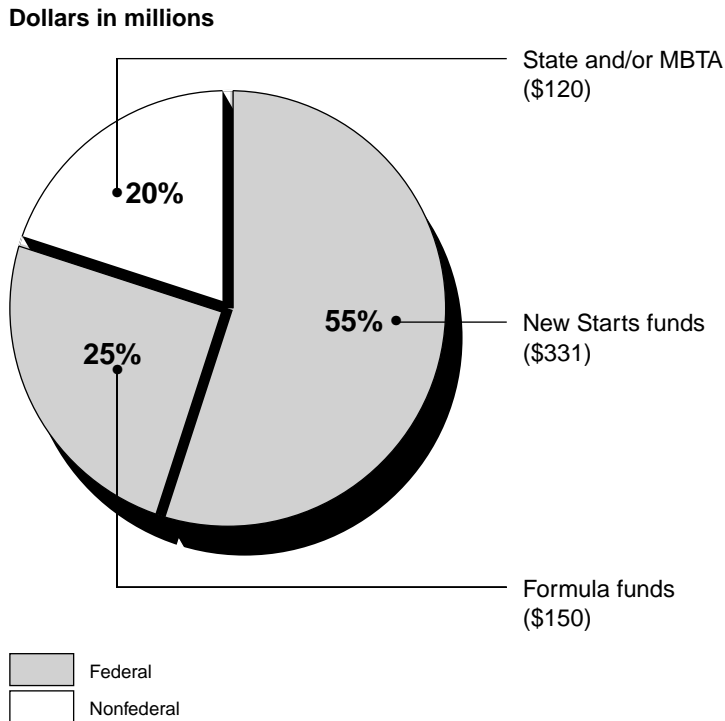
On July 1, 2000, funding for MBTA was modified by the state legislation described in its agencywide finance plan. Previously, MBTA had received state subsidies that covered all costs in excess of available revenue. Under the new funding structure, commonly referred to as "forward funding," MBTA receives a portion of the revenues from the state retail sales tax as a dedicated source of funds. MBTA will continue to fund its operating and capital needs from fare revenues, local assessments, and federal assistance. However, under the "forward funding" structure, bonds issued by MBTA after July 1, 2000, will no longer be guaranteed by the Commonwealth of Massachusetts. The legislative intent is that MBTA become an independent enterprise with its own sources of funds for operations and capital investment.

MBTA Has Sufficient Capacity to Finance Construction of the Transitway

MBTA's South Boston Piers Transitway finance plan demonstrates that it has the financial capacity to pay the estimated \$601 million cost to complete the project. Under the plan, MBTA will depend on federal funds to finance 80 percent of the project. While the amount of funds from the New Starts program stays at the \$331 million (55 percent) approved in the original full funding grant agreement, the project will also use \$150 million (25 percent) in transit funds it expects to receive from the Formula Grant Program to finance the project. FTA must amend the full funding grant agreement to reflect MBTA's planned use of formula funds. To finance the remaining 20 percent of the project's costs, MBTA plans to use \$120 million in

state and/or MBTA bond funds. Figure 1 shows MBTA's planned financing structure for the transitway project.

Figure 1: Funding Sources for the South Boston Piers Transitway



Source: GAO's presentation of data provided by MBTA.

To cover any additional cost increases that might occur, MBTA established a \$50 million capital reserve bond fund. FTA requested the reserve to address the risks associated with the remaining construction. The project management oversight contractor has concluded that MBTA's estimate of \$601 million to complete the project is reasonable and that MBTA is demonstrating a strong financial commitment to complete the project with the addition of the \$50 million capital reserve fund. Moreover, a separate review of the South Boston Piers Transitway finance plan by FTA's financial management oversight contractor also concluded that MBTA has the financial capacity to complete the project.⁵

Two Issues Could Affect the Transitway's Cost and Schedule

Largely through the work of FTA's project management oversight contractor, we found that MBTA's finance plan for the South Boston Piers Transitway project contains reasonable cost projections. However, the project management oversight contractor noted that two issues could delay the project and/or increase costs. Nevertheless, MBTA's \$50 million capital reserve fund should be able to cover additional cost increases.

⁵FTA engages these contractors to determine whether a grantee has the financial capacity to effectively support a major capital project.

According to FTA's project management oversight contractor, construction at the Russia Wharf area of the project could be delayed because of problems with stabilizing the ground under historic buildings. This stabilization requires two procedures—soil freezing (a technique to inhibit the flow of water and soil during excavation and tunneling activities) and mining the soil by the New Austrian Tunneling Method (a technique to provide structural support for a tunnel by spraying layers of concrete on its interior surface during excavation). The contractor believes that there is a high probability that subsurface problems could delay this critical work and noted that if MBTA encounters a significant problem during these stabilization procedures, the project's completion could be delayed by more than 2 months. According to MBTA, however, it is premature at this time to assume a schedule delay in the project.

The contractor also found that complications in developing a bus to satisfy the project's requirements could affect the project's cost. The type of vehicle MBTA requires for the project is not an "off-the-shelf" bus and is not currently available in the United States.⁶ MBTA is negotiating with a company to provide them, but the \$1.6 million cost per bus is substantially higher than the \$1.1 million cost originally included in the project's budget. According to MBTA, the primary reasons for the higher cost are the vehicle's unique configuration and existing market conditions. MBTA is negotiating with the company to lower the cost of the buses, but it estimates that the project's budget for them has a \$10 million shortfall. To offset this shortfall, MBTA is still considering a number of options, including potential savings in the vehicle maintenance facility. MBTA is confident that a significant portion of the shortfall can be eliminated. On August 17, 2000, MBTA's Board of Directors approved the vehicle contract, subject to, among other things, FTA's release of the transitway funds for fiscal year 1999. Although FTA subsequently released these funds to MBTA, as of November 8, 2000, MBTA had not awarded the vehicle contract.

MBTA Has Not Clearly Demonstrated It Can Maintain Its Existing Transit System

While MBTA has shown that it has the financial capacity to complete the South Boston Piers Transitway project, it has yet to clearly demonstrate that funding this project will not impair its ability to maintain its existing mass transit system.⁷ A recent financial capacity report by FTA's financial management oversight contractor raised concerns about MBTA's overall capital program. Continued oversight by FTA is essential to help ensure that MBTA makes appropriate resources available to its currently existing system, notwithstanding the transitway project.

In May 2000, MBTA published an agencywide finance plan that reflected the changing needs of its transit system. These changing needs occurred because of, among other things, "forward funding" provisions. FTA's financial management oversight

⁶MBTA has proposed a dual-mode, hybrid diesel-electric, 60-foot articulated (i.e., jointed) bus for the transitway project.

⁷Under the Transportation Equity Act for the 21st Century, in evaluating proposed projects for full funding grant agreements, FTA requires sufficient local resources to operate the overall proposed transit system without requiring a reduction in existing mass transportation services.

contractor performed a financial capacity assessment of the finance plan,⁸ which focused on the reasonableness of the plan's underlying financial assumptions, and developed models to test the sensitivity of those assumptions. In November 2000, the contractor's financial capacity assessment report concluded that MBTA continues to maintain the financial capacity to complete the transitway project.

This report, however, raised several concerns about MBTA's overall capital program. According to the contractor, for example, MBTA has not clearly identified the source of \$130 million in funds for commuter rail replacement and rehabilitation requirements for its overall system. In addition, MBTA's fleet management plans for its entire system have not been updated to reflect its current fleet replacement and maintenance plans. Finally, MBTA reduced the amount of capital funds programmed for the overall maintenance of its core facilities. According to the contractor, MBTA's financial risks and challenges are caused by many developments, including "forward funding" and other commitments associated with the CA/T project. MBTA told the contractor that the uncertainties created by "forward funding" and the dynamic nature of its operating environment necessitate capital and finance plans that are flexible and poised to react to changes in the environment. MBTA also told the contractor that unfunded projects would be continually reassessed in the context of funding availability. The contractor recommended that FTA continue to monitor MBTA's capital program to ensure that sufficient resources are made available to fund an updated fleet management plan and maintain the agency's core facilities.

Agency Comments

We provided MBTA and FTA with a draft of this report for review and comment. FTA provided a copy to its financial management oversight contractor. While generally agreeing with our report, the contractor provided clarifications about its assessment of MBTA's agencywide finance plan. The contractor commented that funding the South Boston Piers Transitway project is not the primary challenge for MBTA and that it has the financial capacity to complete this project. However, the contractor noted that MBTA's fiscal risks and challenges are caused by a multitude of developments, primarily the new "forward funding" initiative and complications created by MBTA's commitments with the CA/T. The contractor also said that the challenges it cited in its financial capacity review addressed an MBTA capital plan that includes projects that will probably change because of future developments. The contractor added that MBTA has never operated in the environment created by the new "forward funding" legislation and that this environment makes it difficult for MBTA to document a plan that clearly demonstrates financial capacity without some level of risk. According to the contractor, this is why FTA's close monitoring of the project is critical.

In commenting on our draft report, MBTA stated that reinvestment in its transit system will continue to be a high priority. Over the next 5 years, for example, MBTA expects to spend, on average, \$350 million per year on core infrastructure, which is

⁸A financial management oversight contractor performs these reviews to assess a grantee's financial capability to meet the full funding grant agreement obligations on major capital projects and to help ensure that existing transit service would not be interrupted owing to the grantee's lack of financial capacity.

about two-thirds of its total capital program. MBTA also provided us with technical comments, which we incorporated as appropriate.

Scope and Methodology

To perform our analysis for this report, we reviewed MBTA's South Boston Piers Transitway and agencywide finance plans, the financial management contractor's financial capacity assessment report, several project management oversight contractor reports, and relevant supporting documentation. We interviewed appropriate MBTA officials and the financial management oversight contractor to discuss the cost and financing assumptions underlying the plan. To obtain information about the project's cost and status, we met with MBTA's senior management and FTA's project management oversight contractor. We also met with FTA headquarters and regional officials to obtain specific information on this project. We performed our work from April through November 2000 in accordance with generally accepted government auditing standards.

We are sending copies of this report to the Honorable Rodney E. Slater, Secretary of Transportation; the Honorable Nuria Fernandez, Acting Administrator, Federal Transit Administration; The Honorable Jacob J. Lew, Director, Office of Management and Budget; Robert H. Prince, General Manager, Massachusetts Bay Transportation Authority; and other interested parties.

Key contributors to this report were Jack Bagnulo, Helen Desaulniers, Kirk Kiester, and Ron Stouffer. If you have questions about this report, please call me at (202) 512-2834.



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