Contract CM-1311
Consultant
Construction Management Services
Overview Meeting
April 10, 2006
No. 7 Subway Line Extension
Number 7 Subway Line Extension

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No. 7 Subway Line Extension
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Parsons Brinckerhoff Quade & Douglas, Inc.
No. 7 Subway Line Extension Project
Number 7 Subway Line Extension

Project Background
No. 7 Project Context
Existing Hudson Yards Area
PURPOSE: Existing Primary Land Use

- Commercial
- Residential
- Transportation
- Industrial
- Institutional
- Parking
- Open Space
TRANSPORTATION

- Existing service
Proposed Action

- Proposed Rezoning
- Open Space Network
- No. 7 Subway Extension
- Convention Center Expansion
- Multi-Use Facility
- DSNY / NYPD Tow Pound Facility
Jacob Javits Convention Center Expansion
Proposed Multi-Use Facility
PB Team

Metropolitan Transportation Authority

OVERVIEW

PUBLIC ACTIONS:

- Expand transportation
2025 Projected Development
Future Development - 2025

- **2010 Analysis Year**
  - First full year of operation for the No. 7 Line
  - Completion of the Multi-Use Facility
  - Completion of Convention Center expansion
  - Portion of development within rezoning area completed

- **2025 Analysis Year**
  - Commercial: 24.3M SF
  - Residential: 13.4M SF
  - Hotel: 1.0M SF
  - Retail: 1.0M SF
  - Theater: 0.1M SF
  - Community Facility: 0.7M SF

- **Total Development**: 40.5M SF
# Final Environmental Impact Statement

No. 7 Subway Extension—Hudson Yards Rezoning and Development Program

## FG&EIS SUMMARY TABLE OF CONTENTS

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## Chapter 1: Purpose and Need
- Appendix A.1: Proposed Zoning Text and Map Amendments
- Appendix A.2: Reasonable Worst-Case Development Scenario Summary Tables
- Appendix A.3: Conceptual Analysis for Neighborhood Parks
- Appendix B: (not used)
- Appendix C: (not used)
- Appendix D: Socioeconomic Conditions
- Appendix E: (not used)
- Appendix F: Community Facilities
- Appendix G: (not used)
- Appendix H: (not used)
- Appendix I: Shadows
- Appendix J: Architectural Historic Resources
- Appendix K: Archaeological Resources
- Appendix L: (not used)
- Appendix M: (not used)
- Appendix N: Natural Resources
- Appendix O: Hazardous Materials
- Appendix P: Infrastructure
- Appendix Q: (not used)
- Appendix R: Energy

## Chapter 2: Description of the Proposed Action
- Appendix S.1: Trip Generation
- Appendix S.2: Traffic Analysis
- Appendix S.3: Parking Analysis
- Appendix S.4: Transit Analysis
- Appendix S.5: Pedestrian Analysis

## Chapter 3: Analytical Framework

## Chapter 4: Land Use, Zoning, and Public Policy

## Chapter 5: Socioeconomic Conditions

## Chapter 6: Community Facilities and Services

## Chapter 7: Open Space and Recreational Facilities

## Chapter 8: Shadows

## Chapter 9: Architectural Historic Resources

## Chapter 10: Archaeological Resources

## Chapter 11: Urban Design and Visual Resources

## Chapter 12: Neighborhood Character

## Chapter 13: Natural Resources

## Chapter 14: Hazardous Materials

## Chapter 15: Waterfront Revitalization Program

## Chapter 16: Infrastructure

## Chapter 17: Solid Waste and Sanitation Services

## Chapter 18: Energy

## Chapter 19: Traffic and Parking

## Chapter 20: Transit and Pedestrians

## Chapter 21: Air Quality

## Chapter 22: Noise and Vibration

## Chapter 23: Construction Impacts

## Chapter 24: Public Health

## Chapter 25: Unavoidable Adverse Impacts

## Chapter 26: Alternatives

## Chapter 27: Growth-Inducing Aspects of the Proposed Action

## Chapter 28: Irreversible and Irretrievable Commitments of Resources

## Chapter 29: Responses to Comments

## Appendix AA: Transcripts of FG&EIS Public Hearing

## Appendix BB: Written FG&EIS Comments Received
Number 7 Subway Line Extension

Project Scope
Number 7 Subway Line Extension
Number 7

Shaft & Laydown Areas:
- Site A
- Site P
- Site K

Construction Access & Laydown Areas:
- Site J
- Site L
TBM
Drill & Blast
Cut & Cover
Limits
Site A

Eleventh Avenue
Site A Shaft and Adit

Eleventh Avenue

Site A

Existing Utilities (Typ)

Soil

Rock

Adit
Lining Options

Pre-Cast Segmental Lining

Cast-in-Place Lining
TBM Performance Requirements

- Tunnel ID = minimum 19 feet 6 inches + construction tolerances
- 650 ft minimum horizontal radius
- Full-face hard rock TBM with capability to negotiate short reaches of mixed face and possible soft ground conditions.
- Capable of negotiating very strong & very/extremely abrasive rock (Manhattan Schist & Pegmatites)
- Option to utilize:
  - pre-cast segmental lining systems- both to be watertight undrained systems.
  - Gripper, Shield or Double-shield type TBMs
TBM Performance Requirements cont’d

- Equipped with:
  - provisions for drilling probe holes and grout holes.
  - 17 inch or larger disc cutters
- Back-loaded cutter mountings
- Automated guidance system
- New or refurbished TBM’s
CHALLENGES

- **Ground Modifications**
  - Low rock (Mixed Face) at 27th Street along TBM path
  - Tenth Avenue – Underground Stream bed

- **Close proximity of existing structures:**
  - Amtrak North River tunnels
  - Amtrak Access tunnel (Empire Line)
  - Lincoln Tunnels
  - Port Authority (Below Bus Terminal)

- **Schedule**
Profile and Rock Line - 2

Approximate Rock Line
Top of Ground

No. 7 Tunnel

Lincoln Tunnels

34th St.
38th St.

11th Avenue Viaduct

Amtrak North Access Tunnel

Future Tenth Avenue Station

Future 34th Street Station

Future 34th Street Station

Jacob Javits Convention Center

34th St.
38th St.

Future 34th Street Station

Jacob Javits Convention Center

34th St.
38th St.
Port Authority Bus Ramp
Tail Track Configuration Near Existing Times Square Station
Existing IND Eighth Avenue Station
Existing IND Eighth Avenue Station

40th Street  41st Street  42nd Street

Eighth Avenue Station Looking North
Number 7 Subway Line Extension

Stations
34th Street Station
Final Design Configuration

Future Western Entrance by others

Station

Rearranged Facilities w/in Site J & LIRR requested easement

34th Street Entrance (reduced to 6 escalators)

Vehicular road maintained

COMPOSITE PLAN – Street Level

Relocated Systems Facilities below 11th Ave viaduct

Service/Vent stack

35th Street Entrance (relocated North Entrance)

Parking Below

Parking access ramps

Site P

Site J

Site K

36th Street

Eleventh Ave

33rd Street

35th Street

34th Street

Amtrak ROW below

Service Access below via 38th Street or Marshalling Yards

MTA Metropolitan Transportation Authority

HYDC Hudson York Development Corporation

PB Team
34th Street Entrance
Plaza Entrance
34th Street Entrance
Street Level Plan
34th Street Station
Cavern Rendering

Metropolitan Transportation Authority

MTA Metropolitan Transportation Authority

HYDC Hudson York Development Corporation

PB Team
Number 7 Subway Line Extension

Tenth Avenue Station
Tenth Avenue Shell – Street Plan
Tenth Avenue Station
Section at 42nd Street Entrance
Tenth Avenue Station Rendering
Philip W. McGrade, P.E.,
Program Manager
No. 7 Subway Line Extension Project
MTA Capital Construction

No. 7 Subway Line Extension
Number 7 Subway Line Extension

- Site A
- Site J
- Station Entrance
- 34th Street Station
- Site K
- Site P Station Entrance
- Site M
- Tenth Ave. Station
- Station Entrance
- Site L

MAP: Metropolitan Transportation Authority

PB Team
# Number 7 Subway Line Extension

## Construction Packaging

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Number 7 Subway Line Extension

Organization

- Project Committee
- Program Manager (MTA)
- Construction Manager (MTA)
- CCM Project Director
- CCM
- Inspectors
Number 7 Subway Line Extension

CCM Support

- Pre-Construction Phase
- Construction Phase
- Close-out
Number 7 Subway Line Extension

Pre-Construction Phase

- Perform Constructability Review
- Prepare Independent Construction Estimate
- Review Geotechnical Instrumentation Plan
- Provide Support during Contract Solicitations
Number 7 Subway Line Extension

Construction Phase

- Administer the Work Activities
- Provide Inspection Services
- Provide Quality Oversight
- Monitor Implementation of Safety Programs
- Review and Monitor Schedule
- Monitor and Coordinate Approval of Shop Drawings
- Process Payments and Change Orders
- Monthly Management Reporting
Number 7 Subway Line Extension

Close-out

• Provide Support during Close-out
Number 7 Subway Line Extension

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Website

www.mta.info/capconstr/7ext/documents.htm
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Questions & Answers