Metropolitan Transportation Authority: East Side Access Cost Overruns

Thomas P. DiNapoli
New York State Comptroller

Kenneth B. Bleiwas
Deputy Comptroller

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Highlights

- **East Side Access is the first expansion of the LIRR in more than 100 years and is expected to reduce travel times by 30 to 40 minutes per day for thousands of commuters.**
- **The cost of ESA has grown from the MTA's initial estimate of $4.3 billion to $8.25 billion, with completion pushed back ten years, from 2009 to 2019.**
- **The MTA's official cost estimate, however, excludes the full cost of passenger railcars associated with the project, which raises the cost of the project to $8.76 billion.**
- **More than half of the $4.4 billion in cost overruns occurred after the MTA entered into a full-funding agreement with the federal government in 2006, when engineering and design work was largely completed.**
- **The cost of building the new LIRR terminal below Grand Central Terminal has grown from the MTA's initial estimate of $709 million to $1.9 billion.**
- **The cost of the Queens segment, which mostly involves tunneling, has doubled, from $695 million to $1.4 billion.**
- **The costs for track, signals, and power and communication systems have nearly tripled, growing from $331 million to $901 million.**
- **The MTA's share of the cost of ESA has grown from $2.2 billion to $5.6 billion, an increase of more than 150 percent. The federal government is contributing $2.7 billion and New York State is contributing $450 million.**
- **Debt service for the MTA's capital program, which is reflected in the MTA's operating budget, is projected to reach $3 billion by 2019 (nearly 50 percent higher than in 2012). ESA could account for more than $300 million (nearly 11 percent) of the total.**

The Metropolitan Transportation Authority (MTA) is constructing one of the largest and most complex public works projects in the country, East Side Access (ESA). ESA will bring Long Island Rail Road (LIRR) service to the East Side of Manhattan for the first time, at Grand Central Terminal (GCT). The MTA expects ESA to spur numerous benefits for the region, including faster commutes, expanded transportation options and economic growth. Although major tunneling has been completed, ESA is less than half-finished.

The MTA expected ESA to cost $4.3 billion in 1999 and to be completed in 2009 after eight years of construction. These estimates were based on conceptual plans made as the project was beginning its environmental review and preliminary engineering phase. The MTA claims that it was not until 2006 that the project was sufficiently designed so that reasonable budgets and schedules could be developed. By that time, the cost had grown to $6.3 billion and the completion date had been pushed back to December 2013.

The MTA currently estimates that ESA will cost nearly $8.25 billion and will begin service, after 18 years of construction, by August 2019 (ten years later than originally planned). The estimated cost, however, will reach $8.76 billion (more than twice the original estimate and $2.4 billion more than the MTA's 2006 estimate) when the MTA reflects the full cost of the passenger railcars needed to meet expected service demand.

In 1999, the merits of ESA were debated given its relatively high cost, competing capital needs and the MTA's limited resources. Since then, the cost has more than doubled to nearly $9 billion. Although ESA is the most egregious example, the MTA has also underestimated the cost and time to complete other capital projects. The MTA must learn from this experience given its limited resources and the impact that borrowing has on the operating budget, which contributes to higher fares.

Project Overview

Plans to bring direct commuter service from Long Island and Queens to the East Side of Manhattan have been considered since at least the 1960s. In 1969, the MTA began construction of a two-level tunnel under the East River at 63rd Street, with the upper level for subway trains and the lower level reserved for future LIRR service to an eventual East Side terminal. Work on the subway component was discontinued during New York City's fiscal crisis in the 1970s, but was finally completed in 2000.

In September 1999, the MTA estimated that ESA would cost $4.3 billion and would begin revenue service in November 2009. The MTA had originally planned to bring LIRR trains directly into the existing lower level of Grand Central Terminal (GCT), but the 2001 environmental impact statement determined that constructing a separate concourse and LIRR cavern below GCT had "substantial advantages in terms of cost, constructability, and operations, and significantly fewer . . . risks during construction."

Preparatory construction began in late 2001, but it took another five years for the cost and design estimates to be developed sufficiently for the Federal Transit Administration (FTA) to authorize $2.7 billion toward the project under a Full Funding Grant Agreement. By that time, the cost of ESA had grown to $6.3 billion. Major tunneling contracts were awarded in 2006, 2008 and 2009.

As shown below, connecting the LIRR from its existing tracks in Queens to a new terminal below GCT entails a number of large construction tasks.

In Queens, new tunnels were bored underneath Sunnyside Yard to join the LIRR Main Line and Port Washington Branch with the lower level of the existing 63rd Street Tunnel. ESA requires extensive modifications to Harold Interlocking, a complex series of tracks and switches shared by Amtrak, the LIRR and New Jersey Transit.

At the Manhattan end of the existing 63rd Street tunnel, new tunnels were bored at depths reaching 140 feet beneath the surface, curving under Park Avenue and below the existing Metro-North Railroad tunnels to GCT.

East Side Access Overview

Source: Metropolitan Transportation Authority

The new Manhattan tunnels continue south to a large cavern below the current lower level of GCT, which will be finished as an eight-track, bi-level terminal for the new LIRR East Side service. A mezzanine will connect the two track levels, and a series of escalators and elevators will connect the mezzanine with a new LIRR concourse (see below).

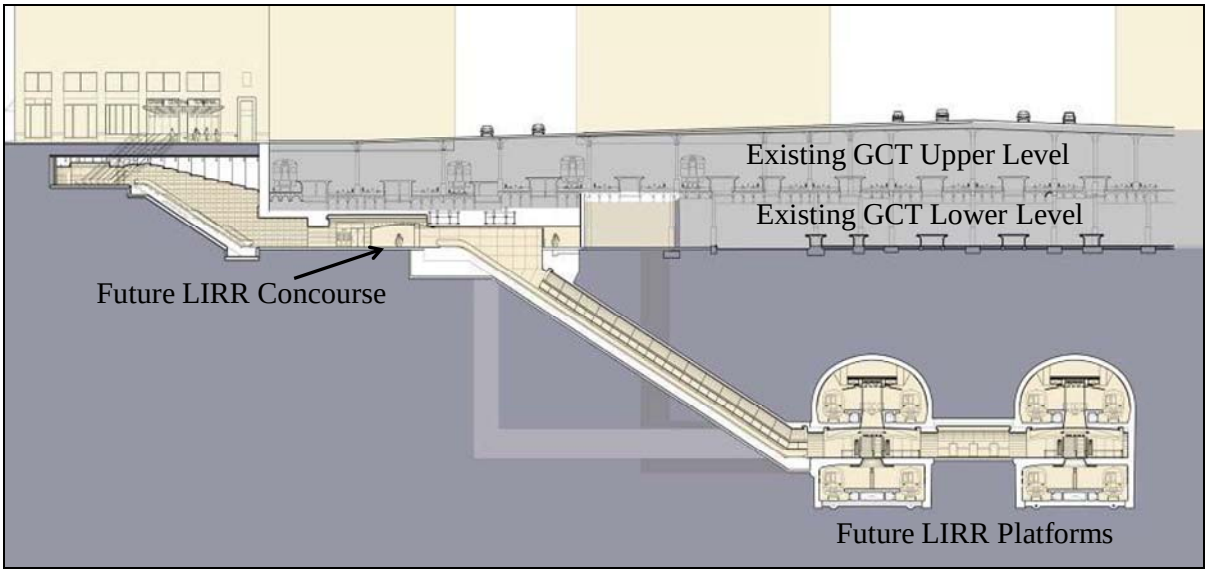
Several facilities, such as ventilation shafts, power stations and storage yards, are also being constructed to support the project. At the same time that construction related to ESA is taking place at Harold Interlocking, the MTA is also making improvements that will benefit Amtrak and future Metro-North service. These regional improvements are funded separately and are not part of the ESA project.

Budget and Schedule History

A chronology of notable revisions to the project's budget and schedule is outlined below.

- In September 1999, the MTA Board approved the MTA's preliminary 2000-2004 capital program, which included $1.5 billion to complete ESA design and begin construction. The MTA estimated that ESA would begin service in 2009, at a total cost of $4.3 billion after eight years of construction.
- In April 2001, the MTA elected to construct a new concourse and a cavern below GCT because doing so had a number of advantages over the original plan of bringing LIRR trains into the existing lower level of GCT. Despite the change in plans, the cost remained unchanged at $4.3 billion, though the initial service date was pushed back to December 2011.
- By the time the federal Full Funding Grant Agreement (FFGA) was executed in December 2006, the project's cost had grown to $6.3 billion and the initial service date had been postponed to December 2013.
- In September 2009, the MTA Board approved a revised budget and project schedule. The cost of ESA had risen to $7.3 billion, with service expected to begin in September 2016. An additional $513 million was placed in a separate reserve for railcars pending further study.
- Also in 2009, the FTA estimated that ESA would cost $8.1 billion (including railcars) and would not begin service until April 2018; nevertheless, the MTA believed that it could meet its own deadline of 2016.

East Side Access: Grand Central Terminal



Source: Metropolitan Transportation Authority

- In May 2012, the MTA estimated that ESA could cost nearly $8.25 billion ($8.76 billion including the cost of railcars) and could begin service as late as August 2019. The MTA expects to enter into a revised FFGA this spring that reflects the new budget and schedule estimates, as well as the full cost of the railcars.

The MTA's latest estimates include a contingency reserve of $360 million, and the MTA has built a 12-month cushion into the schedule. The MTA believes that there is an 80 percent probability that the actual cost of ESA may be at or below its current estimate, and that revenue service could begin up to one year earlier than currently forecast. Conversely, there is a 20 percent probability of additional costs or delays.

These estimates do not take into account the impact of Superstorm Sandy. While Superstorm Sandy did not cause physical damage to ESA, the MTA estimates that work at Harold Interlocking could be delayed by three months (at a cost of $20 million) because MTA and Amtrak resources were needed elsewhere to restore service and repair damaged assets. Within the next three months, the MTA expects to determine whether the delay will have an impact on the overall project schedule.

As shown in the table on the next page and discussed below, the cost of various components of the ESA project has grown dramatically over the years (by $2 billion before the FFGA was signed in 2006, and by another $2.4 billion since then). Given the growth in the cost of the project, the U.S. Department of Transportation's Office of the Inspector General (OIG) has begun an audit of the FTA's oversight of ESA.

New LIRR Terminal: The cost of the new terminal has grown from $709 million to $1.9 billion, an increase of $1.2 billion (170 percent). The terminal accounts for more than one-quarter of the unplanned costs associated with ESA, and, while most of the cost increase occurred before the FFGA was signed in 2006, the cost has grown by $401 million (27 percent) since then.

Queens Alignment: Work in Queens primarily includes boring tunnels through soft ground under Sunnyside Yard and simultaneously digging under active subway lines and roadways. The estimated cost for this work has doubled from $695 million to $1.4 billion. Most of the increase (70 percent) occurred after the MTA entered into the FFGA.

Project-Wide Systems: The cost of contracts to install track, signals, and communications equipment has nearly tripled, growing from $331 million to $901 million, an increase of $570 million. Most of the increase (65 percent) occurred after the MTA entered into the FFGA.

Engineering and Project Management: The cost for various professional and technical services has grown from $884 million to $1.4 billion. Nearly all of the increase (93 percent) occurred after the MTA entered into the FFGA.

Force Account: Certain tasks, known as force account work, are performed by Amtrak and MTA crews. The cost for this work has more than doubled, from $295 million to $664 million. Three-fourths of the increase occurred before the FFGA in 2006. According to the MTA, most force account work involves wiring and signaling at Harold Interlocking.

Harold Interlocking: Costs to reconfigure Harold Interlocking have more than doubled, from $222 million to $500 million, with nearly all of the increase (97 percent) occurring since the FFGA in 2006.

Rolling Stock: The ESA budget initially included funding to purchase 180 passenger railcars to meet expected service demands, but the current budget includes funding for only 50 railcars. Funding for an additional 122 cars was included in a separate reserve in the MTA's current capital program, pending a simulation of service needs. The MTA has completed the simulation, which confirms that 172 railcars will be needed at a cost of $715 million, or $513 million more than allocated in the current ESA budget. When funding for the additional railcars is transferred to the ESA budget, the total cost of ESA will reach $8.76 billion.

East Side Access Cost Breakdown

(in millions)

	Initial Estimate[1]	2006 FFGA	Current Estimate	Change in Cost Estimates Pre-FFGA	Post-FFGA	Total
EIS, Engineering, Project Mgmt.	$ 883.7	$ 921.7	$ 1,433.9	$ 38.0	$ 512.2	$ 550.2
Real Estate	165.0	165.0	166.3	0.0	1.3	1.3
Subtotal	**1,048.7**	**1,086.7**	**1,600.2**	**38.0**	**513.5**	**551.5**
Construction						
New LIRR Terminal	709.0	1,511.0	1,912.3	802.0	401.3	1,203.3
Manhattan Alignment	473.9	606.5	586.8	132.6	(19.7)	112.9
Queens Alignment	694.9	896.5	1,368.5	201.6	472.0	673.6
Project-Wide Systems	331.4	529.9	901.1	198.5	371.2	569.7
Force Account	294.8	574.5	663.9	279.7	89.4	369.1
Harold Interlocking	221.9	231.2	500.0	9.3	268.8	278.1
Insurance	110.0	250.0	173.9	140.0	(76.1)	63.9
Other	NA	119.8	336.3	119.8	216.5	336.3
Subtotal	**2,835.9**	**4,719.4**	**6,442.8**	**1,883.5**	**1,723.4**	**3,606.9**
Railcars	**465.5**	**531.2**	**715.0**	**65.7**	**183.8**	**249.5**
Total	**$ 4,350.1**	**$ 6,337.3**	**$ 8,758.0**	**$ 1,987.2**	**$ 2,420.7**	**$ 4,407.9**

[1] The initial MTA budget estimates used here are consistent with the current project configuration approved by the FTA in 2001.

Sources: Metropolitan Transportation Authority; OSC analysis

Reasons for Higher Costs and Delays

In response to a draft of this report, the MTA stated that its initial 1999 estimate was based on conceptual plans and that there was virtually no engineering behind the estimate. According to the MTA, it was not until 2006 that the design of the project was sufficiently advanced so that reasonable budgets and schedules could be developed.

The MTA also stated that in 1999, ESA was "a very different project than what is being built" today. The MTA had originally planned to bring LIRR trains directly to the lower level of GCT, but it decided in 2001 to construct a separate concourse and cavern for a new LIRR terminal below GCT because doing so had a number of perceived advantages, including cost. Despite the change in plans, the estimated total cost for ESA remained essentially unchanged, at $4.3 billion, although the completion date was pushed back by two years. The MTA has acknowledged that little engineering had been done on the alternative plan for a new terminal.

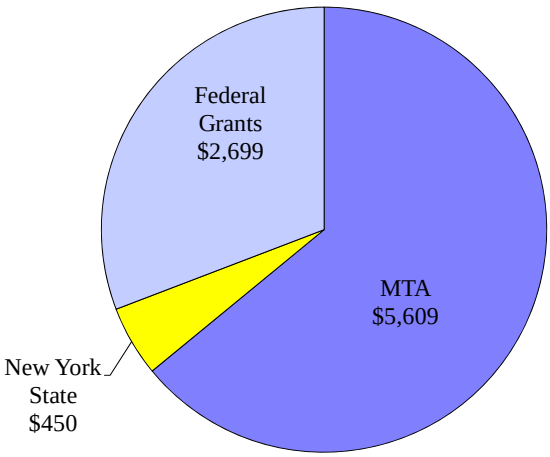
The MTA has offered a number of explanations for the increased costs and delays since its 2006 estimate, including: overly aggressive schedules; the number of large infrastructure projects in New York City and elsewhere, which reduced competitiveness; a contractor that performed poor quality work and subsequently defaulted; unforeseen construction challenges; cost escalation due to longer project duration; and, more recently, an Amtrak rehabilitation project of the East River tunnels.

Sources of Funding

As shown on the following page, nearly two-thirds of the cost of ESA is coming from the MTA ($5.6 billion, including railcars), with the balance coming from the federal government ($2.7 billion) and New York State ($450 million). The portion of ESA funded by the MTA has grown from less than $2.2 billion to $5.6 billion. Most of the resources for the MTA's share will come from bonds, which will increase debt service that will need to be funded with operating budget resources, such as fare and toll revenue.

East Side Access: Sources of Funding

(in millions)



Sources: Metropolitan Transportation Authority; OSC analysis

Debt service for the MTA's capital program, which is reflected in the MTA's operating budget, is projected to reach $3 billion by 2019 (nearly 50 percent higher than in 2012). ESA could account for more than $300 million (nearly 11 percent) of the total.

The MTA has also applied for a $3 billion low-interest federal loan under the Railroad Rehabilitation and Improvement Financing program, which is still awaiting federal approval.

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Office of the State Comptroller, New York City Public Information Office
633 Third Avenue, New York, NY 10017
(212) 681-4840