

# The Public Architect as City Builder

WE 203: The Public Architect as City Builder  
Wednesday, April 26, 2017, 8:30am – 5:30pm  
Learning Units 7.50 LUs/HSW/RIBA

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Questions related to specific products and services may be addressed at the conclusion of this presentation.

# Speakers List

- Lee Solomon, Deputy Director, New York City Housing Authority
- Ed Gauvreau, Chief, Planning Branch, Installation Support Division, HQ US Army Corps of Engineers (USACE).
- Michael Kaleda, Senior Vice President and Program Executive, MTA Capital Construction Company
- Michael Kelly, General Manager, New York City Housing Authority
- Margaret O'Donoghue Castillo, Chief Architect, NYC Department of Design and Construction
- Paul D. Smith, Portfolio Manager, NYC Department of Environmental Protection
- Deborah Goddard, Executive Vice President for Capital Projects, New York City Housing Authority



# Course / Learning Objectives

- Attendees will have analytic and conceptual tools to evaluate and deploy the design and construction of infrastructure strategies. With these tools, Public Architects and Designers of Public Infrastructure will become key decision makers in complex funding environments, leveraging knowledge and understanding gained in this workshop in support of this very necessary subject matter expertise.
- Upon completion, participants will be able to identify main types of public and private issues and will be able to access tools and resources to evaluate and navigate through authorities having jurisdiction and stakeholders.
- Upon completion, participants will be able to describe the competing demands for infrastructure development and will have made connections to other design professional experiences from whom they can learn.
- At the end of this workshop, participants will have helped to establish criteria to evaluate the viability of infrastructure project strategies, and hence for defining the role of design professionals.
- Upon completion, participants will have information necessary to shape decision-making to serve in creating the highest quality and best value public realm.

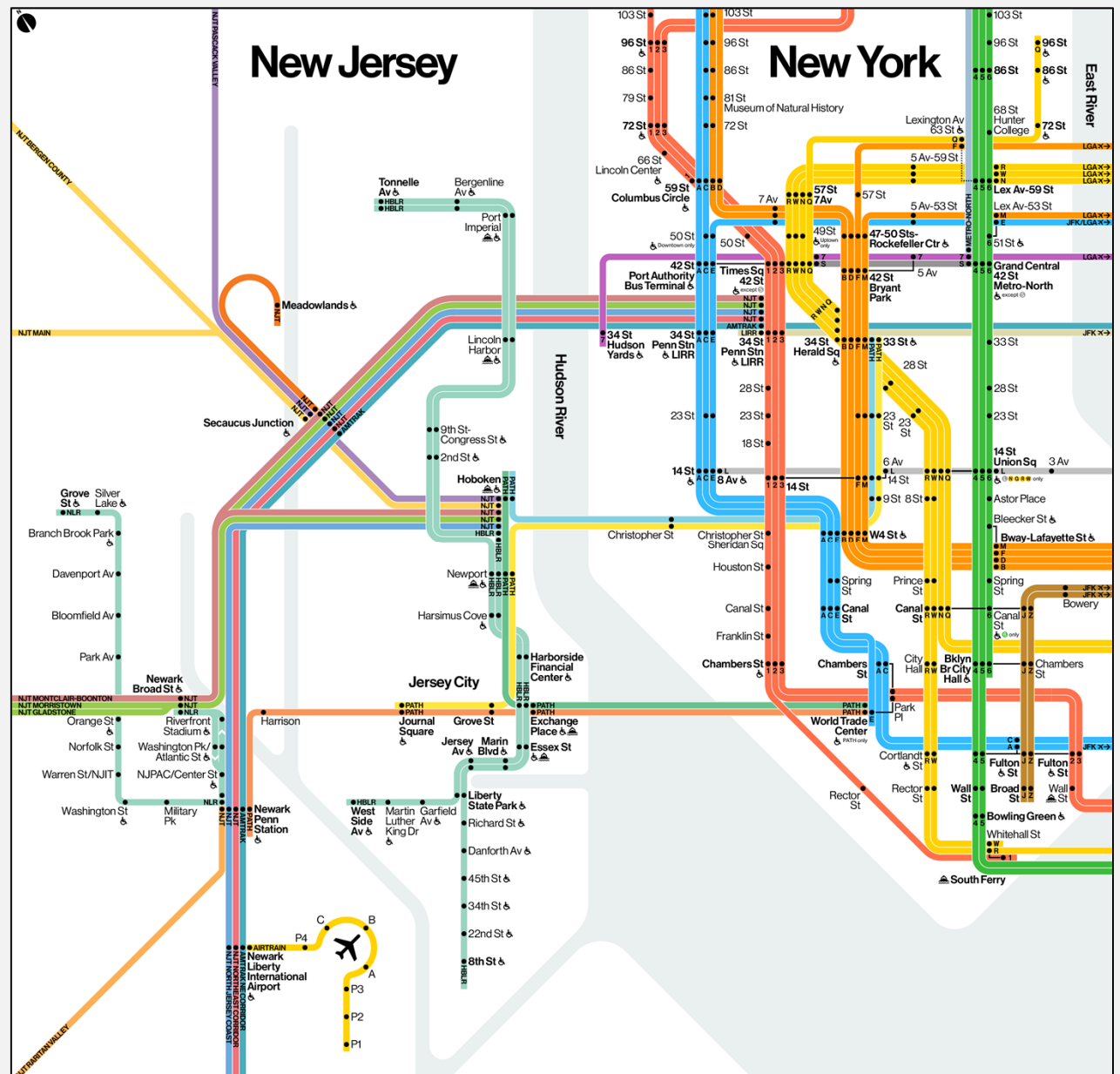
# Agenda

- NYC Public Transportation System
- The East Side Access Project
- The role of architects on East Side Access
- Lessons Learned
- Polling
- Q&A

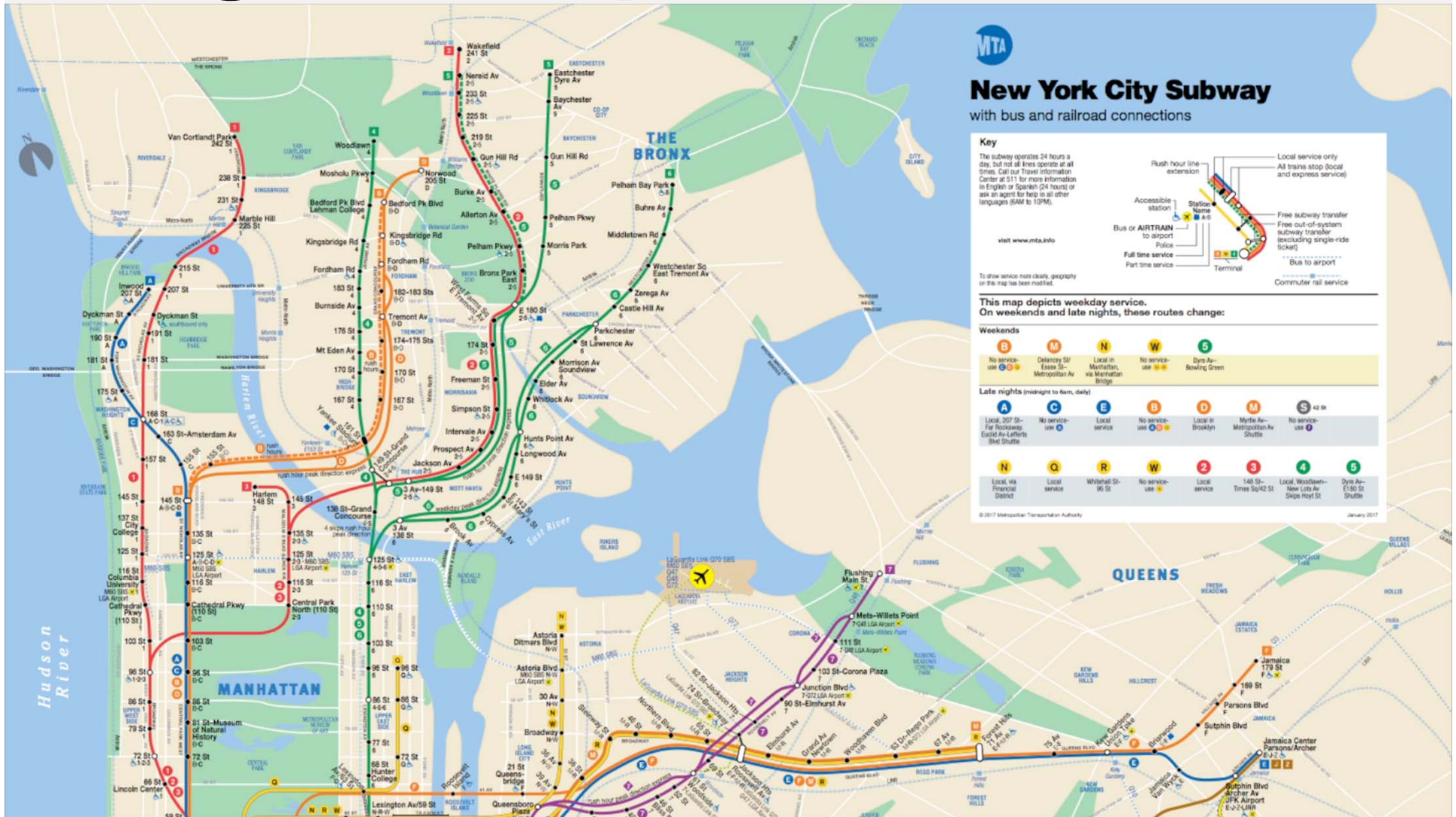
# NYC PUBLIC TRANSPORTATION SYSTEM

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# Regional Transit Diagram



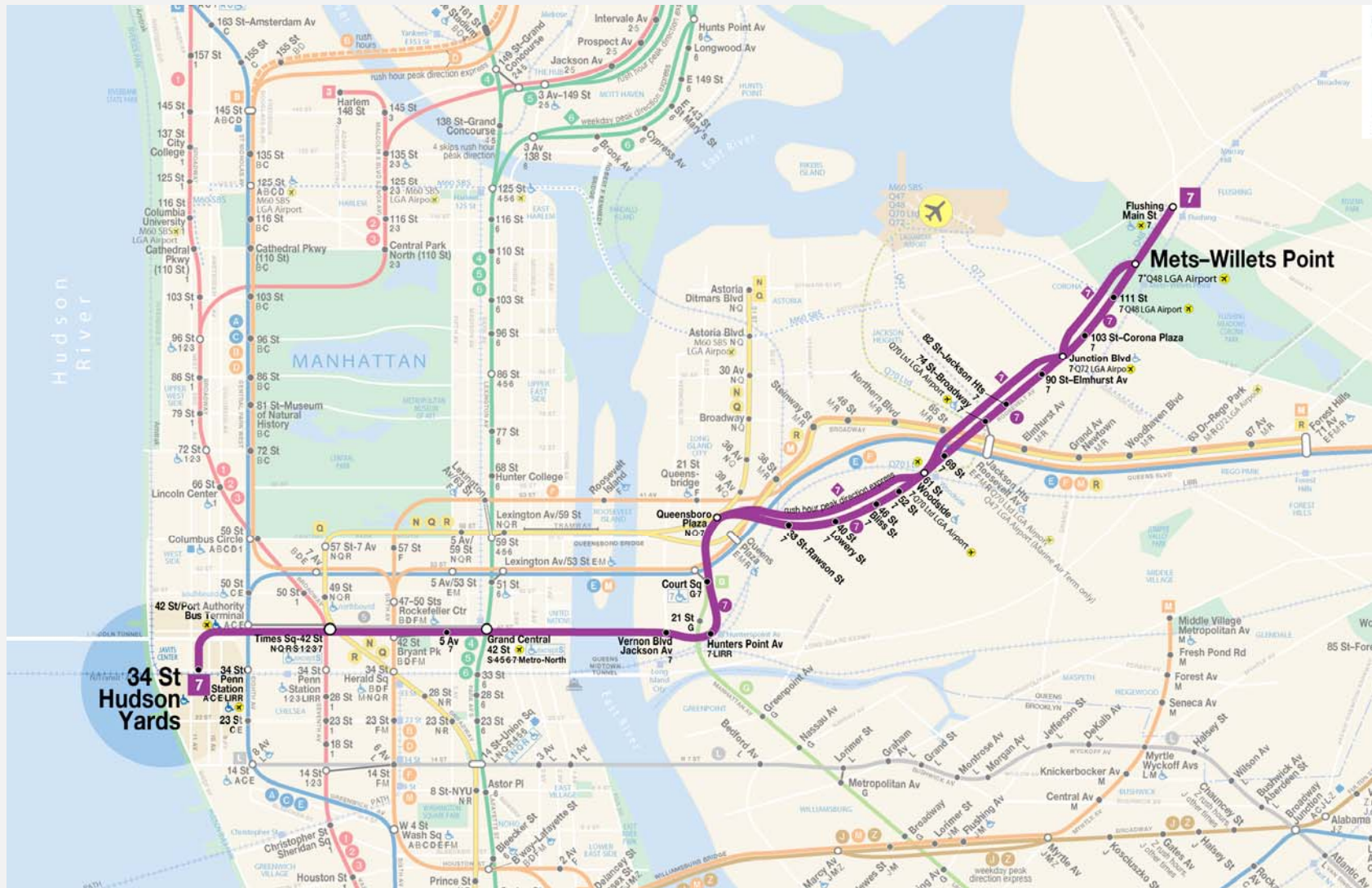
# Regional Map





# 7 Line Extension

Expanding the MTA  
Transportation Network



# Second Avenue Subway

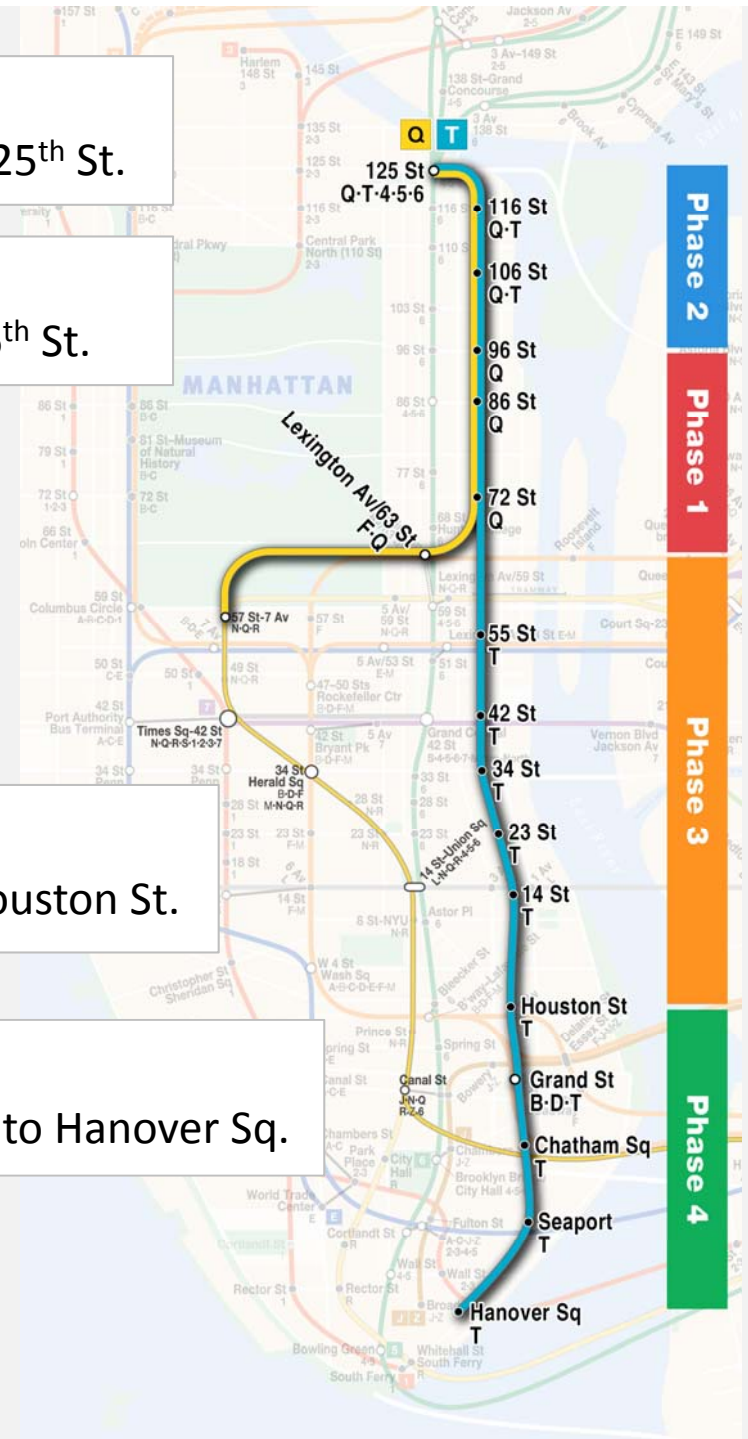
Expanding the MTA Transportation Network

**Q** Phase 2  
96<sup>th</sup> St. to 125<sup>th</sup> St.

**Q** Phase 1  
63<sup>rd</sup> St. to 96<sup>th</sup> St.

**T** Phase 3  
63<sup>rd</sup> St. to Houston St.

**T** Phase 4  
Houston St. to Hanover Sq.





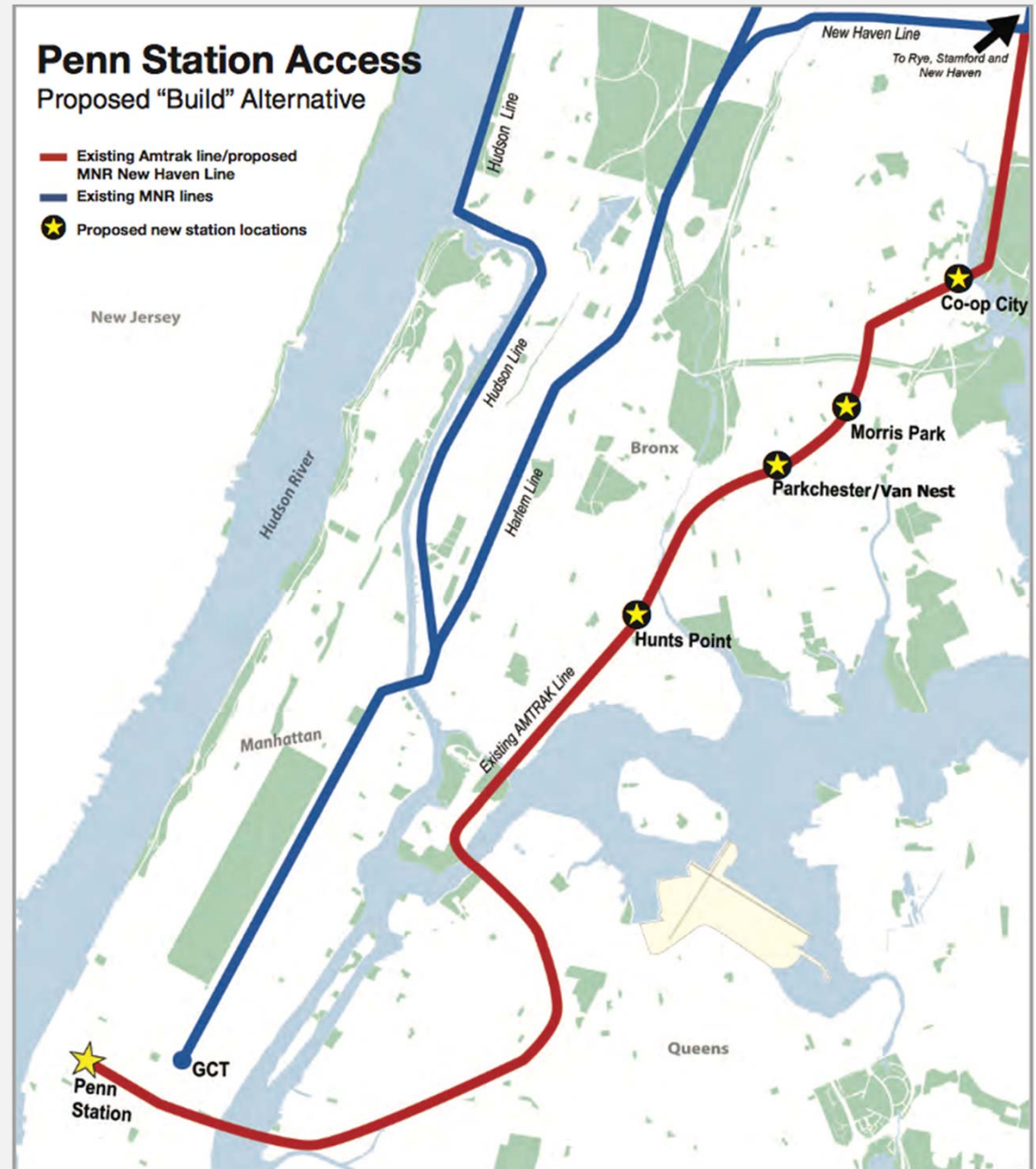
# Metro-North Railroad





# Metro-North Penn Station Access

Expanding the MTA  
Transportation  
Network



# Gateway Program







# MTA Capital Construction East Side Access

Bringing Long Island Rail Road to the east side of Manhattan

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# **EAST SIDE ACCESS PROJECT OVERVIEW**

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# Project Status

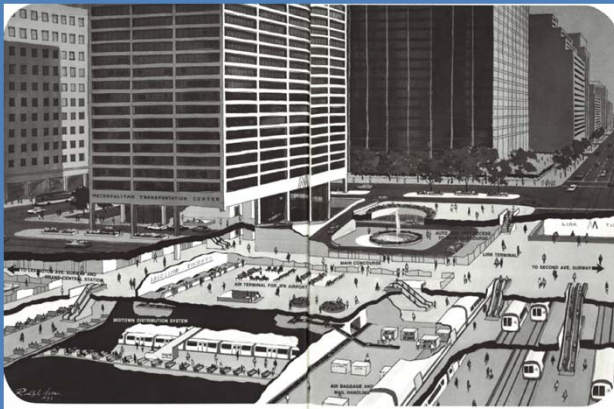
- Current ESA Budget: \$10.178 billion
  - \$2.7bn Federal
  - \$7.5bn State and MTA
- Additional Regional Investments: \$758 million
- Revenue Service Date: December 2022
- Over 90% of construction funds are committed to awarded contracts, as of the end of 2016
- Construction is 70% complete



# Project History

1968

1968



New York City plans to improve subway, railway and airport service in New York.

1969

Construction of the 63<sup>rd</sup> Street Tunnel under the East River commenced



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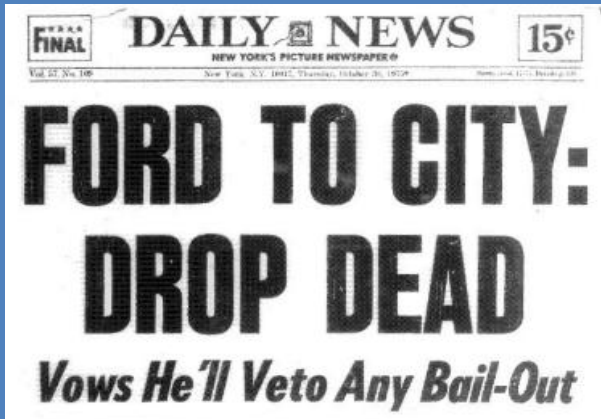
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## Legend

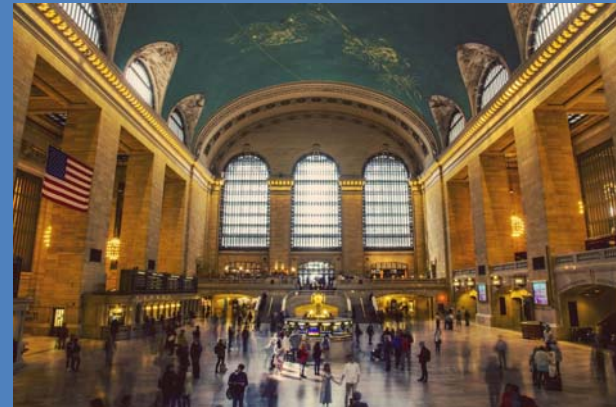
- Existing LIRR Tunnel Structure
- Manhattan - 8 Tunnels Excavate
- Queens - 4 Tunnels Excavated

1970's

New York City financial crisis impacts multiple projects putting this one on hold.



1998



Bringing Long Island Rail Road service to Grand Central Terminal is determined to be the best solution.

Planning and design commence.

2017

# Project History

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## Legend

- Existing LIRR Tunnel Structure
- Manhattan - 8 Tunnels Excavate
- Queens - 4 Tunnels Excavated

# LIRR



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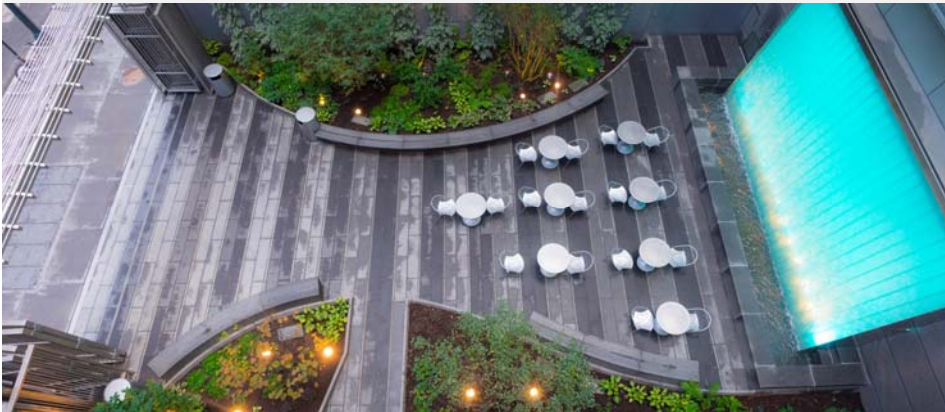
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## Legend

- Existing LIRR Tunnel Structure
- Manhattan - 8 Tunnels Excavate
- Queens - 4 Tunnels Excavated



# Project Scope



**New tunnels, a passenger concourse and 8 track train terminal beneath Grand Central Terminal.**

**New train yards and maintenance facilities in the Bronx for MNR and Queens for LIRR**

**New and modernized vent facilities in Queens and Manhattan**

**Expand and modernize Harold Interlocking**



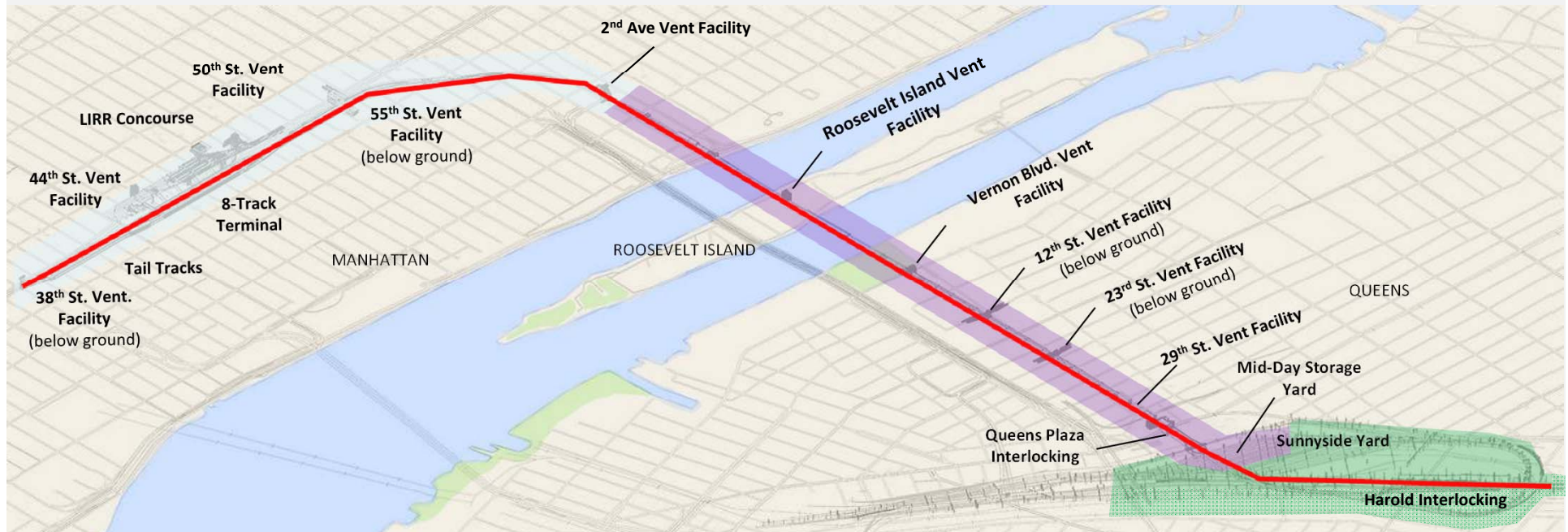
# Project Alignment



# Project Benefits

- Provide 162,000 passengers with a one-seat ride and saves east side-bound commuters from Queens and Long Island 30 to 40 minutes per day
- Improves the commuting experience in and around Penn Station
- Enables expansion of service for MNR customers and access to JFK Airport
- Supports job growth and development in the area surrounding Grand Central Terminal
- Improves operational flexibility through Harold Interlocking and adds redundancy and capacity for East River transportation

# Program Areas



## MANHATTAN - \$3.6 billion

- 6.1 miles of tunneling
- ~1.5 million CY of excavation
- 350,000 SF Concourse construction
- 8 Track Train Terminal construction
- Power and ventilation facility construction

## QUEENS - \$1.7 billion

- 2 miles of tunneling, 4 tunnels
- ~680,000 CY of excavation
- Interlocking, support facility and storage yard construction
- Power and ventilation facility construction and modernization

## HAROLD - \$1.6 billion\*

- Modernization, expansion and segregation of power, signal and communications
- Construction and expansion of civil infrastructure, tracks, switches, approaches, bypasses and reroutes

\* \$750M of regional improvements part of Harold predominantly High Speed Rail

## SYSTEMS - \$880 million

- Project wide electrical, mechanical, communication Railroad and control systems
- Testing and commissioning for eventual rail activation

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# Manhattan Caverns – Future Train Terminal



2 Caverns  
1,143 ft. long  
65' tall, 55' wide  
Manhattan Schist

FEBRUARY 2013

# Manhattan Caverns – Future Train Terminal



2 Caverns  
1,143 ft. long  
65' tall, 55' wide  
Manhattan Schist

DECEMBER 2013



# Manhattan Caverns – Future Train Terminal



APRIL 2014

# Manhattan Caverns – Future Train Terminal

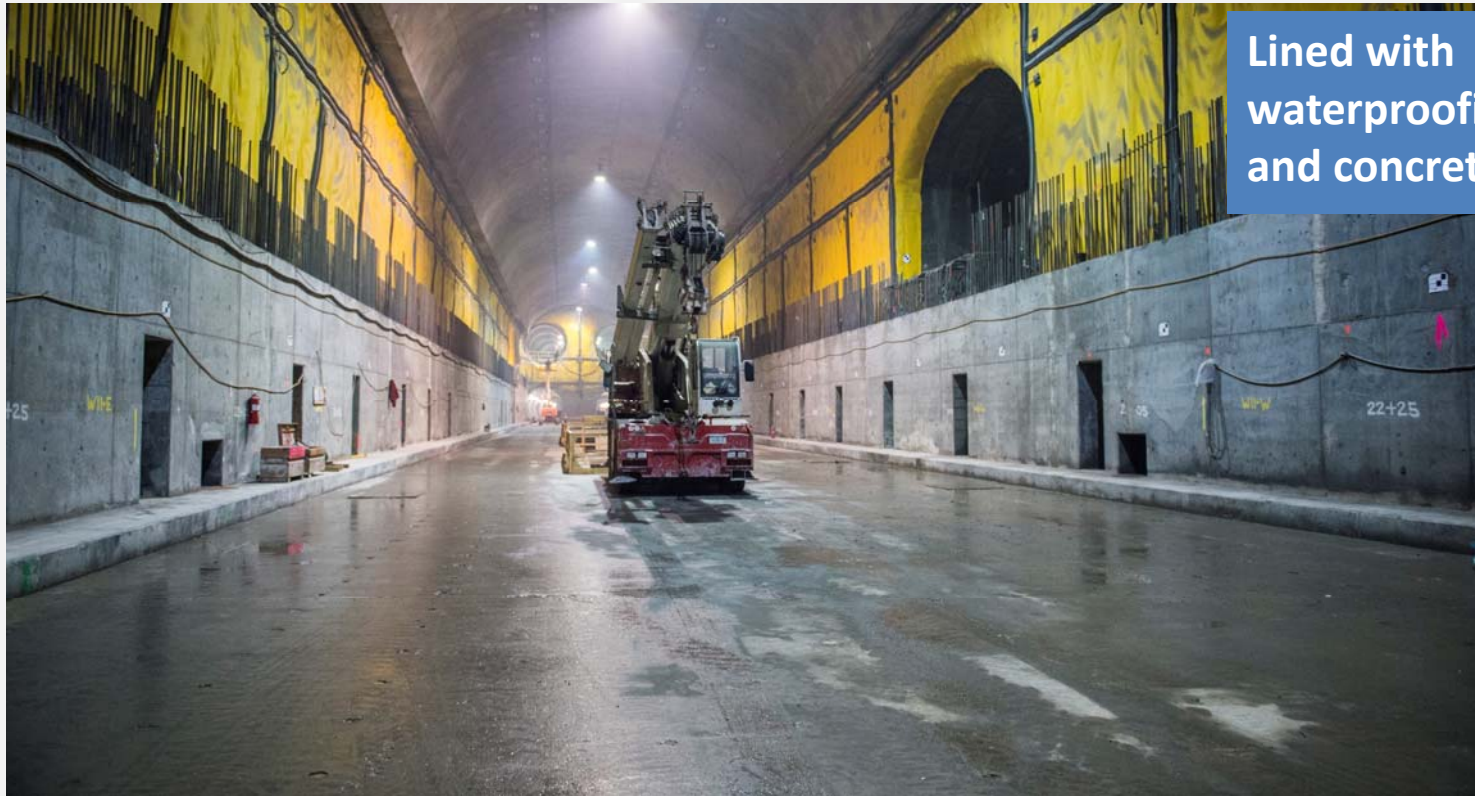


Lined with  
waterproofing, rebar  
and concrete

MARCH 2015



# Manhattan Caverns – Future Train Terminal



Lined with  
waterproofing, rebar  
and concrete

DECEMBER 2016

# Manhattan Caverns – Future Train Terminal



4,000 Pre-cast concrete pieces will form the passenger waiting areas and train platforms

FEBRUARY 2017

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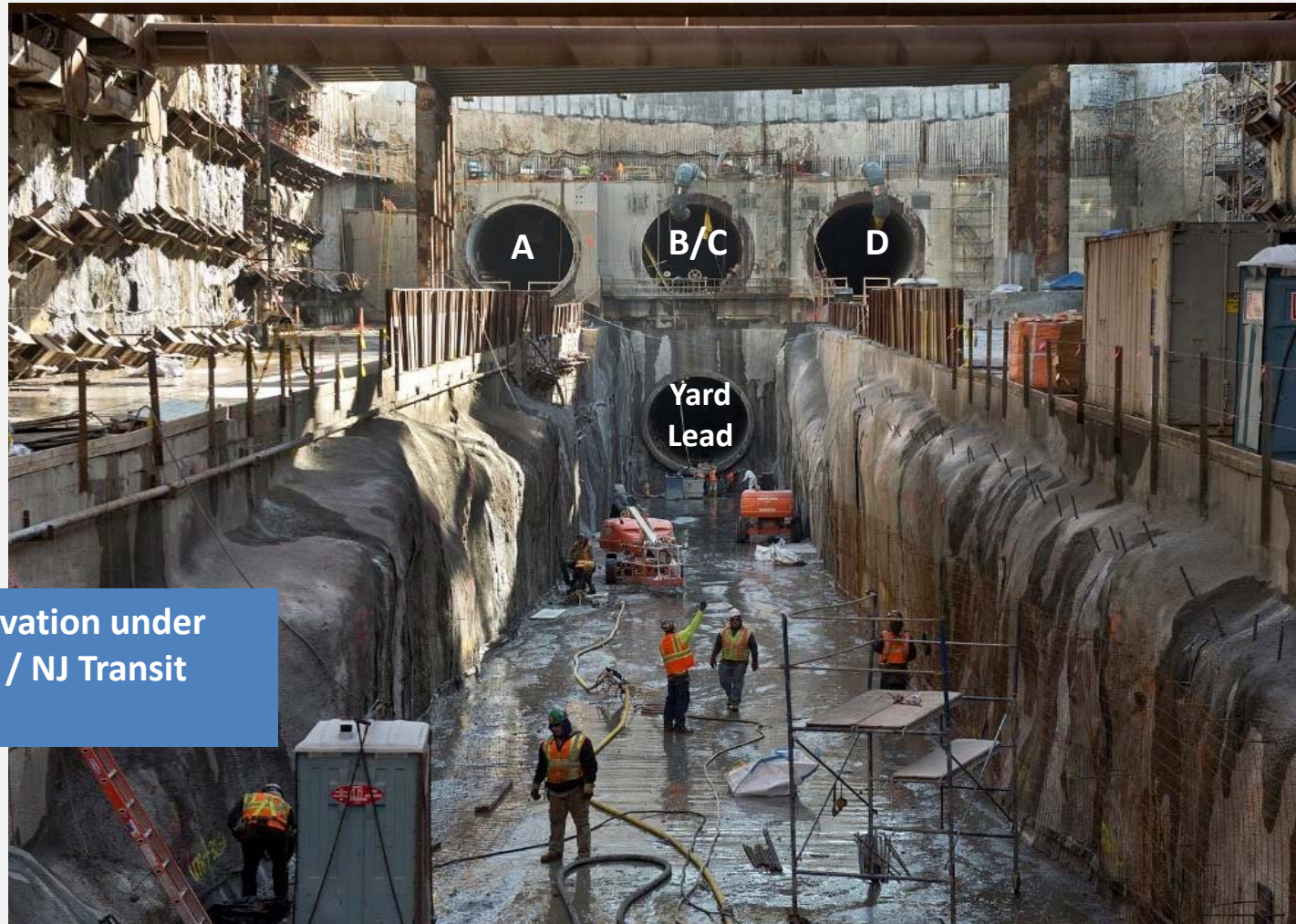
# Queens



Open cut excavation under  
active Amtrak / NJ Transit  
Tracks

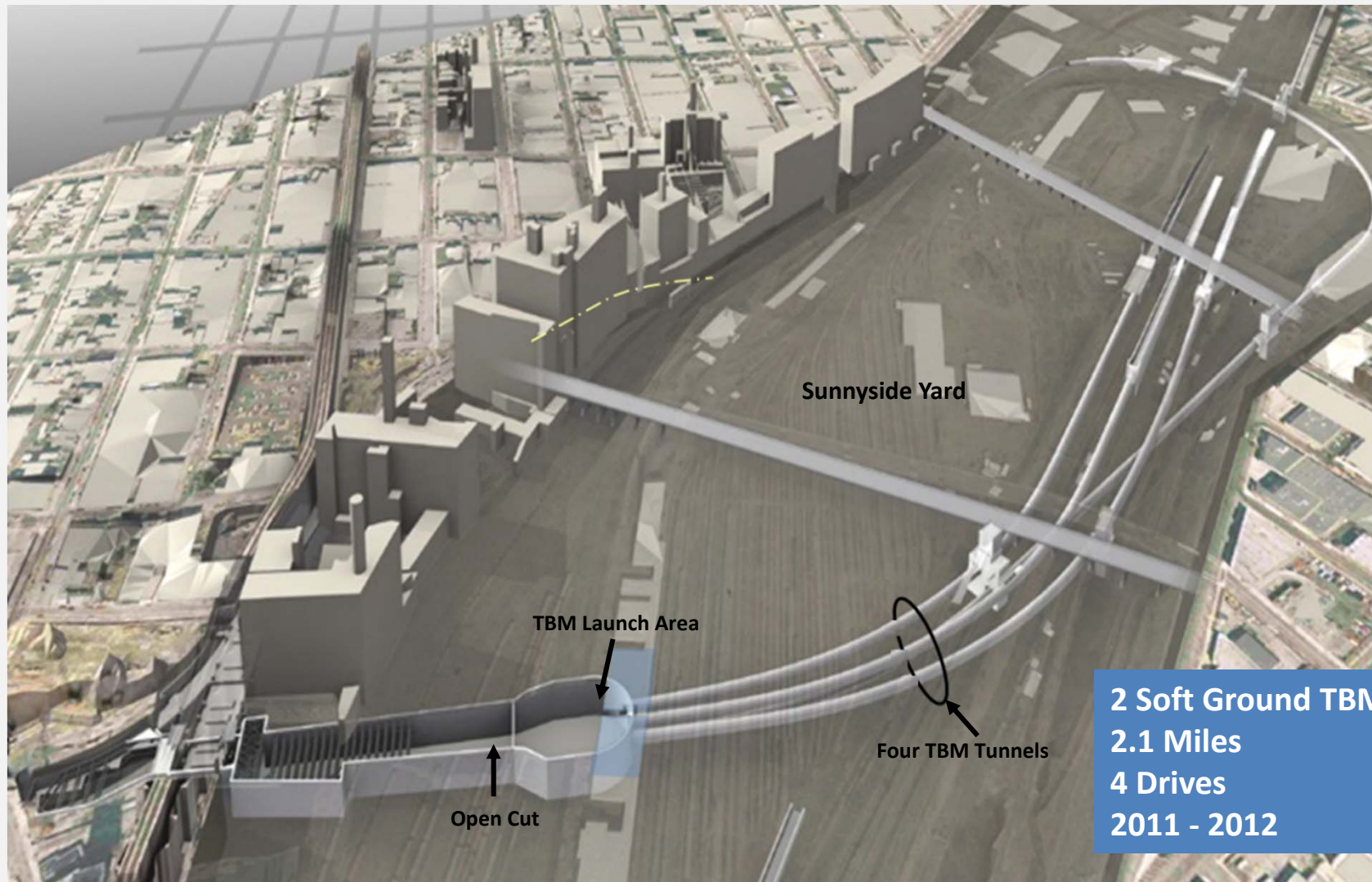


# Queens



Open cut excavation under  
active Amtrak / NJ Transit  
Tracks

# Queens Tunneling





# Harold Interlocking

Busiest passenger rail interlocking in North America  
Over 780 train movements a day  
Utilized by Amtrak, LIRR, NJ Transit and New York & Atlantic Railway





# Harold Interlocking



**96** new switches, **20+** miles of new track, **5** new railroad bridges, **315** new catenary poles, **1.6** miles of new retaining walls, **15** signal bridge replacements, **14** new signal huts, **6+** miles of new signal trough, **35** utility poles & **1,400** linear feet of mined bypass tunnels

# THE ROLE OF ARCHITECTS ON EAST SIDE ACCESS

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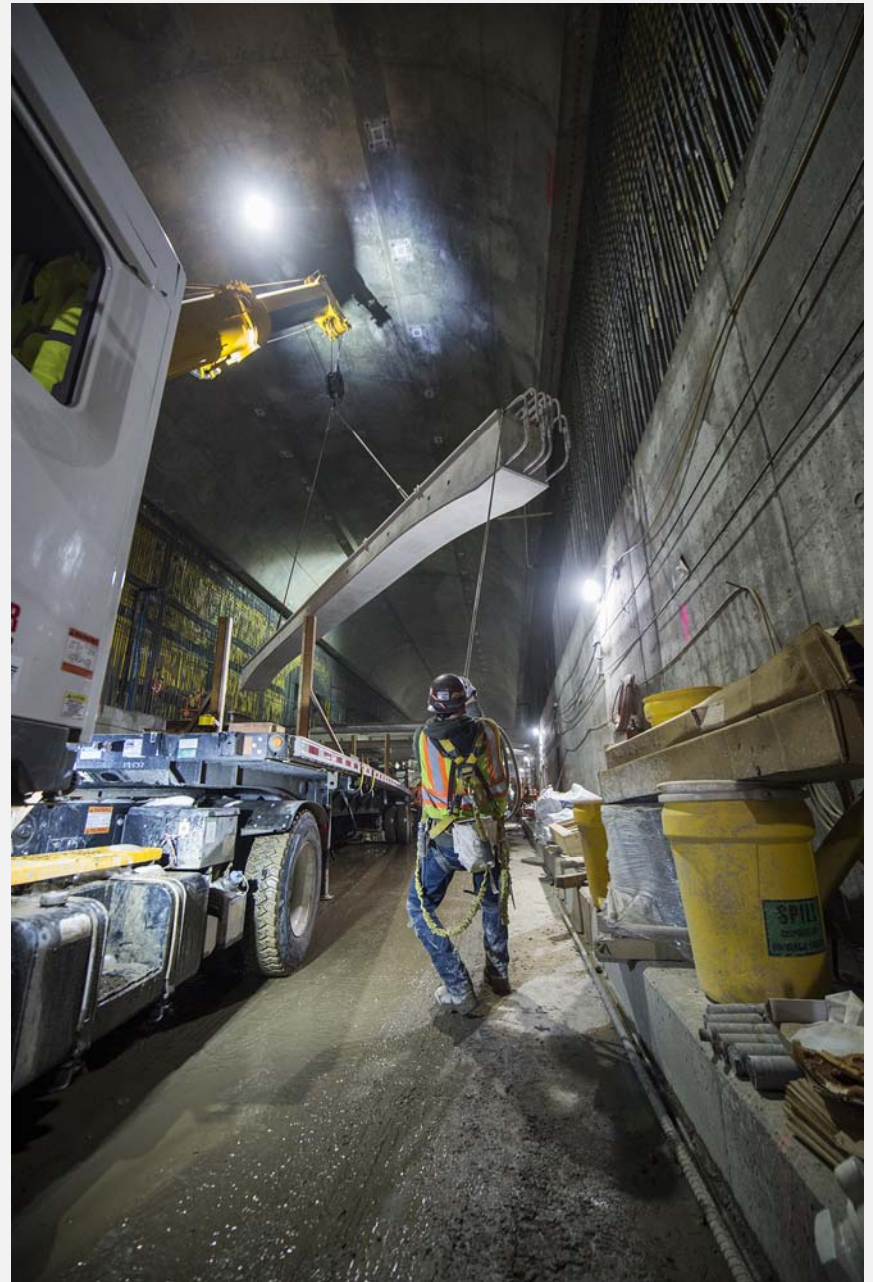


# The Role of Architects on East Side Access

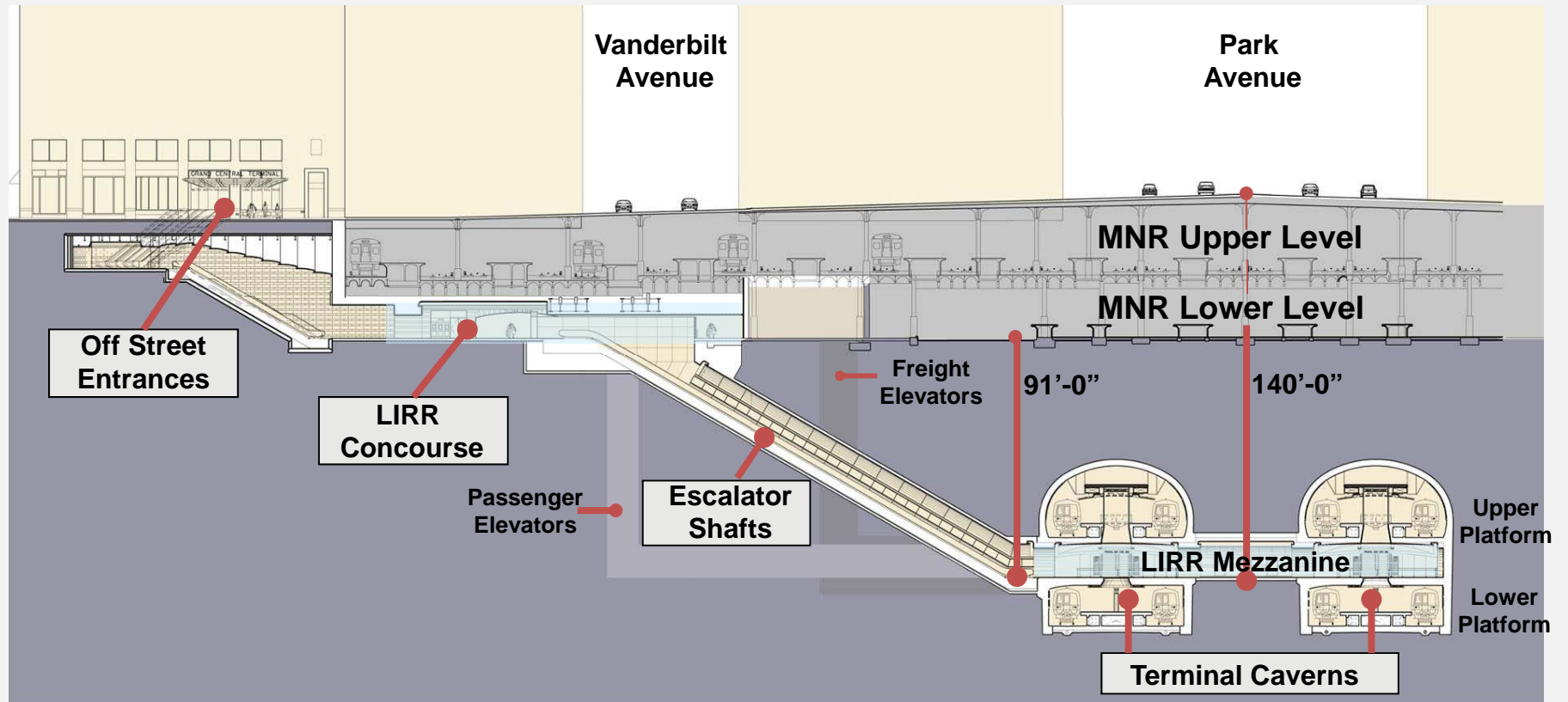
- Program Planning
- Design & Program Development
- Construction Phase Services
- Expanded Project Team
- Code Compliance

# Program Planning

- Design Criteria
- Scope Development
- Contract Packaging

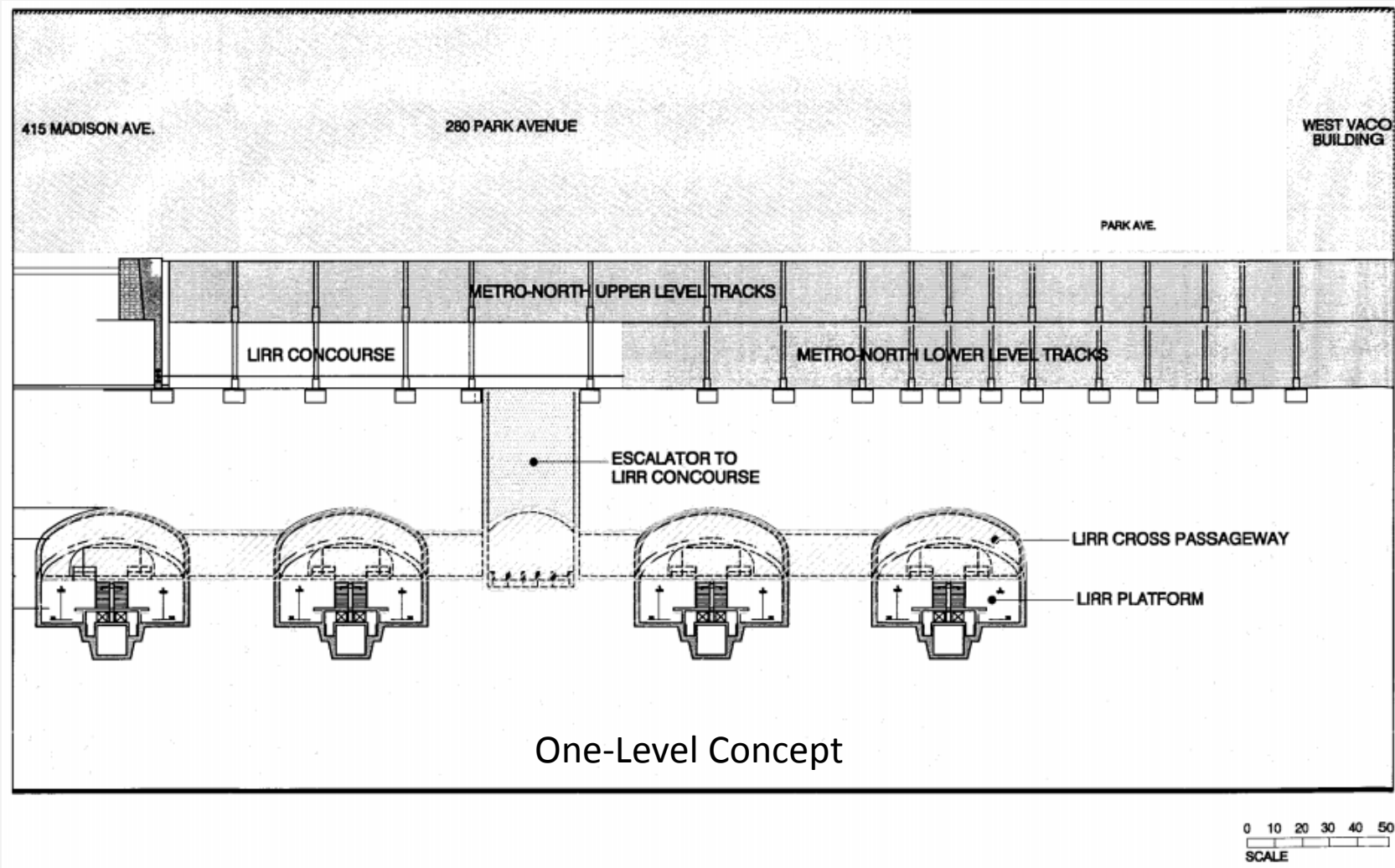


# Design & Program Development

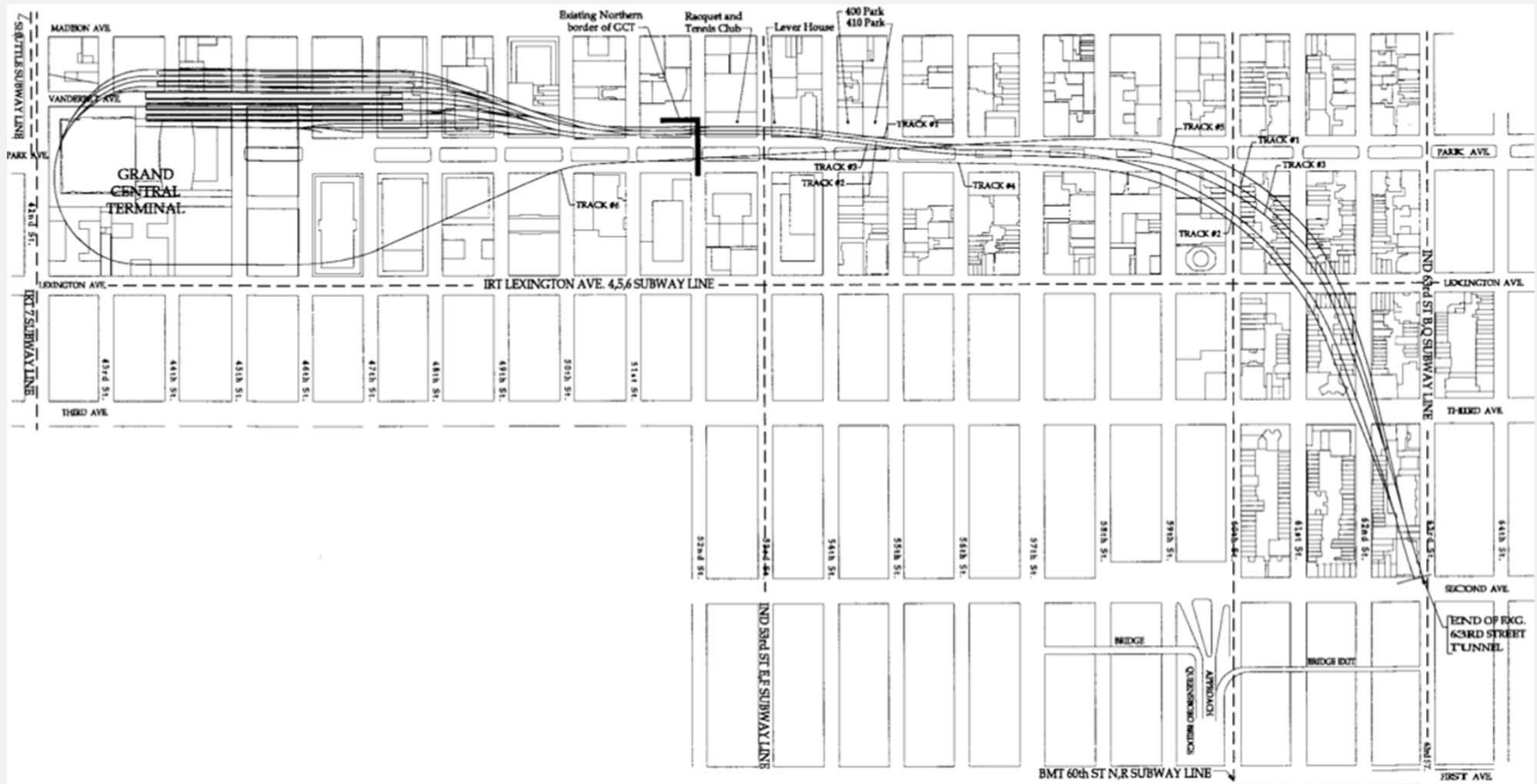




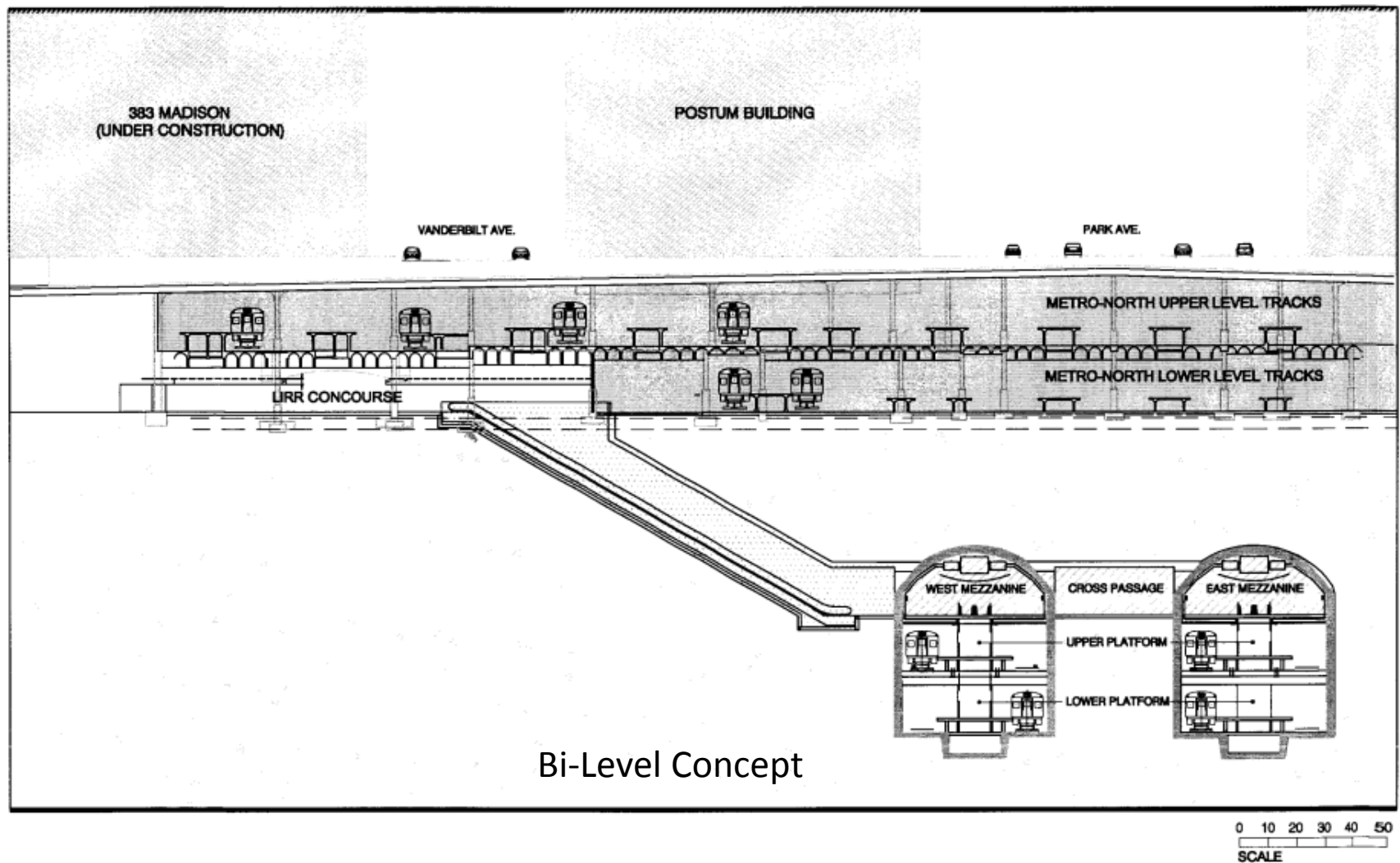
# Design & Program Development



# Station in Existing Lower Level of GCT Concept

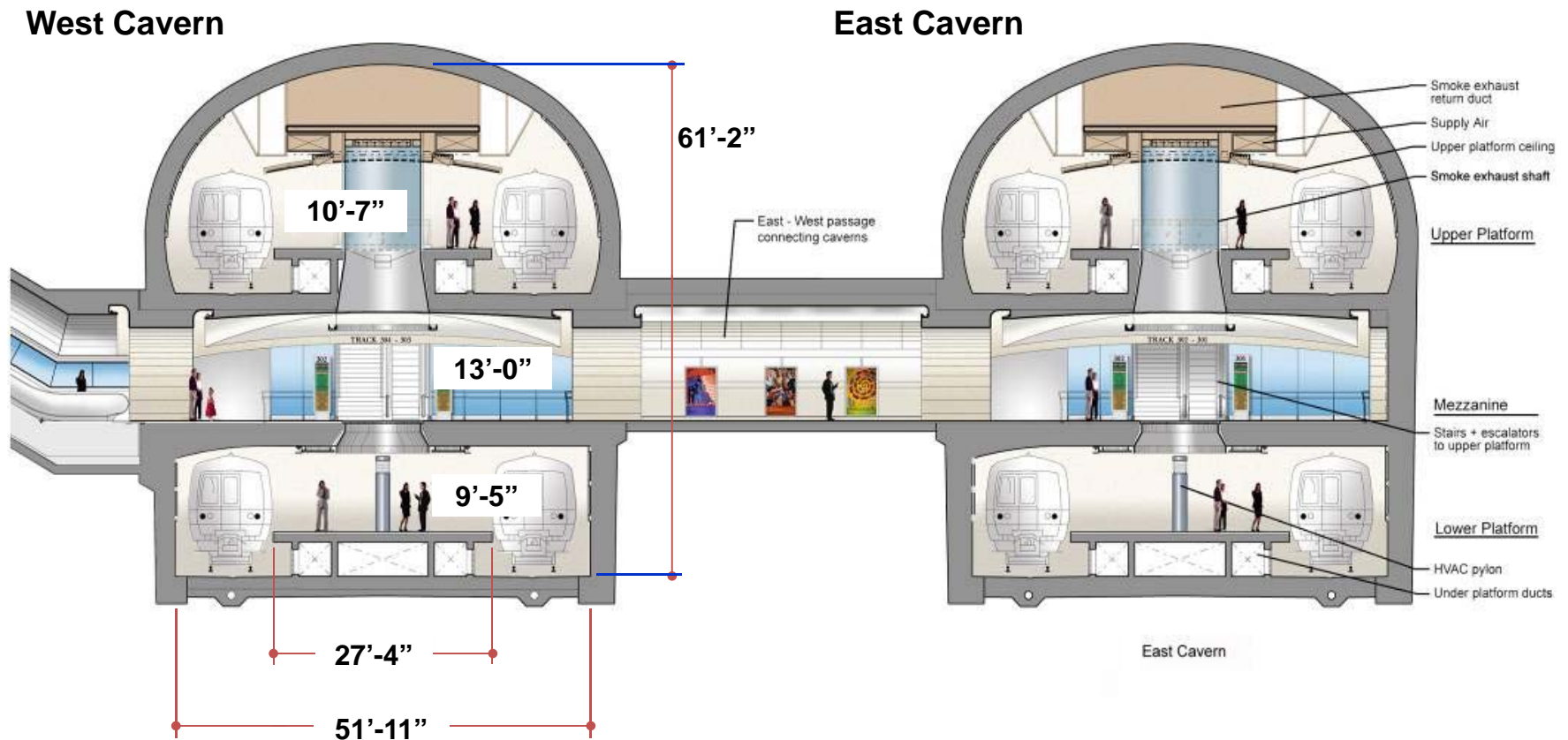


# Design & Program Development

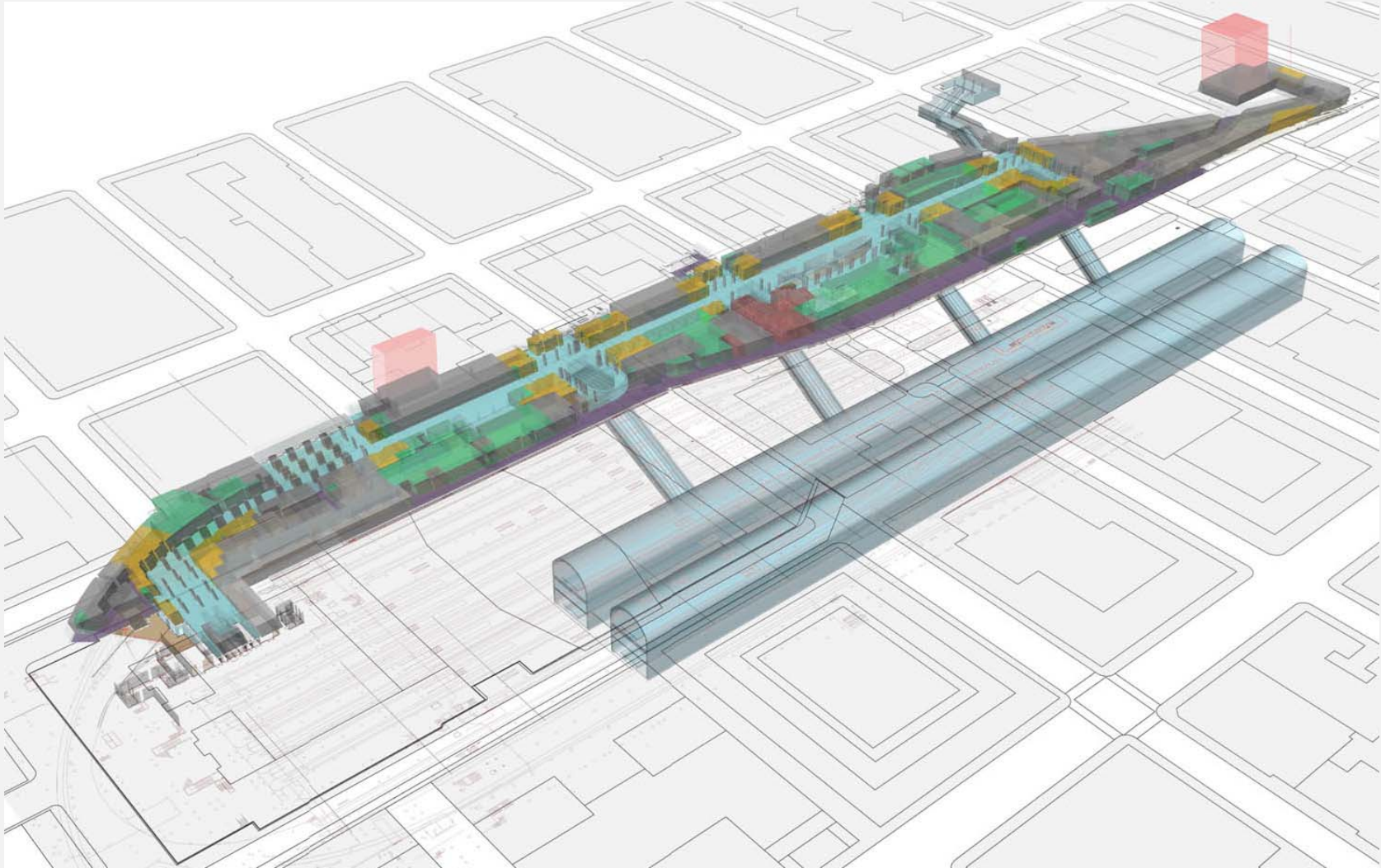




# Design & Program Development



# Design & Program Development



# Construction Phase Services

- Shop drawings & RFIs
- Change Process Support
- Contract Interface Coordination
- End-User and Stakeholder Engagement





# Construction Phase Services

- Change Process Support
  - Wireless/Wi-Fi Service
  - Digital Advertising



# Wireless / Wi-Fi Service



# Commercial Programming



Digital Media Platforms



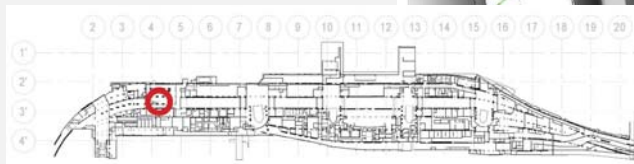
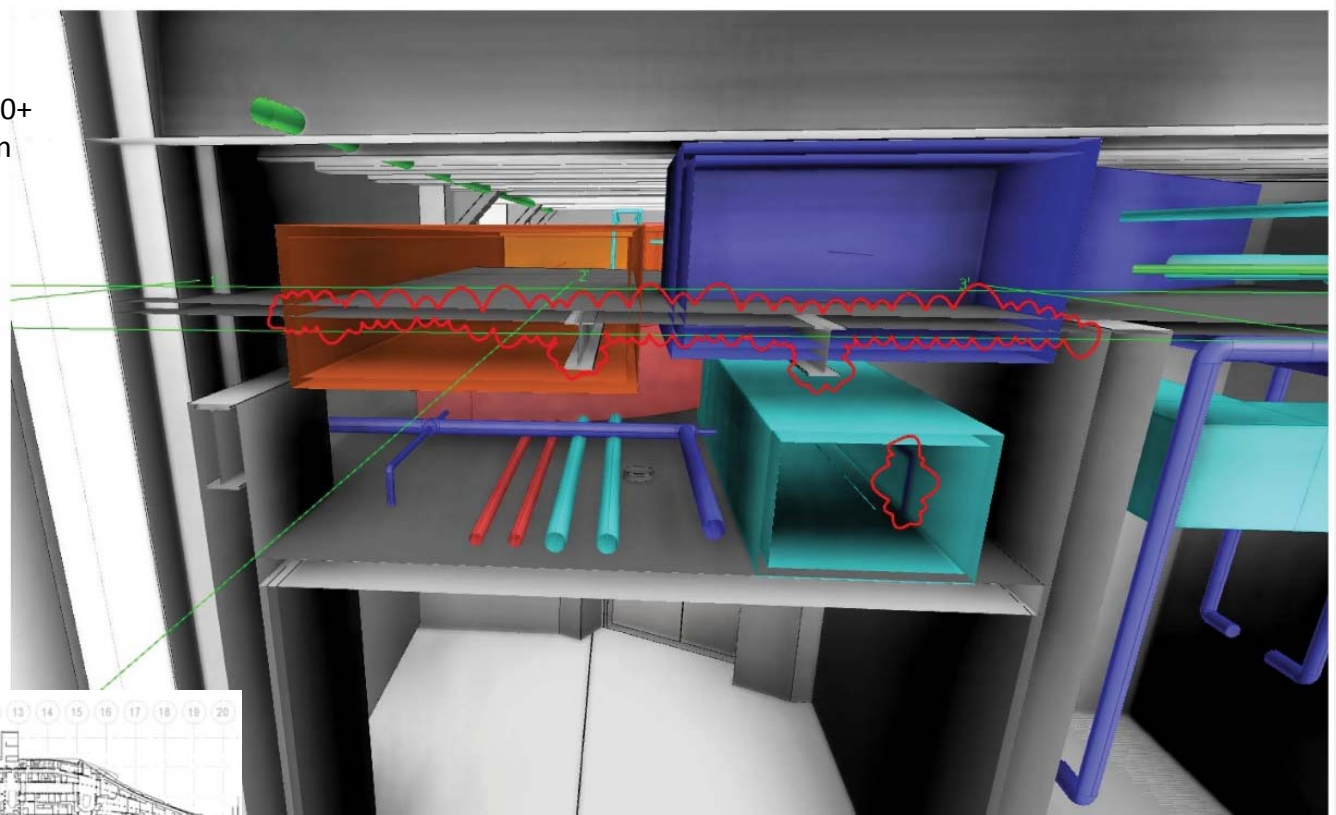
Wellway Digital Conduits



# Construction Phase Services

- Contract interface coordination

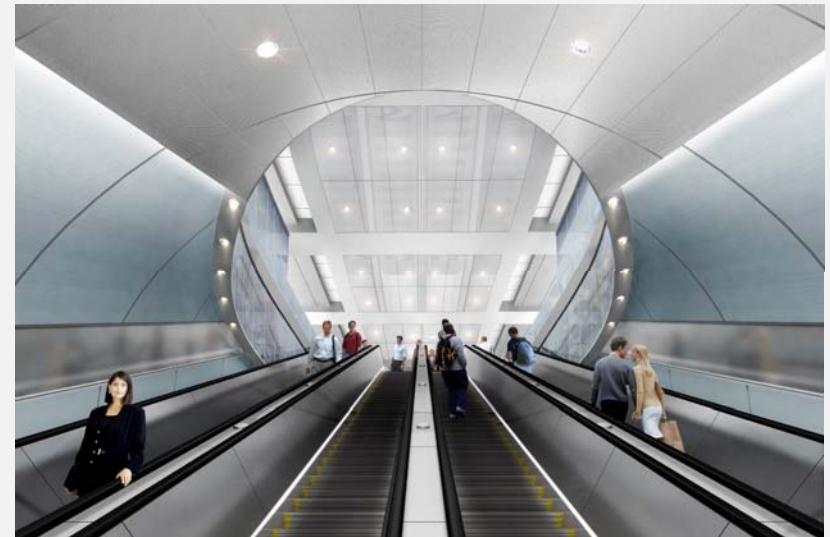
Clash detection identified 400+ conflicts prior to construction



**Issues:** Insufficient space for ducts due to position of metal decking and steel beams

# Construction Phase Services

- End-User and Stakeholder Engagement
  - Liaison to end-user
  - Ensure continuity
  - Communicator



# Expanded Project Team Role

- Program Executive





# Expanded Project Team Role

- Construction Manager



# Expanded Project Team Role

- Project Engineer/Architect





# Expanded Project Team Role

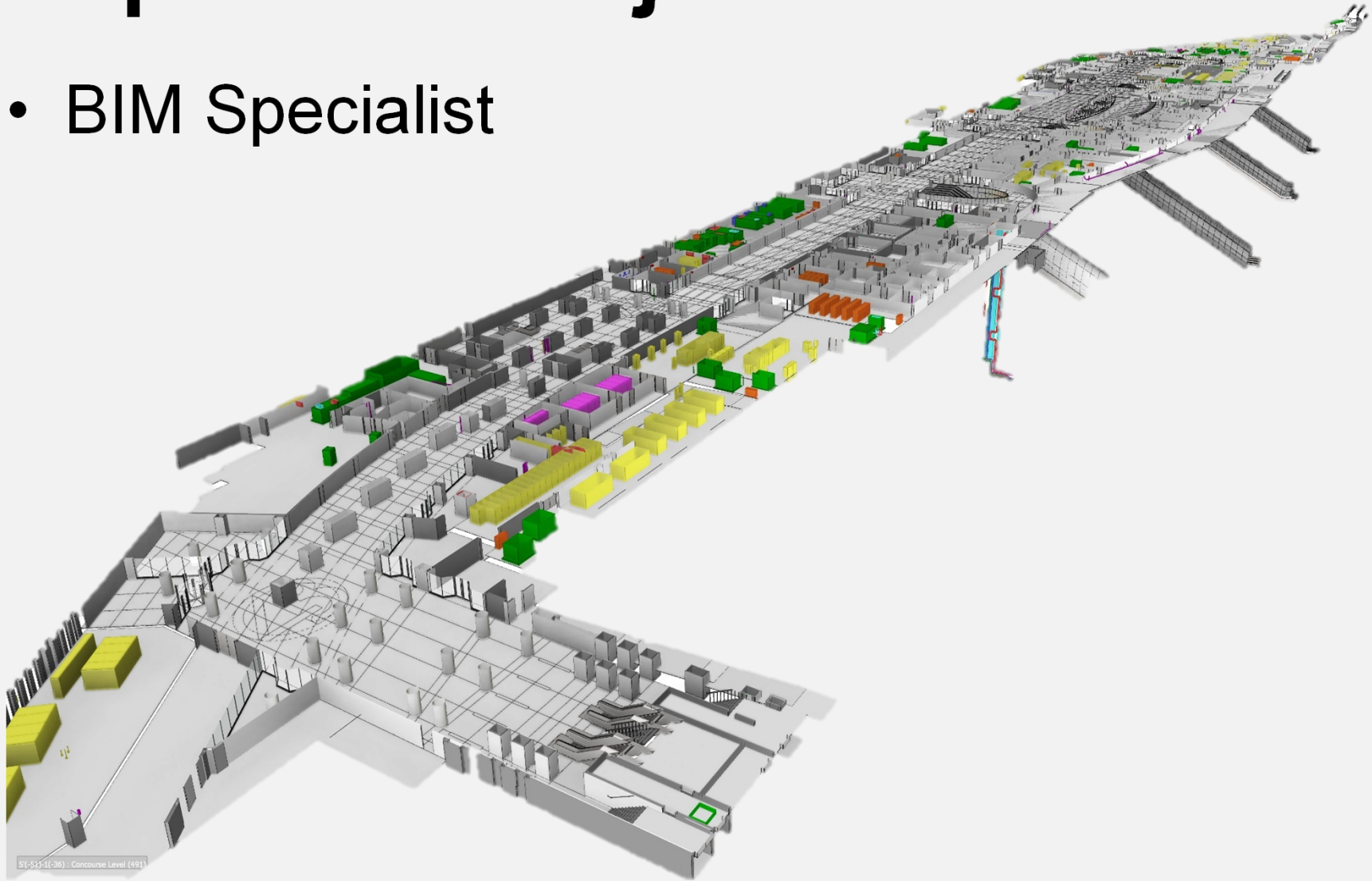
- Inspector





# Expanded Project Team Role

- BIM Specialist



# Code Compliance

- Code Enforcement Official
- Code Enforcement Specialist

# LESSONS LEARNED

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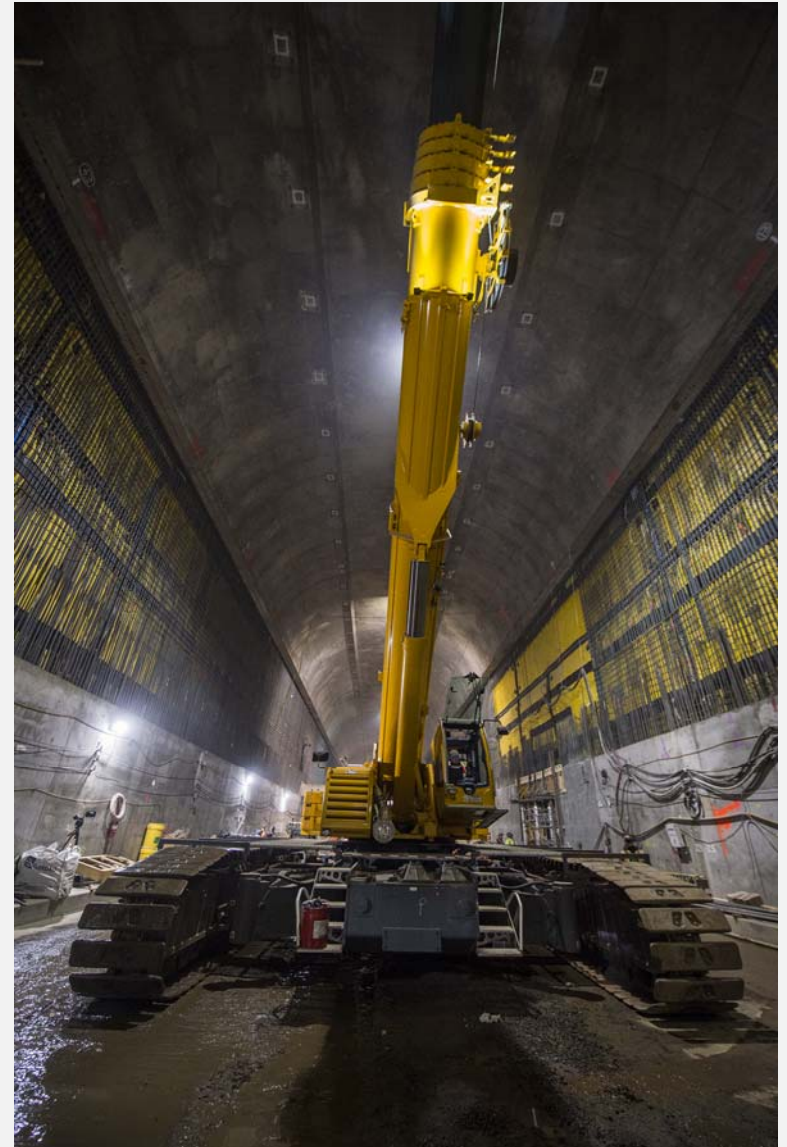
# Lessons Learned

- Relationship management during the entire project life-cycle
  - Staff turnover is more likely
  - Standard are more likely updated
  - Technology advances



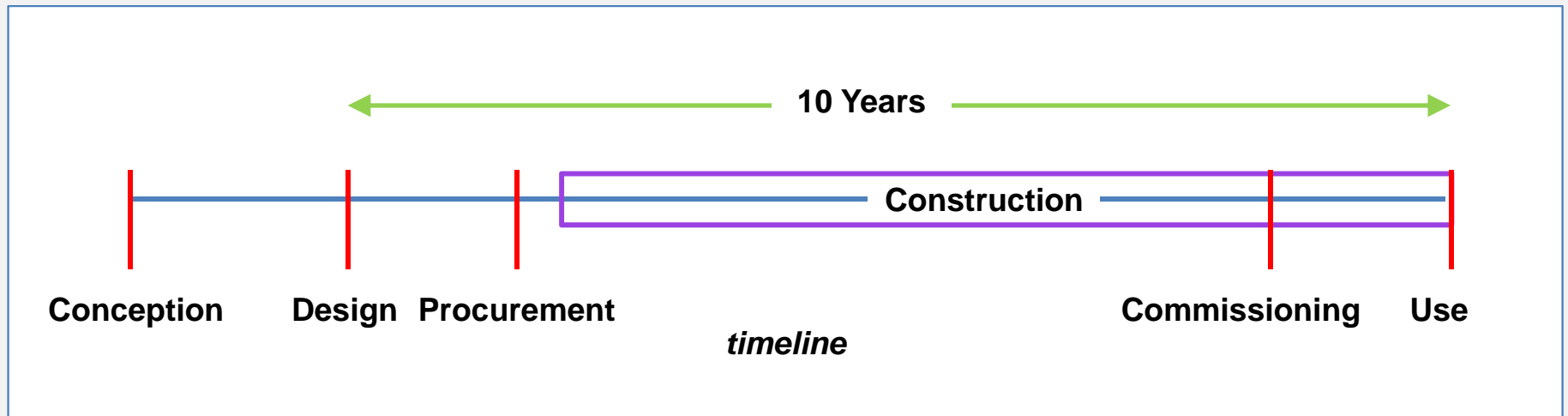
# Lessons Learned

- Contract Packaging Plan
  - Balance Integration/coordination
  - Scope/size for market capability
  - Use contract options
  - Have an “on-call” capability



# Lessons Learned

- Obsolescence Specifications





# Lessons Learned

- Interim Maintenance Requirements



# Lessons Learned

- Post-Occupancy Follow-up



# What do you see as the role of architects in transportation infrastructure projects?

(Multiple choice, with more than one answer allowed)

A

Advising the civil and transportation engineering teams on station issues

D

Strengthening communities socially and economically through equitable design

B

Facilitating the dialog during public outreach and agency approvals

E

Advocating for sustainable design

C

Promoting universal design

F

Creating legacy designs / public landmarks

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# How can architects influence transportation planning to make stronger communities?

(Multiple choice, with more than one answer allowed)

- A** Site selection review
- B** Providing opportunities for local workforce or business participation in design and construction
- C** Advocating for local workforce/business participation in ongoing site activities (e.g., concessions or mixed-use activities on site)
- D** Universal design
- E** Personal and property security
- F** Amenities
- G** Restricting and concealing parking
- H** Sustainable design

# How do public/private partnerships influence the process and outcomes of transportation projects?

(Multiple choice, with more than one answer allowed)



They improve the process / they impede the process



Organization's mission is upheld as would be for public projects / is worse



Design quality is the same or better than public projects / design quality is worse



Improved or stable public perception of organization / lowered public perceptions



During planning and design, public satisfaction is the same or better than public projects / is worse



Not applicable



Cost is same or better than public projects / is worse

# How do you influence the inclusion of users with differing abilities (disabilities) into transportation planning to create a more universal design?

(Multiple choice, with more than one answer allowed)

A

Set universal design standards via code; no other influence

D

Include focus and stakeholder groups and/or public workshops

B

Stipulate as part of design/construction criteria

E

Include individuals with differing abilities/disabilities on planning, design and/or construction teams

C

Peer or standalone review for universal design

F

NA – do not include



# What role do architects play in the vision and incorporation of public art in transportation?

(Multiple choice, with more than one answer allowed)



Added as a final task at end of design



Allocate a set budget for public art for sustainable design



Set design criteria during planning



Hold public workshops, focus and/or stakeholder groups to elicit input



Include at the RFP stage



Partner with local community and/or nonprofits



Include artists on design teams from outset



Seek donations or other funding for its incorporation



NA - do not include

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