



Memorandum

**U.S. Department of
Transportation**

Office of the Secretary
Of Transportation

Office of Inspector General

Subject: INFORMATION: Notification of Follow-Up Date: October 3, 2002
Audit of the Tren Urbano Rail Transit Project
Project Number: 02I3010I000

From: Debra S. Ritt Reply to: JA-40
Assistant Inspector General for Attn of:
Transit, Rail Safety, and Maritime Programs

To: Federal Transit Administrator

On March 5, 2002, the Office of the Inspector General issued its second audit report on the Puerto Rico Highway and Transportation Authority's (HTA) management of the Tren Urbano Rail Transit Project in San Juan, Puerto Rico.¹ The report discussed the project's schedule, cost estimate, financial capacity, and outstanding construction quality problems. It also addressed the actions taken by the Federal Transit Administration (FTA) to oversee the project and ensure that HTA develops an integrated project master schedule as recommended in our May 2000 report.² Recently, FTA received a request from HTA to amend the project's full funding grant agreement for the second time, which is currently being reviewed.

As part of our plans to continually monitor the project, we are initiating an audit to determine the reliability of the current cost and schedule estimates, and the reasonableness of HTA's financial plan for completing the project. We will also evaluate HTA's efforts to resolve significant outstanding construction quality problems. Finally, we will evaluate HTA's plans and procedures to begin Tren Urbano's revenue operations, including operational testing of the rail system.

The audit will be conducted at FTA in Washington, D.C. and at Region IV in Atlanta, Georgia; HTA in San Juan, Puerto Rico; the Federal Highway Administration in

¹ Office of Inspector General Report No. IN-2002-085, Report on the Tren Urbano Rail Transit Project, (March 5, 2002).

² Office of Inspector General Report No. RT-2000-091, Report on the Finance Plan for the Tren Urbano Rail Transit Project, (May 25, 2000).

Washington, D.C. and the Division Office in San Juan, Puerto Rico; and other offices to be determined during the audit.

We will begin the audit immediately. Sarah Batipps, the Project Manager, will coordinate with your audit liaison to arrange an entrance conference. If I can answer any questions or be of assistance, please feel free to contact me.

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cc: Ann Branch, FTA Liaison
Cynthia Thornton, FHWA Liaison

Proposal for Follow-Up Audit of the Tren Urbano Rail Transit Project

Project Number 02I3010I000

Objectives

On March 5, 2002, the Office of the Inspector General (OIG) issued an audit report on the Puerto Rico Highway and Transportation Authority's (HTA) schedule, cost estimate, financial capacity, and outstanding construction quality problems for completing the Tren Urbano Rail Transit Project in San Juan, Puerto Rico (Project). The report recommended that FTA neither amend the project's full funding grant agreement (FFGA) nor approve the next finance plan submitted by HTA, until HTA has (1) revised the project's integrated master schedule to reflect attainable project milestones; (2) submitted a cost estimate that is consistent with a supportable project completion date; and (3) established and adhered to a timetable to resolve significant outstanding construction quality problems. Recently, FTA received a request from HTA to amend the project's grant agreement for the second time. Currently, FTA is reviewing this request. The OIG has continued to monitor the status of the Project and we are initiating this audit to assess actions taken by FTA in response to HTA's request to amend the project's FFGA.

The objectives of this audit are to determine the reliability of the current cost and schedule estimates, and whether HTA's financial plan is a realistic assessment of its ability to complete the project. We will also evaluate HTA's efforts to resolve significant outstanding construction quality problems. Finally, we will evaluate HTA's plans and procedures to begin Tren Urbano's revenue operations, including operational testing of the rail system.

Background

The Puerto Rico Department of Transportation and Public Works (DTPW), through its Highway and Transportation Authority, is constructing a 10.7 mile (17.2 km) fixed-guideway rail transit system—Tren Urbano—in the San Juan metropolitan area.³ The purpose of this transit system is to alleviate traffic congestion while serving existing and projected development within

³ Tren Urbano is part of the FTA's Turnkey Demonstration Program, Section 3019 of the Intermodal Surface Transportation Efficiency Act of 1991, known as design/build contracting.

San Juan's metropolitan area. The Project includes 16 stations,⁴ a vehicle maintenance and storage facility, a fleet of 74 vehicles, and operations and maintenance services for 5 years.

In March 1996, FTA awarded HTA a FFGA to design and construct the Project. FTA committed to contribute \$307.4 million toward the total project cost of \$1.250 billion, and HTA planned to fund the balance through pledged revenues and related revenue bonds. The revenue operation date was scheduled for July 2001.

By 1999, the Project's cost estimate had increased to \$1.676 billion, a \$426 million increase over the original estimate. HTA attributed the Project's cost growth to contract and scope changes and a larger contingency amount for claims or change orders.⁵ At HTA's request, FTA amended the Project's FFGA in July 1999 to recognize the \$426 million cost increase and to extend the revenue operation date to May 2002 and increased the Federal commitment to the Project from \$307.4 million to \$708.3 million.⁶ HTA was to provide the remaining \$967.7 million from local funds. Additionally, in September 1999, HTA received a commitment from the Department of Transportation for \$300 million in credit assistance under the Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA),⁷ which can only be used for Tren Urbano.

Prior OIG Audit Coverage

Our May 25, 2000 report found that HTA had the financial capacity to construct, operate, and maintain the Project. However, the report noted significant uncertainty regarding the Project's schedule. The range of delays that was anticipated for the Project's various construction contracts varied from 2 months to 2 years. We recommended the establishment of an integrated master schedule for the Project. We further noted 5 major construction quality issues at various sites involving welded splices of steel reinforcements required for seismic criteria; pile strands not properly embedded; a pier out of plumb and cracked; insufficient concrete cover to protect the steel reinforcement of piers; and a tunnel

⁴ Approximately 40 percent of the alignment segments are at or near grade and most of the remainder is generally elevated above roadway rights-of-way.

⁵ Also included in the \$426 million was \$22 million for preliminary engineering costs incurred before 1996.

⁶ HTA was authorized to use \$141 million in Section 5307 formula funds and \$259.9 million in Federal Highway Administration (FHWA) funds.

⁷ HTA does not have to repay principal on the TIFIA loan for the first 7 years of the 35-year term.

misalignment.

Responding to continuing unresolved schedule and construction quality issues, the FTA Regional Administrator withheld allocating \$31.4 million in grant awards from the Project on November 21, 2000. In February 2001, OIG staff visited the Project in response to concerns raised by the Chairman of the House Subcommittee on Transportation and Related Agencies⁸ and found that the schedule and some of the construction quality issues discussed in our May 2000 report remained unresolved. Subsequently, on May 15, 2001, the FTA Regional Administrator withheld allocating an additional \$133.6 million in Fiscal Years 2000 and 2001 Federal appropriations for a total of \$165 million⁹ and required Project officials to implement a 10-part recovery plan.¹⁰

In March 2002, we issued a second report which found that FTA had exercised stronger oversight of Tren Urbano and imposed requirements for HTA to complete a recovery plan. However, we also found that:

- The schedule completion date was unlikely to be achieved. HTA's integrated master schedule forecasted a project completion date of September 2003. However, FTA's project management oversight consultant and we estimated that the project may not be completed until as late as September 2004.
- The cost to complete Tren Urbano was likely to increase beyond HTA's current estimate of \$2.036 billion if the project completion date of September 2003 was not met. Although HTA had identified sufficient funding for its \$2.036 billion cost estimate, it needed to identify more funding for additional overhead costs and additional claims if the schedule slipped to March or September 2004.

⁸ The Chairman was concerned about the magnitude of the continuing financial and construction problems that the Project was experiencing.

⁹ This amount includes \$55 million in FHWA funds.

¹⁰ The 10-part recovery plan consists of (1) additional HTA oversight including the designation of a HTA project manager; (2) an updated project budget; (3) an integrated master schedule that is acceptable to all contractors; (4) an updated finance plan in October 2001; (5) a plan for a staged opening of Tren Urbano; (6) an accurate "Expenses to Date" table for monthly reports that include HTA staff costs; (7) resolution of the Buy America issue on imported steel; (8) a plan to deal with outstanding significant non compliance reports; (9) a schedule for implementation of a State Safety Oversight Agency, selection of Puerto Rico Emergency Management Agency and approval of Safety Certification for Tren Urbano; and (10) update the project management plan to reflect new personnel and new reporting responsibilities, emphasizing the functional duties of safety, quality assurance/quality control, project controls, etc.

- Tren Urbano's cost increases and schedule delays had adversely affected HTA's financial capacity to fund planned transportation improvements. Although HTA had the resources to fund its number one priority—Tren Urbano—and to repay its debts, Federal Fiscal Year 2002 highway flex and formula funds that were intended for other transportation improvements were being used to offset the increased cost of Tren Urbano.
- While HTA had corrected some construction quality problems, the long-term safety and operability of the project remain at risk until all quality problems have been corrected. Project officials have made progress correcting most of the construction quality problems that we identified in our May 2000 report. However, the remaining significant items included the closure of 38 nonconformance reports for construction quality problems, testing of steel strands in certain foundation piles, and seismic retrofit of 10 columns. HTA was addressing these items, but had not established a timetable to complete them.

FTA agreed with our findings and stated that it would continue to closely oversee the project. Despite HTA's progress in implementing the requirements of its recovery plan, we recommended that FTA continue its close oversight to ensure that HTA revises the project's integrated master schedule to reflect attainable milestones, revises the project's cost estimate to reflect resources needed to complete the project, provides reliable and supportable revenue projections, and establishes a timetable for correcting significant outstanding construction quality problems. We further recommended that, until HTA had satisfied these requirements, FTA neither amend the project's FFGA nor accept or approve HTA's updated finance plan.

Subsequent to our report, on March 13, 2002, the FTA Regional Administrator released \$165 million in withheld funds because HTA had made significant progress implementing the requirements of its recovery plan. For example, HTA (1) provided additional project oversight by appointing a new Project Manager and Project Director, (2) established a procedure to correct significant outstanding construction quality problems, (3) corrected Buy America violations, (4) submitted required financial information to FTA, and (5) submitted an integrated master schedule.

Impact

As the reauthorization of the Transportation Equity Act for the 21st Century

proceeds, many transportation projects continue to compete for scarce Federal resources. FTA's oversight must ensure that funding decisions are based on reliable and current information and a sound analysis of the financial status of projects receiving Federal support. This audit will determine whether the project's budget is reliable, the schedule is realistic, all significant quality construction problems are corrected, and plans are adequate to begin operating the system. Our audit work will continue to assess FTA's efforts to provide effective and timely oversight for this mega transportation infrastructure project.

Scope and Methodology

To update the actions taken by HTA and FTA to implement the recommendations in our March 2002 report, we will conduct follow-up meetings with Tren Urbano representatives and FTA officials. We will also review HTA's second amended FFGA for the Tren Urbano Project and supporting documentation. Specifically, we will:

- (1) review and analyze the Project's integrated master schedule to see if project milestones are attainable;
- (2) determine whether the Project's current cost estimate is realistic for the current completion date;
- (3) review HTA's financial plan to determine if it is a realistic assessment of its ability to complete the project and takes into account all known financial risks;
- (4) evaluate HTA's efforts for resolving significant outstanding construction quality problems; and
- (5) evaluate HTA's plans and procedures to begin Tren Urbano's revenue operations, including operational testing of the rail system.

Tentative Resource Needs

Travel costs are to be determined. The following individuals are assigned to this audit:

Leslie Smith, Program Director

Sarah Batipps, Project Manager
 Rodolfo Pérez, Engineer Advisor
 Brenda James, Senior Analyst
 Oleg Michalowskij, Senior Analyst
 Kyle Miller, Analyst

Milestones

	Begin	End
Survey Field work	October 15, 2002	December 17, 2002
Decision Meeting	December 18, 2002	
Verification Field Work		
Message Meeting		
Draft report		
Management response to Draft		
Final report		

Approved by: _____
 Leslie A. Smith Date

Approved by: _____
 Debra S. Ritt Date

Approved by: _____
 Alexis M. Stefani Date