



Progress Report: The MTA Capital Security Program

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This report is the seventh in a series of reports on the capital security program of the Metropolitan Transportation Authority (MTA). Our reports have chronicled the problems the MTA has encountered, which include: retrofitting a 100-year-old system, where access to tunnels is limited because the system operates around the clock; improvements that were more complicated than envisioned; permit delays; unexpected site conditions; computer-related problems; and a dispute with the primary contractor responsible for the electronic security program.

The capital security program began in the wake of the events of September 11, 2001, when the MTA initiated planning efforts to determine how best to protect its customers and key assets from any future terrorist incident. These efforts culminated in a multifaceted strategy that included operational initiatives and 57 security-related projects, funded mostly through the capital program, to harden and control access to vulnerable facilities.

The MTA's 2000-2004 capital program allocated \$591 million to fund the 24 highest priority projects of the capital security program (i.e., Phase 1). These were subsequently reconfigured into 16 construction projects, which now entail 38 separate security improvements.

The projects in Phase 1 target the MTA's most vulnerable and most heavily used assets, such as stations, transit hubs, bridges, and tunnels. Security improvements include electronic security and surveillance; fire, life, safety, and evacuation enhancements; perimeter protection; and structural hardening. Each project involves one or more facilities and security improvements.

Despite significant delays and unplanned costs, the MTA has made substantial progress, particularly in the past two years, but Phase 1 will not be completed until June 2012. The MTA has hardened all 14 facilities planned for Phase 1; improved lighting, communication systems, and smoke and fire detection equipment in 15 facilities; installed perimeter protection around four facilities; and is receiving significant benefits from the electronic security program.

The MTA has also implemented, often with the cooperation of other stakeholders, a number of operational initiatives that have improved security. The MTA has increased its security personnel, enhanced its coordination with security agencies, implemented a public relations campaign to encourage the public to report suspicious activity, and taken other steps to improve security. These initiatives have received national recognition and, along with the capital security program, have greatly improved the security of the transit system.

Nevertheless, the regional mass transit system is inherently vulnerable, and additional capital improvements are needed to better protect the public and valuable assets that are critical to the regional economy. Though the MTA has begun Phase 2 of its capital security program, a lack of funding has kept 16 projects from commencing.

Our review has reached the following conclusions:

- After more than nine years of effort, the MTA has fully completed 11 of the 16 capital security projects planned for Phase 1. Elements of the five remaining projects have also been completed, providing direct benefits.
- All 16 projects were scheduled to be completed by September 2008 (according to the baseline schedules set by the MTA in late 2003 and early 2004), but they will not be completed until the end of June 2012—nearly four years later than the original plan.
- As of December 2010, 12 of the 16 projects were two or more years behind the baseline schedules set by the MTA, including three projects delayed by more than six years.
- As of December 2010, the MTA had completed 31 of 38 planned construction tasks, and the remaining seven tasks were all in the process of construction.
- More than 60 percent of the 38 construction tasks were behind the schedules established at the time contracts were awarded, including 11 that were behind by more than one year (five tasks were more than 30 months late).

- As discussed in prior reports, the electronic security program has encountered serious problems, which have created delays, increased costs, and reduced the planned functionality.
- The MTA is now receiving important benefits from the electronic security program. Construction is expected to be completed in June 2011, but the program as a whole is not scheduled to be completed until June 2012—almost four years later than called for under the original construction contract.
- A joint effort between the MTA and the New York Police Department resulted in the accelerated installation of 561 MTA electronic security cameras at three of New York City’s busiest transit hubs, and live video feeds are being provided to the NYPD.
- The cost of the electronic security program is expected to nearly double, growing from \$265 million to \$515 million.
- The cost of Phase 1 (including two facilities that were deferred from Phase 1 to Phase 2) has effectively grown from \$591 million to \$851 million—an increase of 44 percent.

Adherence to Project Schedules

As of December 2010, Phase 1 of the MTA’s capital security program encompassed 16 projects, divided into 38 construction tasks. We track the progress of the capital security program by using the three quantitative measures discussed below. To maintain security, this report does not reveal the details of individual security projects.

Project Phase

During calendar year 2010, the MTA completed four additional capital security projects, bringing the total number of completed projects to 11 (see Figure 1). The five remaining projects are still in the construction phase, although some important elements of these projects have been completed and are providing immediate benefits.

Figure 1
Construction Projects by Phase

Phase	2005	2006	2007	2008	2009	2010
Completed	1	2	3	4	7	11
Construction	5	8	9	11	9	5
Design	<u>10</u>	<u>6</u>	<u>4</u>	<u>1</u>	<u>0</u>	<u>0</u>
Total	16	16	16	16	16	16

Sources: Metropolitan Transportation Authority; OSC analysis

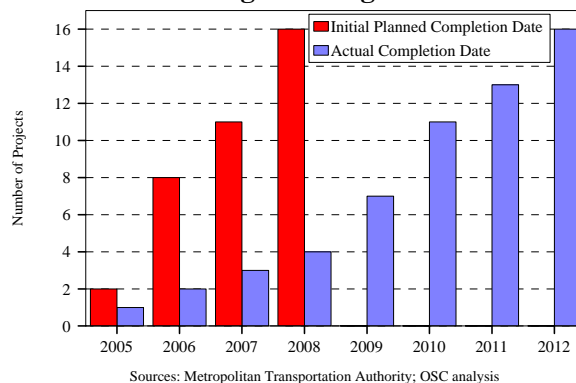
Progress Toward Completion Date

Each of the 11 projects that were completed as of December 2010 took considerably longer to complete than the MTA had initially expected. Three projects took between 8 months and 12 months longer than expected according to the baseline schedules set by the MTA in late 2003 and early 2004. For the remaining eight projects, the delays ranged from 22 months to 41 months.

The five projects still in construction as of December 2010 were also far behind the MTA’s baseline schedules. Two projects were between 36 months and 54 months behind schedule, and three projects were more than six years behind.

As shown in Figure 2, the MTA had planned to complete all 16 projects by September 2008. Based on the current schedule, Phase 1 is expected to be completed by the end of June 2012—nearly four years later than the original estimate.

Figure 2
Program Progress

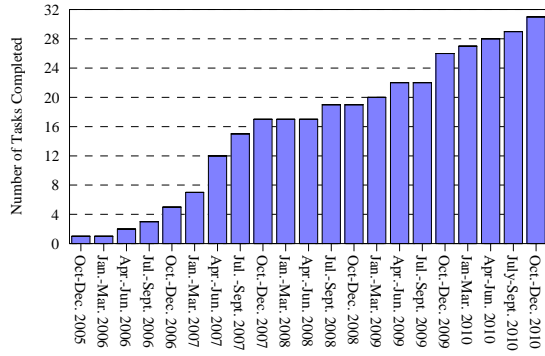


Construction Task Status

When construction contracts are awarded, the MTA and the contractor agree on a schedule to complete the specified work. Each construction task has its own contractually specified end date. (Some contracts involve more than one task.) If a contractor fails to fulfill its obligations, it can incur financial penalties. Alternatively, the MTA risks incurring additional costs if it is unable to fulfill its obligations under the contract.

In total, the capital security program consists of 38 planned construction tasks. As of December 2010, the MTA had completed 31 tasks (see Figure 3). The remaining seven tasks were still in the construction phase, and only three are expected to be completed during 2011.

Figure 3
Completed Construction Tasks



Sources: Metropolitan Transportation Authority; OSC analysis

Nearly two-thirds of the construction tasks (24 of 38) that were completed or in construction were behind the schedules established at the time the contracts were signed (see Figure 4), including 11 tasks that were more than one year behind (five tasks were more than 30 months behind schedule).

Figure 4
Progress of Construction Tasks

On or Ahead of Schedule	1 to 3 Months Behind Schedule	4 to 6 Months Behind Schedule	7 to 12 Months Behind Schedule	More Than One Year Behind Schedule
14 Tasks	5 Tasks	4 Tasks	4 Tasks	11 Tasks

Sources: Metropolitan Transportation Authority; OSC analysis

Status of Program Elements

As of December 2010, the MTA projected that Phase 1 would cost \$759 million, or \$168 million more than originally planned. The current estimates for Phase 1 reflect the cancellation of one entire project (which had an estimated cost of \$33 million) and four additional security improvements. If these plans were still intact, the growth in the cost of the program would have been even higher. MTA officials have stated that costs have grown because the original budget was based on project plans that were very conceptual, and because the scope of some security improvements has been broadened to include additional facilities.

In addition, the MTA's estimate excludes the cost of renovating two high-priority facilities that were planned as part of Phase 1 but have since been deferred to Phase 2. When the cost of these two facilities is included, the cost of Phase 1 has effectively grown to \$851 million, an increase of \$260 million or 44 percent. About 87 percent of the resources (\$739.9 million) has been allocated to fund construction tasks, while the remainder has been allocated to fund design.

The status of each major type of remediation in the MTA capital security program is discussed below.

Structural Hardening: The MTA hardened 14 critical infrastructure facilities (e.g., bridges, tunnels, stations, and other structures) during Phase 1 to make them better able to withstand the impact of explosive devices. Even though the MTA cancelled a number of planned structural improvements, it spent \$21.3 million more than initially expected (10 percent) for a total of \$242.3 million.

Fire, Life, and Safety Improvements: The MTA will spend \$65 million on fire, life, and safety improvements to its tunnels and stations. These include improved lighting, signs, ventilation, and communication equipment, which are critically important to accelerate emergency response times and expedite evacuation. Remediation consists of three projects involving 16 facilities. As of December 2010, work was completed at 15 facilities and in progress at the last facility, which is expected to be finished by the end of June 2011.

Perimeter Protection: Perimeter protection entails the installation of bollards (i.e., metal or concrete posts) and other devices that are designed to expand the security perimeter around a facility. This element of the capital security program entails five projects that include work on six separate facilities. The cost of these projects is expected to total \$37 million, which is 47 percent more than originally planned.

Perimeter protection has been installed around three major facilities, and is underway at two others. As noted in our prior reports, one of these faced multiple delays (a total of five years) prior to construction because of a stalemate between property owners and MTA officials. After construction began, property owners decided to renovate their facility, causing further delays. To continue with the construction, the MTA divided the work into six smaller construction tasks; two are completed, two are in construction, and two will begin after privately owned facility renovations are done. This project will not be completed until March 2012, six years later than originally planned.

Work on the final facility, after repeated delays of nearly six years, has moved out of the design phase; construction began in August 2010. Work is not expected to be completed until December 2011, six and a half years later than originally planned.

Electronic Security: The MTA announced in August 2005 that it had awarded a \$212 million contract to Lockheed Martin to build a state-of-the-art integrated electronic security program that would enhance security throughout the transportation network. The contract called for the installation of video cameras and electronic sensors, including motion sensors, intrusion detection devices, swipe access devices, and intelligent video. These devices were to be integrated and monitored at command, control, and regional communication centers.

Our previous reports found that the program had fallen far behind schedule and encountered serious problems. For example, Lockheed reportedly failed 400 of the 1,400 factory acceptance testing requirements. In addition, breaks were discovered in aging fiber-optic cables, which were subsequently mitigated by the MTA.

On April 24, 2009, Lockheed Martin filed a lawsuit seeking to terminate its contract with the MTA. According to Lockheed, the MTA did not fulfill its obligations under the contract; did not provide access to various sites where work was to be performed; and refused to cooperate in scheduling the performance of work. Lockheed also alleged that inadequate conditions in the communication rooms, where work was to be performed, contributed to delays.

The MTA denied the allegations and filed a counterclaim, stating that Lockheed had breached fundamental and material provisions of the parties' contract, resulting in substantial delays and monetary damages. The MTA also alleged that Lockheed failed to perform its design obligations; manage its subcontractors; adhere to contracted scheduling requirements; provide software maintenance and updating services; and provide a training program.

Lockheed is seeking at least \$80 million for wrongful termination or \$138 million for breach of contract. The MTA is seeking at least \$60 million to complete the project, \$28 million in damages, and \$4 million for overpayments. A trial or settlement is expected to be at least a year away, and litigation costs could exceed \$10 million.

The MTA has continued work on the electronic security program by hiring other contractors. The MTA has told us that the program will be fully operational by June 30, 2011, but another six months will be needed to complete testing.

The cost of the electronic security program is expected to nearly double, growing from \$265 million to \$515 million. Nearly half of the increased cost is due to the inclusion of additional facilities (\$110 million), with most of the balance due to unplanned costs associated with facilities to house the command and control centers (\$51 million) and the upgrading and repair of computer networks (\$33 million).

A joint effort between the MTA and the New York Police Department (NYPD) resulted in the accelerated installation of 561 MTA electronic security cameras at three of New York City's busiest transit hubs. Work was completed in October 2010, and now live video feeds are provided to the NYPD's security command center as part of a security initiative for Lower and Midtown Manhattan.

The electronic security program has achieved operational capability at one of the MTA's four operating agencies, and while another operating agency is receiving important benefits, some work remains to be done. A third agency has made progress, but full implementation is not scheduled until June 2011.

A fourth agency recently gained access to the video feeds from the NYPD. While nearly all of the intelligent video cameras and other electronic intrusion devices have been installed at the fourth agency, the entire system is not expected to be operational until June 2011.

The MTA Police Department (MTAPD) has begun transitioning into the central command center, which will have access to the electronic security systems of the MTA's four operating agencies. The MTAPD will use an updated version of its existing software for dispatch and case management because of problems with the software that was originally contemplated.

Phase 2

Phase 2 will fund some of the remaining 33 security projects of the original 57 that were identified through a risk-based assessment. Two large structural hardening projects were completed as part of Phase 1, and three smaller projects have also been completed. Four projects are in construction; seven are still in design; and one has been cancelled. The MTA will not commence work on the remaining 16 projects until the scope is determined and funding becomes available.