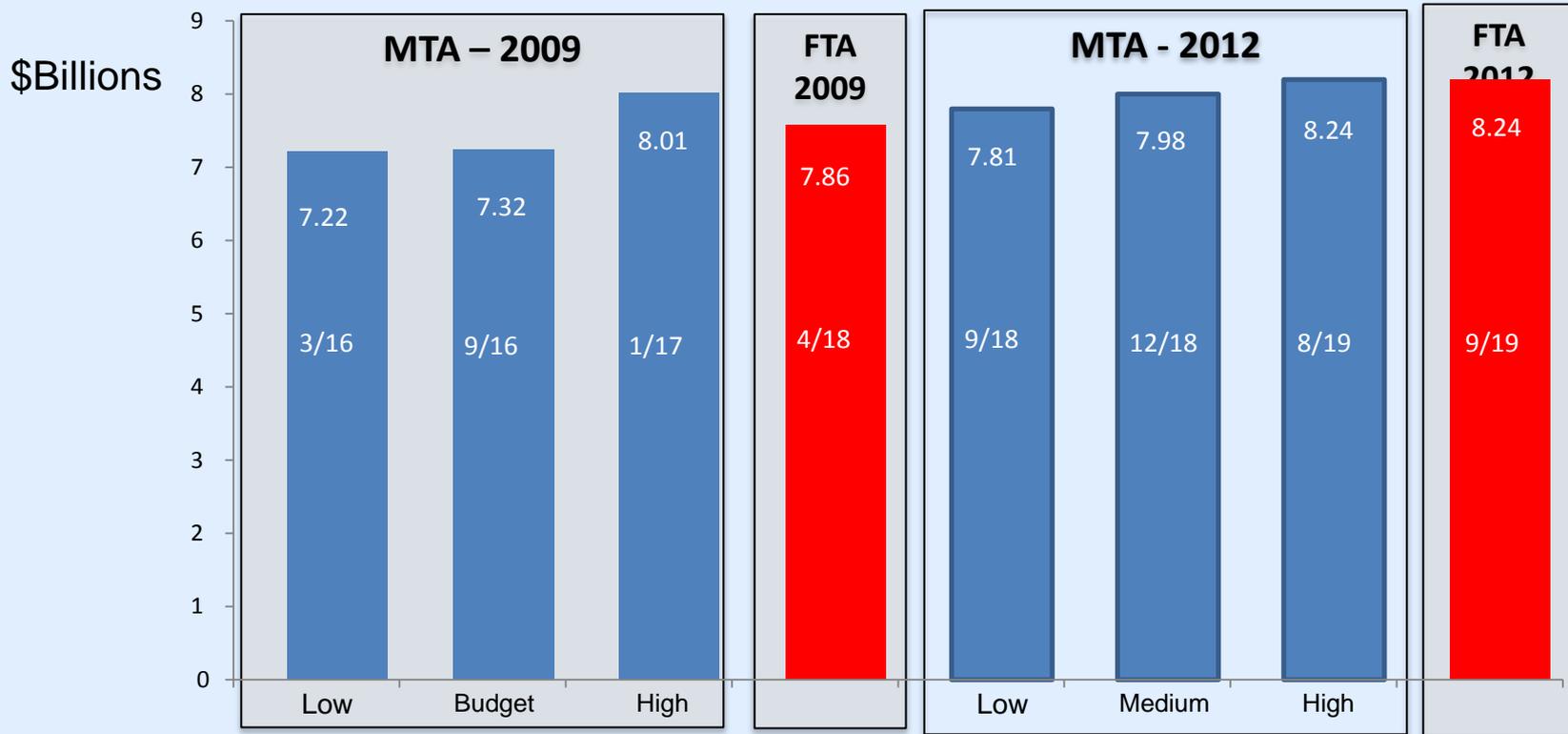


**MTACC CPOC
ESA – Overview and Budget/Schedule
Risk Assessment**

May 21, 2012



ESA - Budget & Schedule Ranges



Numbers do not include \$463 M for rolling stock which is budgeted separately in Rolling Stock Reserve



Risk Informed Budget and Schedule

	Basis for Risk Assessment		Risk Informed Base Cost & Schedule	Contingency	Total Risk Informed Value
Revenue Operation Date	December 2017		August 2018	12 months	August 2019
Budget	\$7.72 B		\$7.88 B	\$0.36 B	\$8.24 B

- FTA independently concurs with budget
- Total Risk Informed Values are consistent with MTA's current Risk Policy of 80% probability that the project will be delivered at or below the risk informed budget of \$8.24B and schedule of 8/2019
 - Following this policy the 2009 rebase-lining would have resulted in a \$8.01B budget
- \$360M of contingency represents approximately 8% of the remaining \$4.6B to be spent
- Over \$1.5B in awards are scheduled for the next 12 months; providing greater cost certainty
- Efficiency in MTACC Projects and inter-agency program will fund additional \$200M commitment need in current '10 to '14 Plan
- Balance (\$720M) to be addressed in '15 to '19 Plan with expectation that additional efficiencies in MTACC Projects can cover some of the increase

What Changed?

- By mid-2011, MTACC was reporting significant construction delays in both Manhattan and Harold
- Delays in Harold resulted in schedule compression that placed stress on resources and outages
- Other critical regional projects have put further pressure on resources and outages
- Both cost and schedule contingency have been largely consumed



Steps Taken

- Developed a new forecast estimate and schedule
- Used as the Basis for Risk Assessment conducted by Golder Associates
 - Independent facilitator and modeler
- Identified major risks driving cost and schedule
- Produced new Risk Informed Base Cost and Schedule plus Contingency
- Established New Total Risk Informed Value which provides 80% probability that the final cost and schedule will be at or below these levels

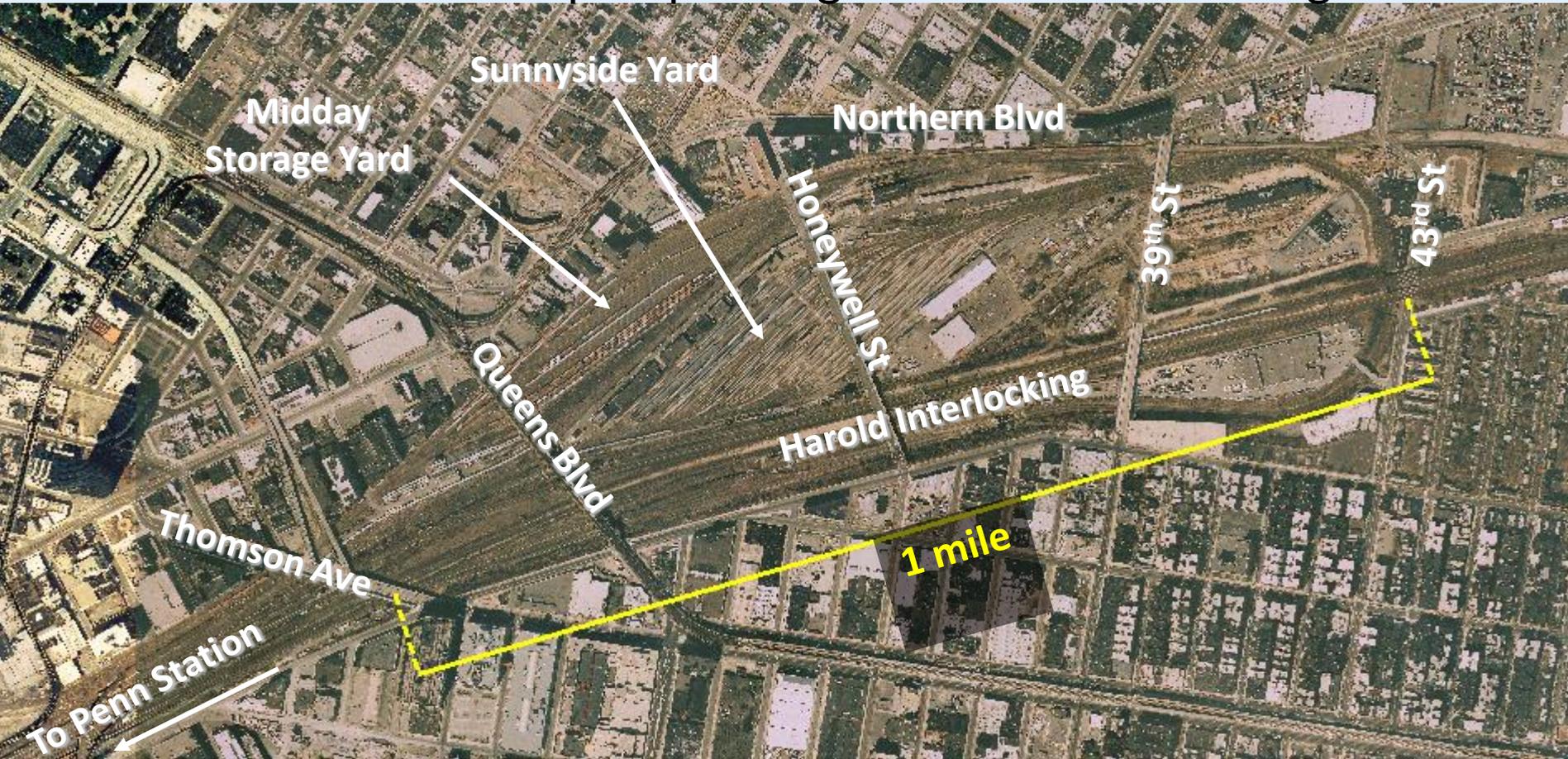


Potential Risks and Mitigations



Rebuilding and Expansion of Harold Interlocking

Busiest and most complex passenger railroad interlocking in US



Need for critical track outages and craft personnel timed to ESA needs

Major Rail Projects in the New York Metropolitan Region



ESA was originally planned before other projects materialized

Highlights in Harold

- Replacing and adding 92 new switches (231% increase)
- Replacing 11 miles of new track (16% increase)
- Constructing five new railroad bridges
- Replacing and installing 313 new catenary poles and signal towers (43% increase)
- Constructing 1.25 miles of new retaining wall
- Replacing and installing 12 new Central Instrument Locations for signal (300%)
- Constructing two (1,000 ft long) new by-pass tunnels

Most of this infrastructure will go on line prior to ESA Revenue Service and will provide a significant benefit to Amtrak and LIRR operations



Shared ESA Tunnel Access and Coordination Issues

- Limited access paths for major equipment and material
- Portions of tunnels get blocked when installing track and a variety of systems
- Multiple contractors working in the same tunnels in both Manhattan and Queens



Procurement Risks

- Limited Competition
 - Size of Contracts
 - Complexity of Contracts
- Upcoming Major Contracts
 - Manhattan Structures
 - Two Systems Contracts
 - GCT Concourse Fit-out



Risk Delays During Installation and Integration

- Installation of a significant number of system elements
- Interface and integration of new and legacy systems



Mitigations

- Continue to monitor actual experience
 - Not all risks will materialize
- Need a dynamic and flexible approach to maintain confidence in meeting or exceeding targets
- Opportunities fall into three categories
 - Engineering
 - Contract Interface/Coordination
 - Policy



Potential Mitigations

- Engineering
 - Continue the work of the Operational Readiness group formed with LIRR to address testing and commissioning
 - Re-sequencing of Harold cut-overs
 - Creating an Obsolescence Review Committee (during construction) to evaluate systems elements to determine product end of life cycle and the system or component version to implement
- Contract Interface/Coordination
 - Continue to create additional access points in Queens, Harold and Manhattan
 - Scope transfers between contracts
- Policy Decisions
 - Potential Service Reductions

Summary

	Risk Informed Base Cost & Schedule	Contingency	Total Risk Informed Value
Revenue Operation Date	August 2018	12 months	August 2019
Budget	\$7.88 B	\$0.36 B	\$8.24 B

- Continue to use Risk Model as a management tool
- Need to work with all stakeholders on mitigation strategies
- Periodic reporting to CPOC on progress and success with mitigation strategies



IEC Comments

- IEC participated in cost and schedule review and Risk Assessment and supports the results
- Most significant near-term risk
 - Procurement challenges to upcoming large and complex contracts

