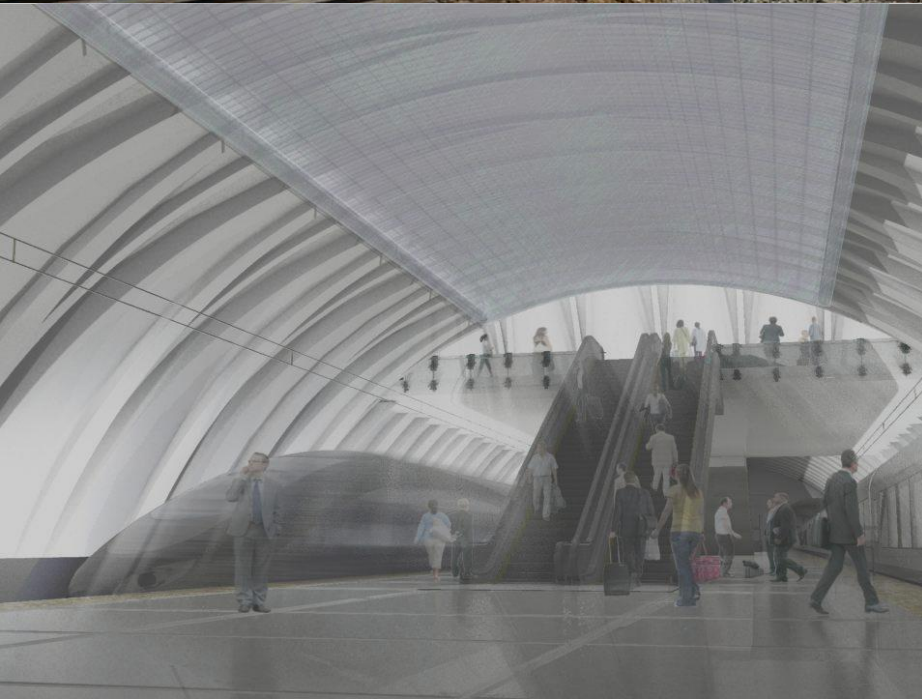




# Expanding Capacity for the Northeast Corridor The Gateway Program



Petra Todorovich  
Messick

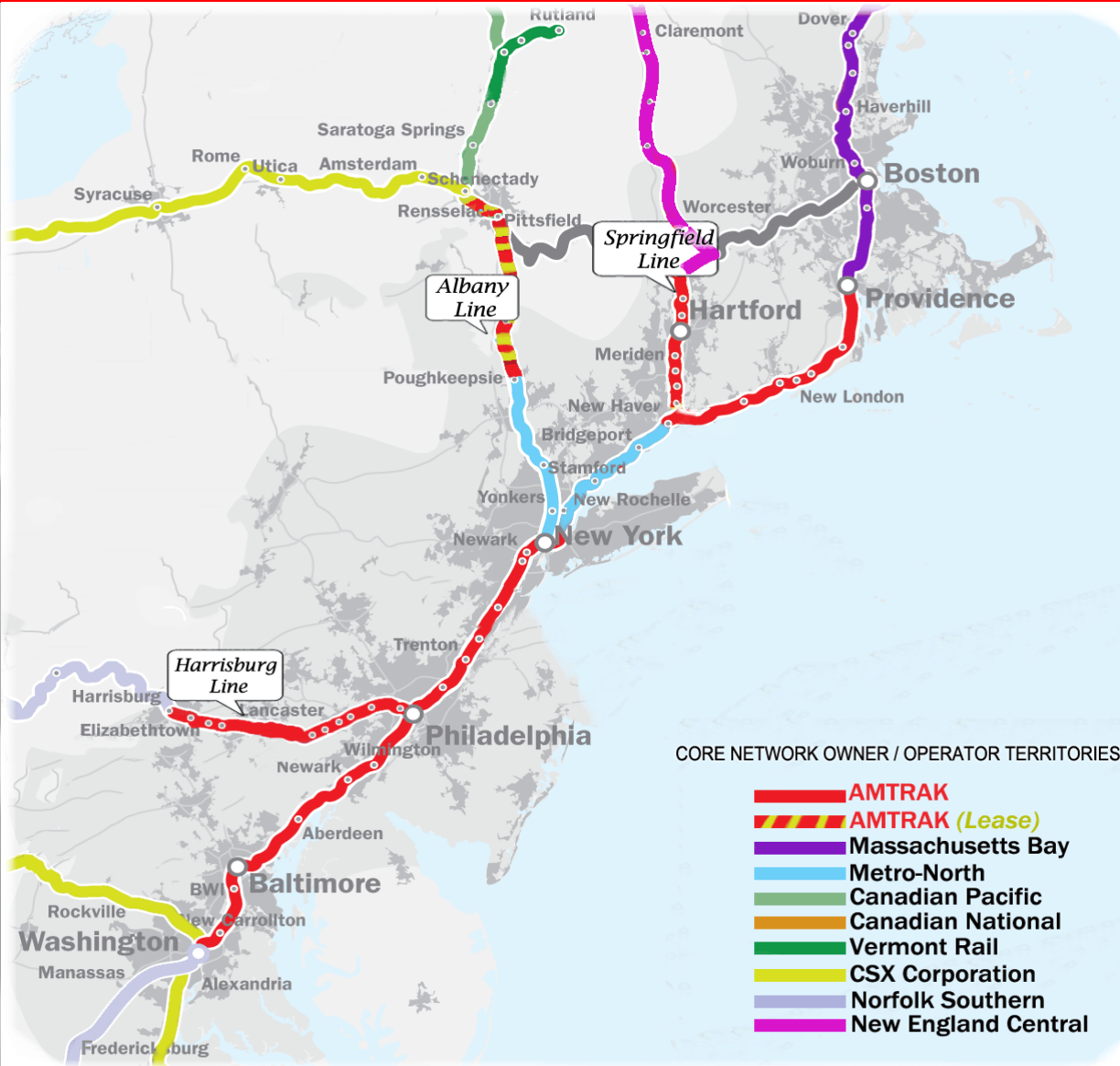
March 4, 2013

Raritan Valley Rail  
Coalition

Somerville, NJ



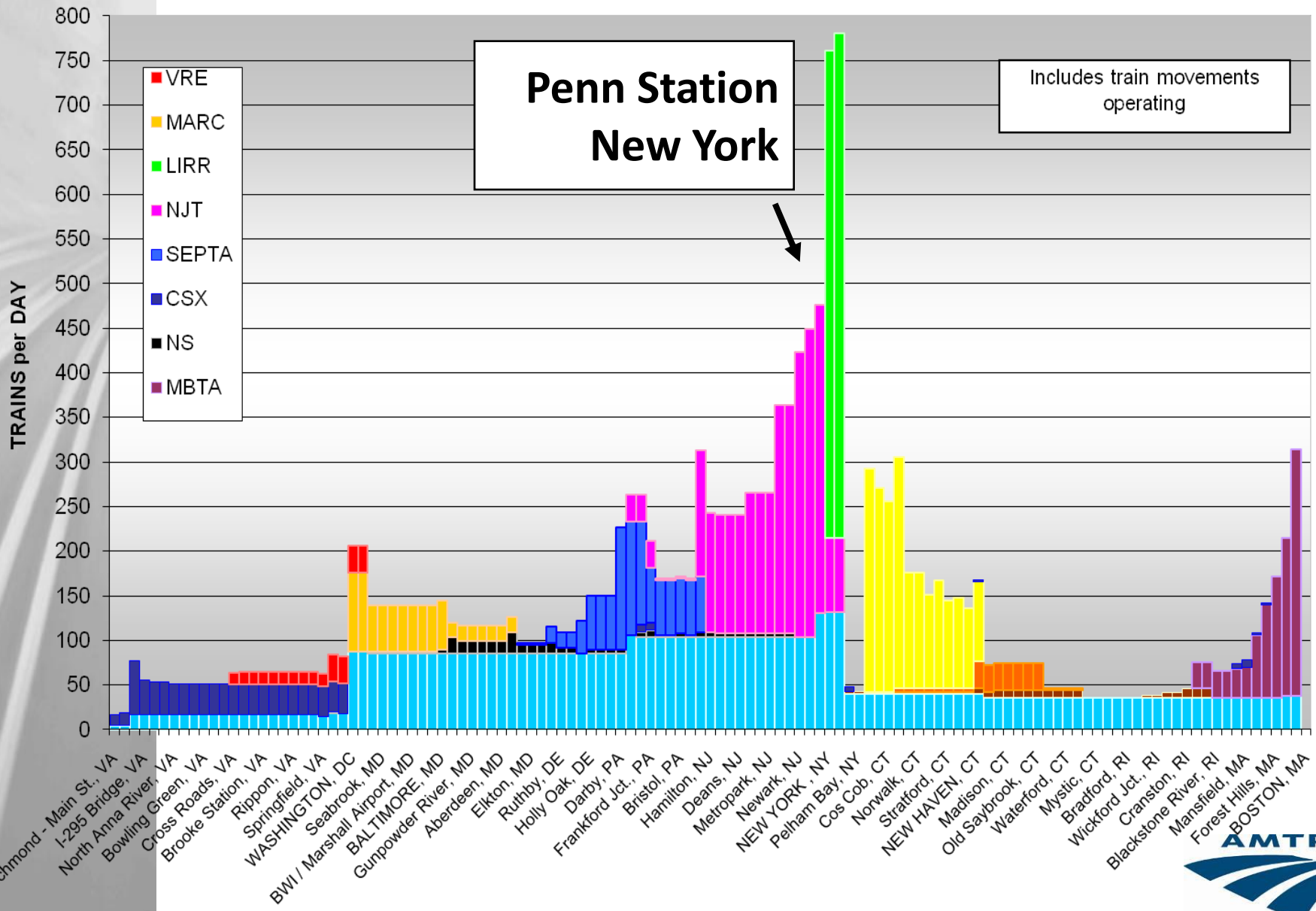
# The Northeast Corridor Mainline and Branches



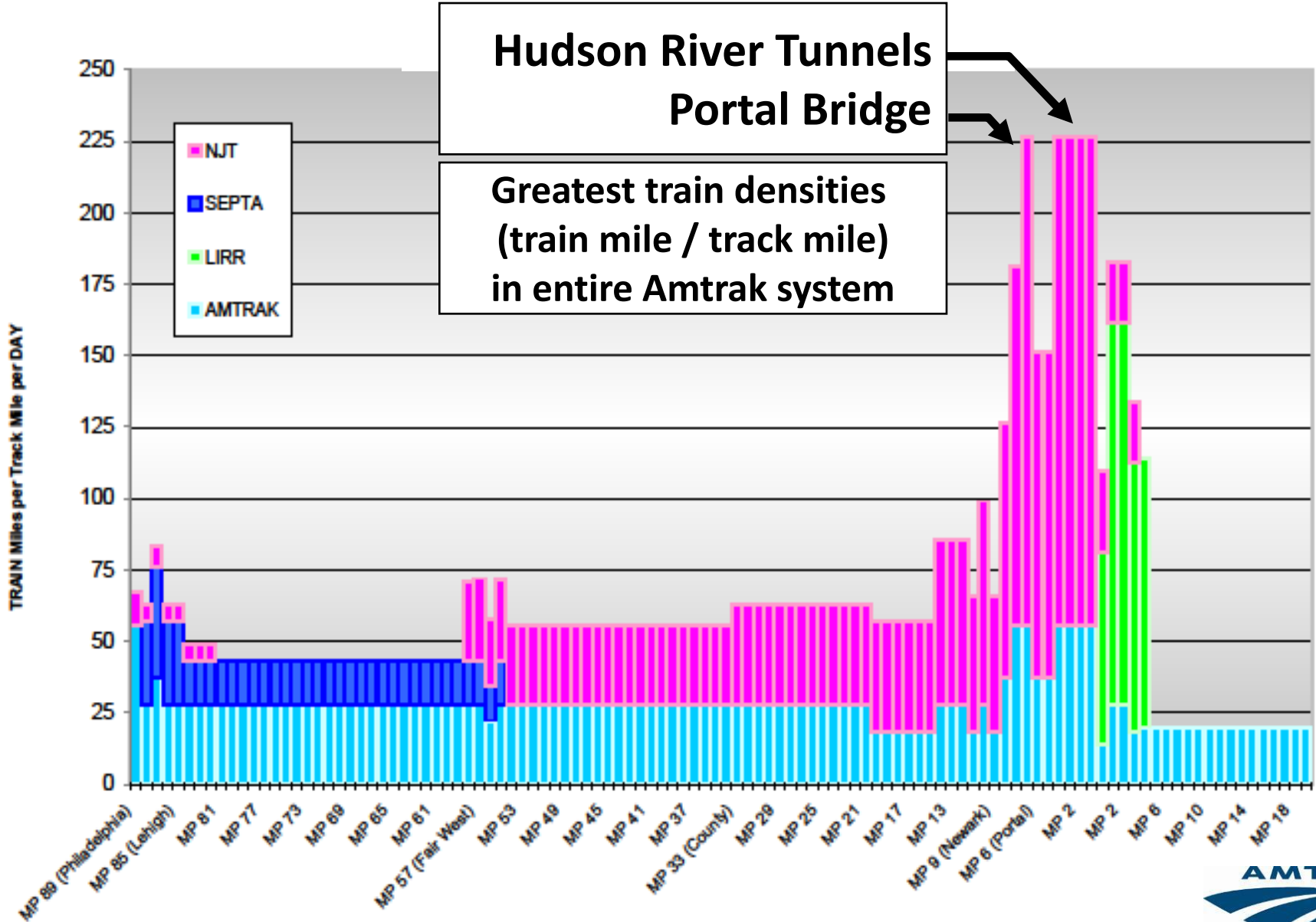
- 899 Route-miles
- 546 Miles Amtrak-owned
- 66% electrified
- 8 commuter operators
- Freight Service
- 2,200 daily train movements
- Amtrak *Acela Express, Regional, State-supported & Long-Distance*



# NEC - Weekday Train Movements - 2012



# Philadelphia to New Rochelle - Track Mile Density - 2012



# Capacity: NEC Growth Relies on Added Trans-Hudson Capacity

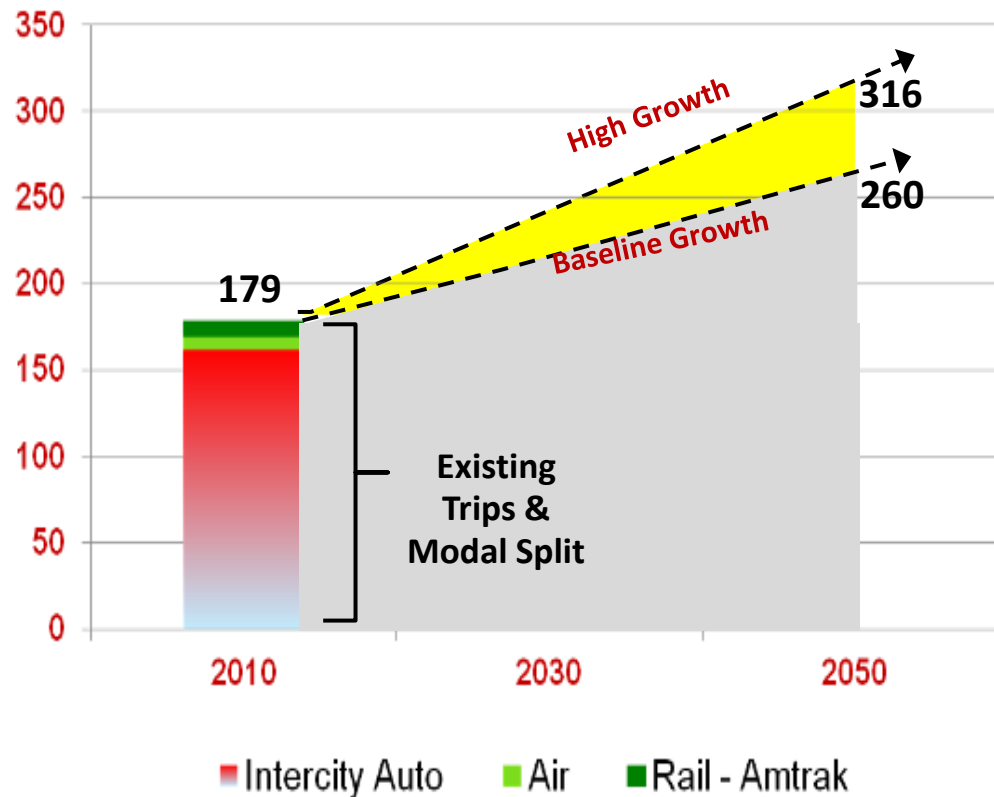
**Substantial projected growth in intercity travel in the NEC**

- Baseline: +45%
- High growth +76%

**Other NEC modes have limited ability to add significant capacity**

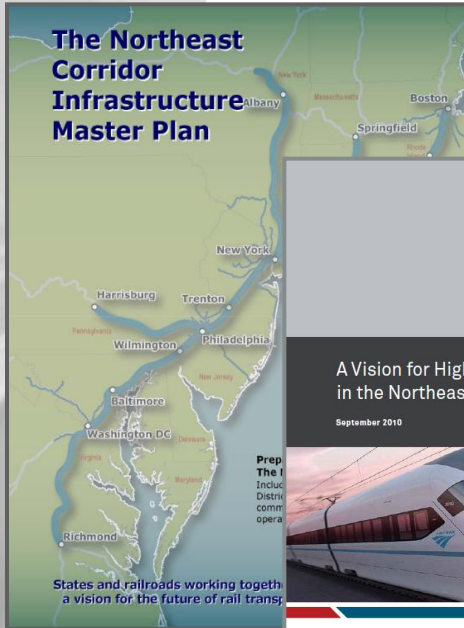
**NEC can't add more trains because of limited tunnel and line-haul capacity into NYC**

**Northeast Corridor Travel Demand  
(Millions of Annual Intercity Trips)**

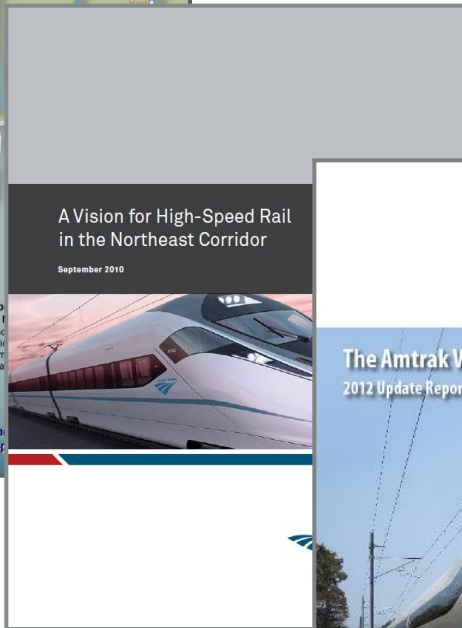




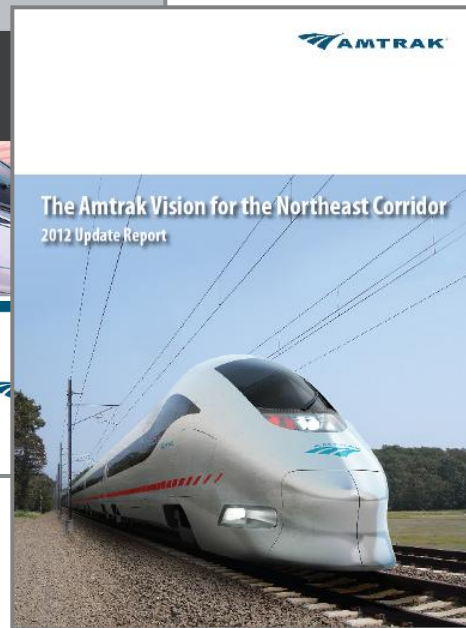
# Status of NEC Planning Efforts for Growth



2010



2010

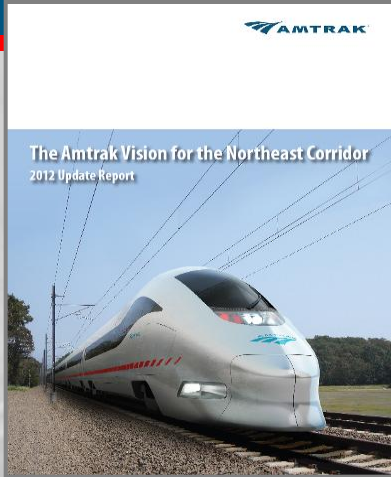


2012

- These plans are now inputs into the FRA-led “NEC FUTURE” process
- Advancing Major NEC improvements require pursuing two simultaneous paths:
  - Incremental NEC Improvements permissible under 1978 PEIS
  - Major improvements - “NEC FUTURE” program



# Implementation Phasing Strategy



**NextGen HSR: NYC to BOS**

**NextGen HSR: NYC to WAS**

**NextGen  
HSR  
(2025-2040)**



**NEC 160 mph MAS: NYC to WAS**

**NEC Gateway: Newark to NYC**

**High Speed Equipment Purchase**

**NJ High Speed Improvement Program**

**NEC-UP  
(Upgrade Program)  
(2015-2025)**



# Amtrak's Program for NEC Improvement and Expansion

*Two progressive and overlapping programs:*

1. **NEC Upgrade Program (“Stair-Step Plan” 2012-2025) - Advance projects under current PEIS that improve HSR and other services:**
  - Create additional capacity
  - Raise top speeds and reduce trip times
  - Increase Trans-Hudson capacity
  - Achieve a State of Good Repair and Advance Master Plan improvements





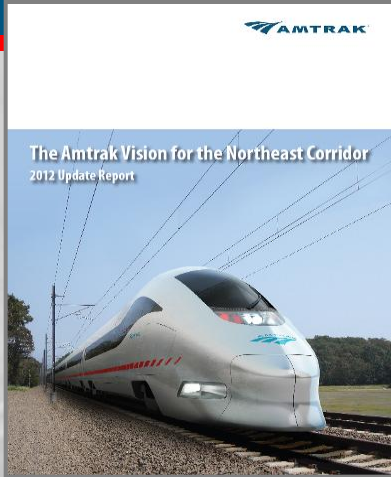
# Amtrak's Program for NEC Improvement and Expansion

## 2. Next Generation High-Speed Rail Program ("NextGen HSR") – Develop and advance NextGen HSR services as part of an integrated NEC network

- Phased implementation of new, mostly dedicated two-track alignment for high-capacity, high-speed services
- Separate high speed trains from regional and commuter trains, creating additional capacity for all services and improved reliability and efficiency
- New station development
- Integration with existing network to maximize network growth



# Advancing a Bold Future: NextGen HSR



- **Augment the existing NEC with a new high-capacity, high-speed rail system:**
  - Dedicated 2 - track alignment;
  - 220 mph top speeds
  - up to 12 HSR trains an hour per direction
  - 40% - 60% travel-time reductions in key markets
- **Sufficient growth capacity for the century ahead:**
  - Allow HSR to carry larger portion of Northeast's intercity travel market
- **Radically improve trip times and frequencies:**
  - Reshape geography, induces demand, and create economic gains for the whole region
- **Shift high speed trains to mostly dedicated infrastructure:**
  - Create additional capacity on the existing NEC and improve reliability and performance for all users.



# NEC NextGen HSR Vision – A High Capacity & Performance Railway



## Higher Frequency

2040 Service Departures (Each Direction)

	Current	Next-Gen HSR
Hourly	1	3-4
Daily	10-15	53-73

## Higher Average Speeds

2040 Average Speeds (Super Express)

	Current	Next-Gen HSR
NYC - BOS	65 mph	148 mph
NYC - DC	86 mph	137 mph



# NEC NextGen High-Speed Rail – Conceptual Alignment







***Advancing the Gateway  
Program***



# Gateway Integrated Program Structure

- **Market Demand**
  - **Intercity (HSR / Conventional)**
  - **Commuter (LIRR, NJT, MN)**
- **Service Plan Development**
- **Station Plan Development**
  - **Moynihan Station**
  - **Penn Station expansion**
- **Engineering Feasibility Analysis**
  - **Manhattan sections (2010 -2011)**
  - **New Jersey sections (2012 -2013)**
  - **System Design Study (2013)**



# Penn Station Newark to Penn / Moynihan Station New York



# Gateway Program Principles

- **Improve Existing Operations**
  - **Reliability / Redundancy**
  - **Maintainability**
- **Expand Capacity**
  - **Intercity / High Speed Rail**
  - **Commuter (all operators)**
- **Rebuild Infrastructure**
  - **Provide enhanced storm protection**
  - **Bring to State of Good Repair**



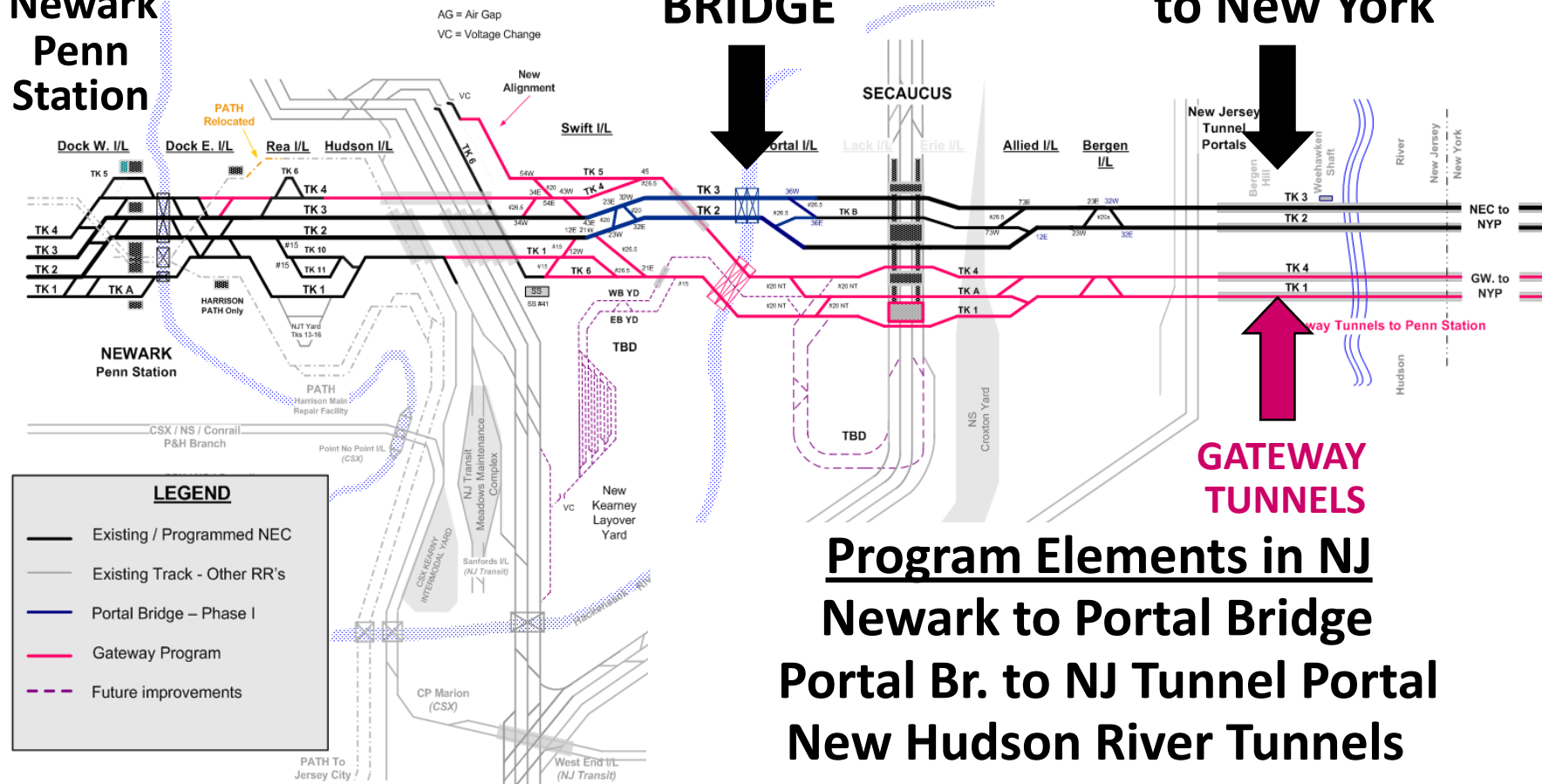
# Gateway – New Jersey Track Configuration (Illustrative)

← 2 Miles →      ← 3 Miles →      ← 3 Miles →

**PORTAL  
BRIDGE**

**EXISTING TUNNELS  
to New York**

**Newark  
Penn  
Station**



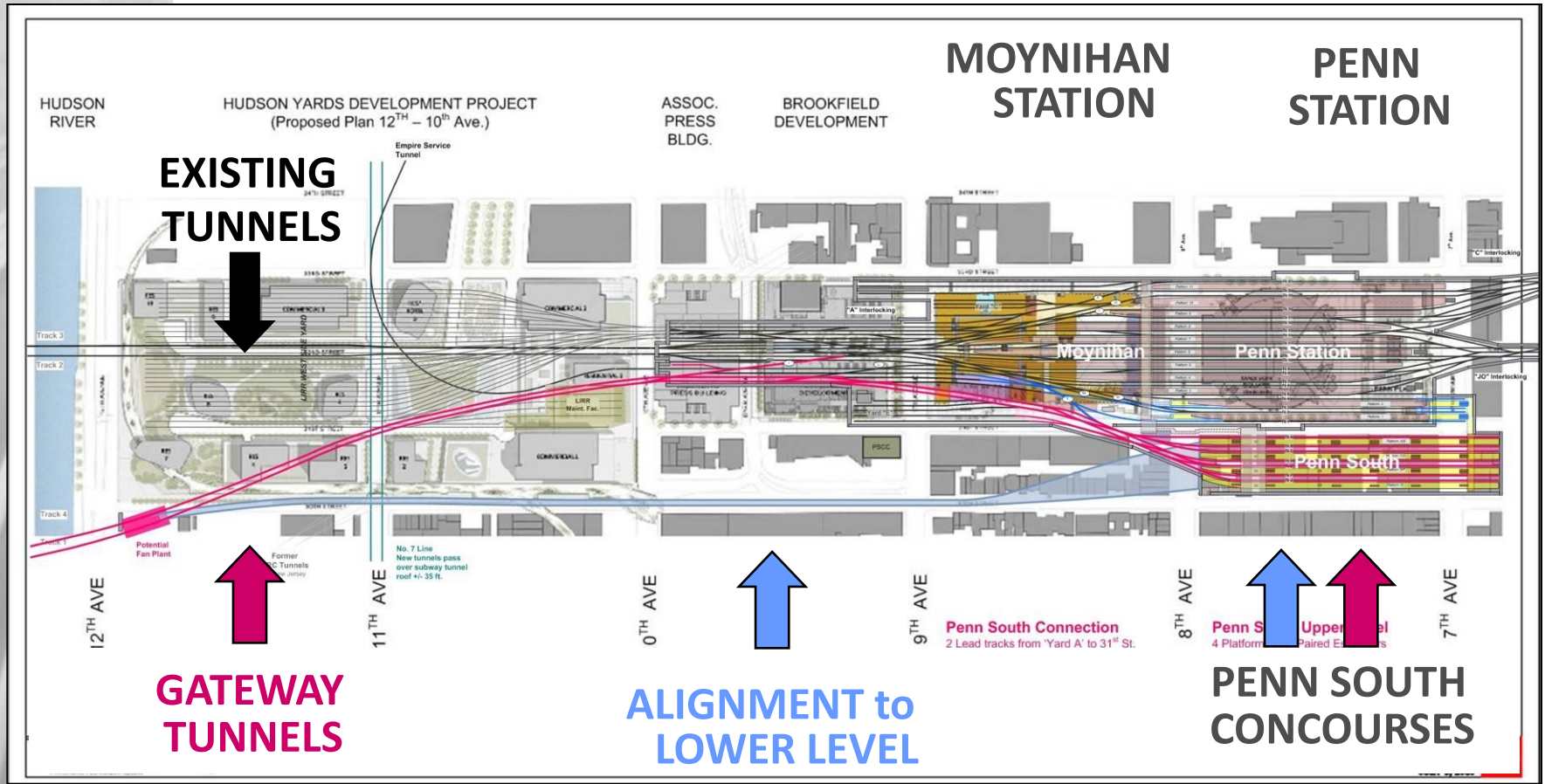
**Program Elements in NJ**  
**Newark to Portal Bridge**  
**Portal Br. to NJ Tunnel Portal**  
**New Hudson River Tunnels**

**GATEWAY  
TUNNELS**



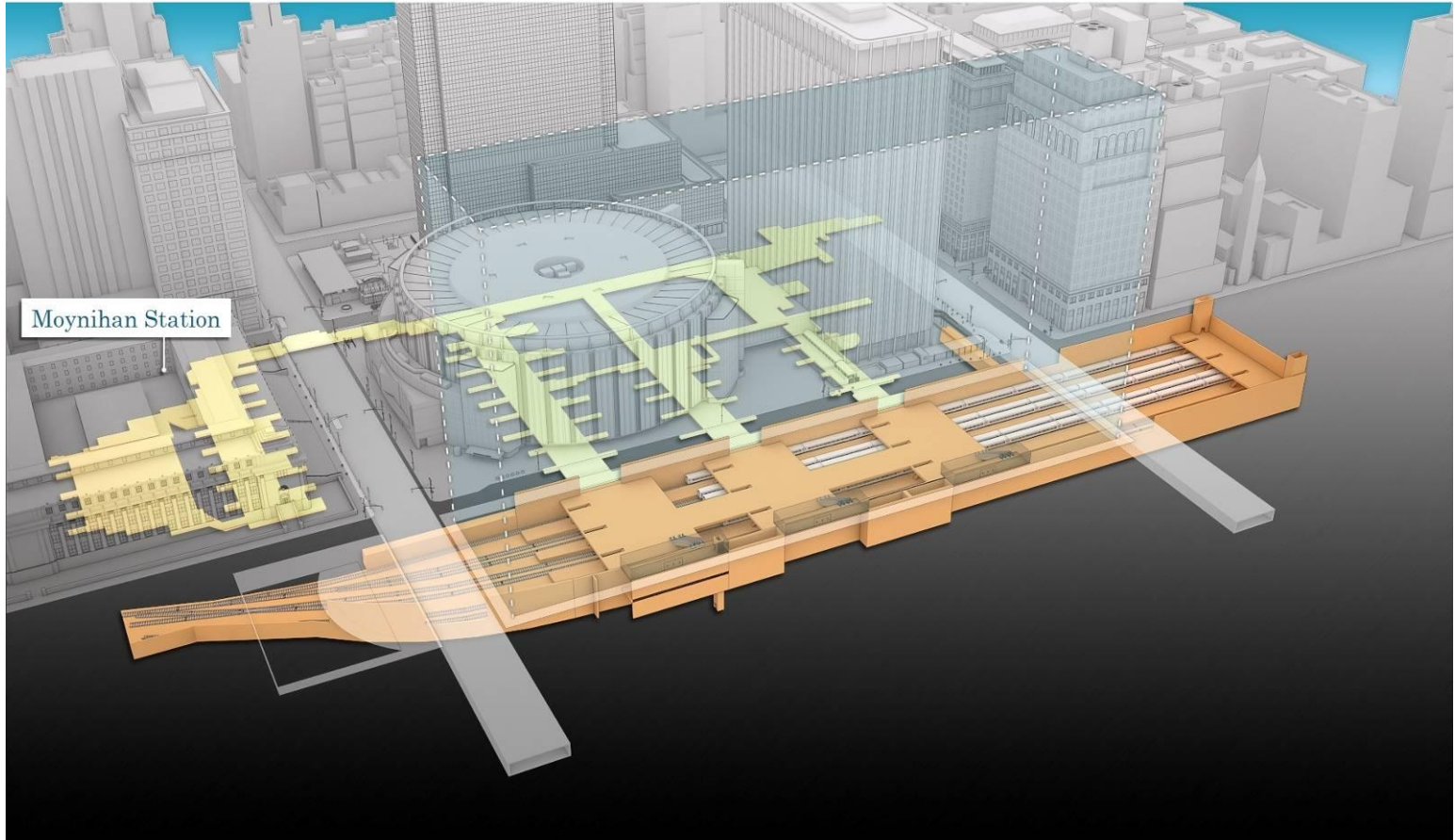
# Gateway Program – Manhattan Plan View

## Sketch Plan of Alignments to Penn Station and Penn South Concourses





# Gateway Program – Penn South Upper-Level Concourse



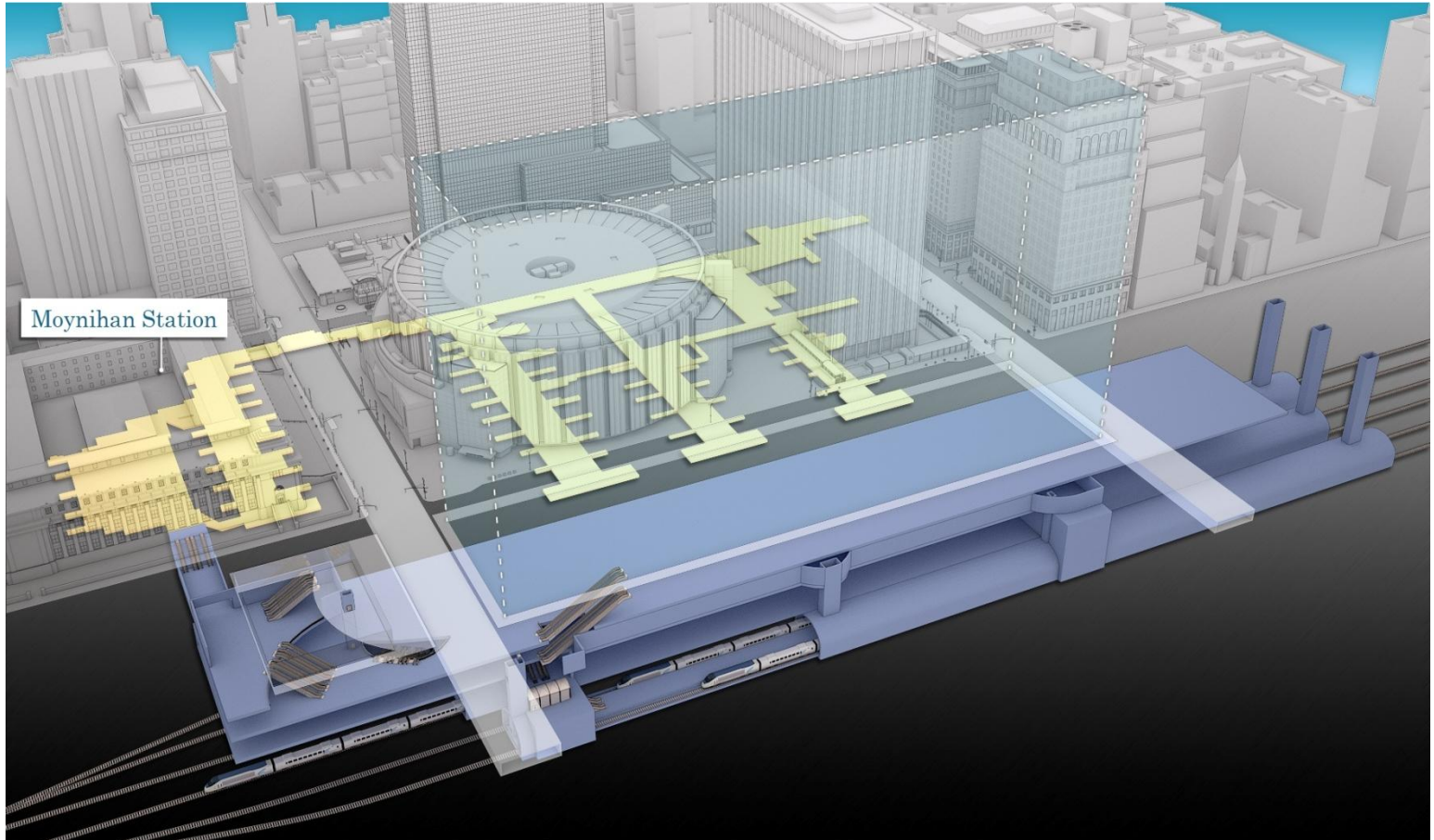
**PARSONS  
BRINCKERHOFF**

Integrated Commuter Station Concept

**AMTRAK**

**AMTRAK**

# Gateway Program – Penn South Lower-Level Concourse



**PARSONS  
BRINCKERHOFF**

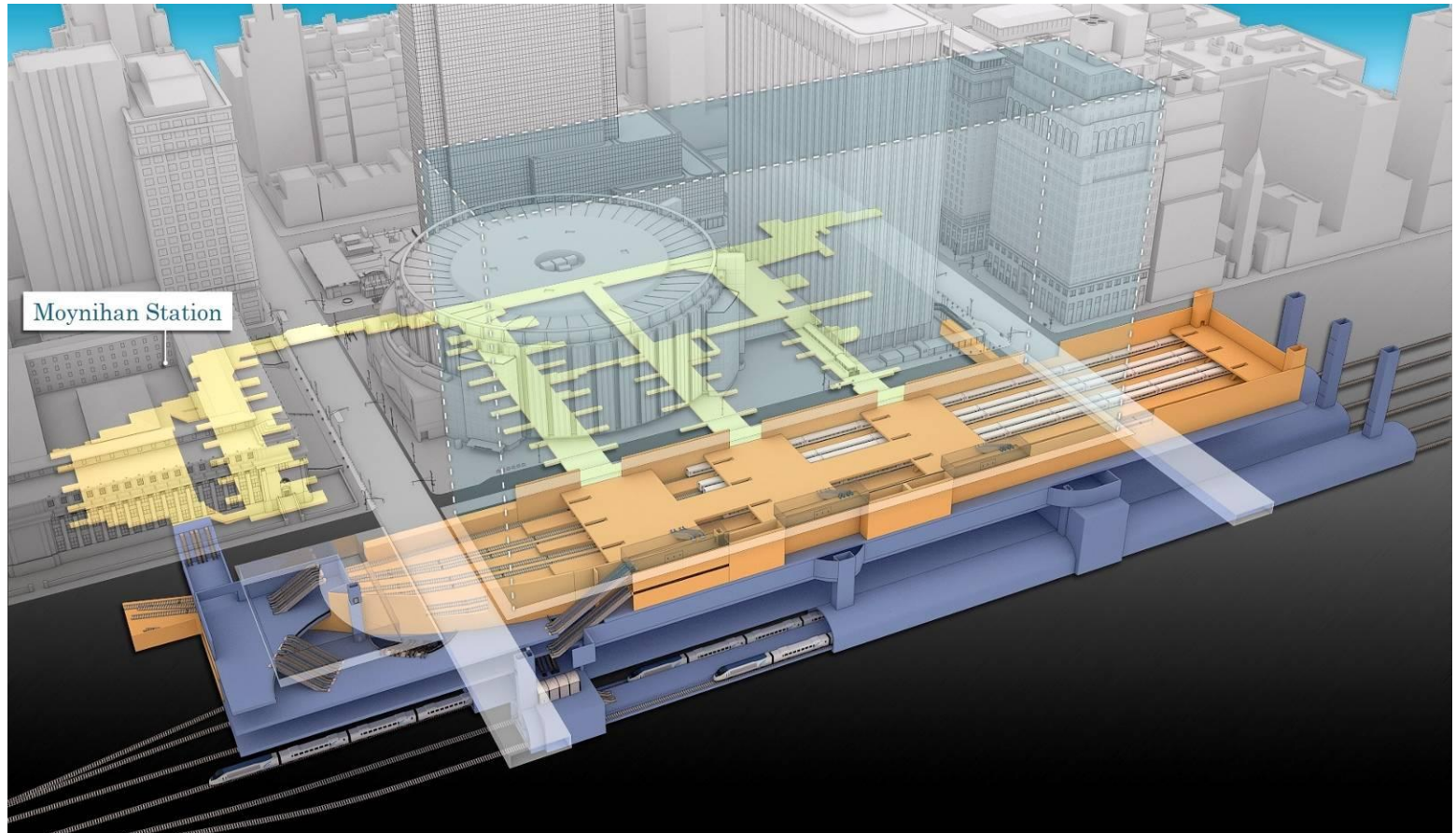
Integrated High Speed Rail Station Concept

**AMTRAK**

**AMTRAK**



# Gateway Program – Combined Concourses



**PARSONS  
BRINCKERHOFF**

Integrated High Speed Rail and  
Commuter Station Concept

**AMTRAK**

**AMTRAK**

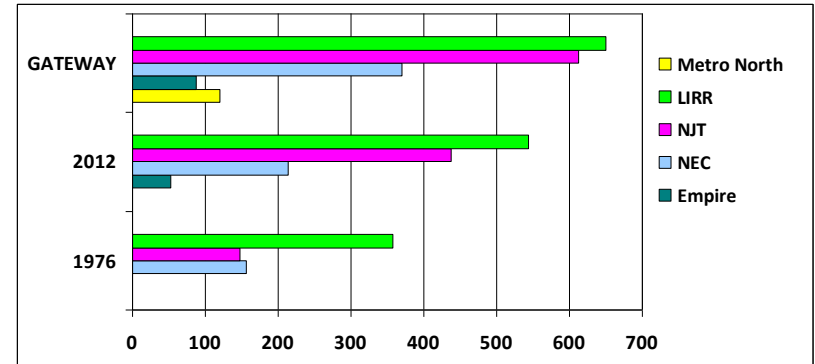
# Gateway Program Benefits (Intercity and Commuter)

## New Jersey

- 100% increase in line capacity
- 4 main tracks / new river crossings / Bergen Loop option
- Upgraded support systems (electric traction, signals)
- Rebuilt infrastructure (bridges)

## New York

- 50% increase in Penn Station / Moynihan Station capacity
- New commuter/HSR concourses
- Operational redundancy
- Commercial development
- Expansion of all services



## Trains Per Day: 1976, 2012, and with Gateway

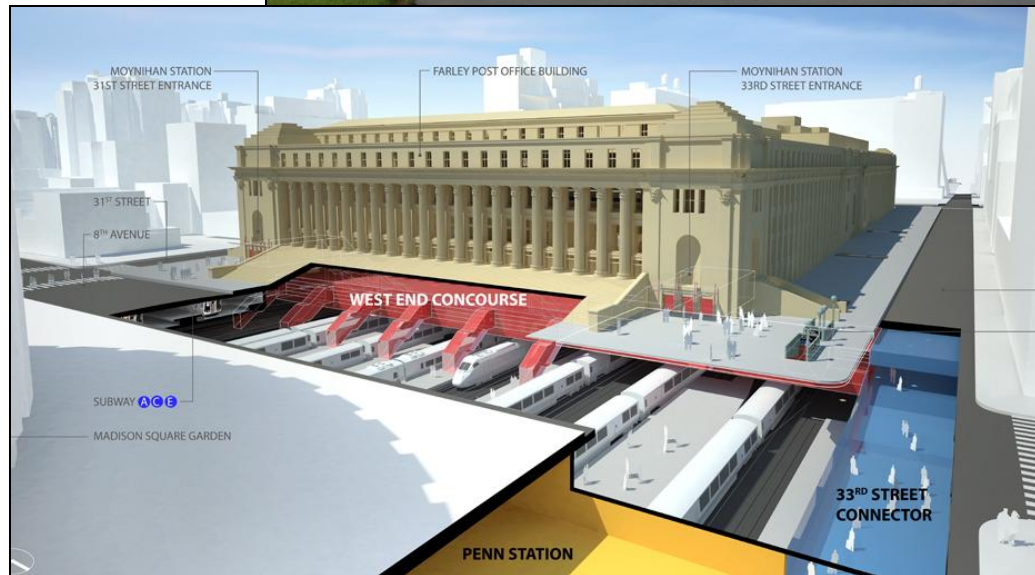
<b>GATEWAY</b>	<b>1,800 – 2,000</b>
<b>2012</b>	<b>1,200</b>
<b>1976</b>	<b>600</b>

Gateway Program Trains per Day totals and individual operators is Illustrative



# Gateway Program: Projects Underway

- Portal Bridge North final design
- \$900 million construction funding unidentified



- Moynihan Station
- Phase I \$268 million
- Under construction





***Why do we need the Gateway Program?***

# The Northeast Corridor is Reaching Capacity – And So Are Other Modes of Travel



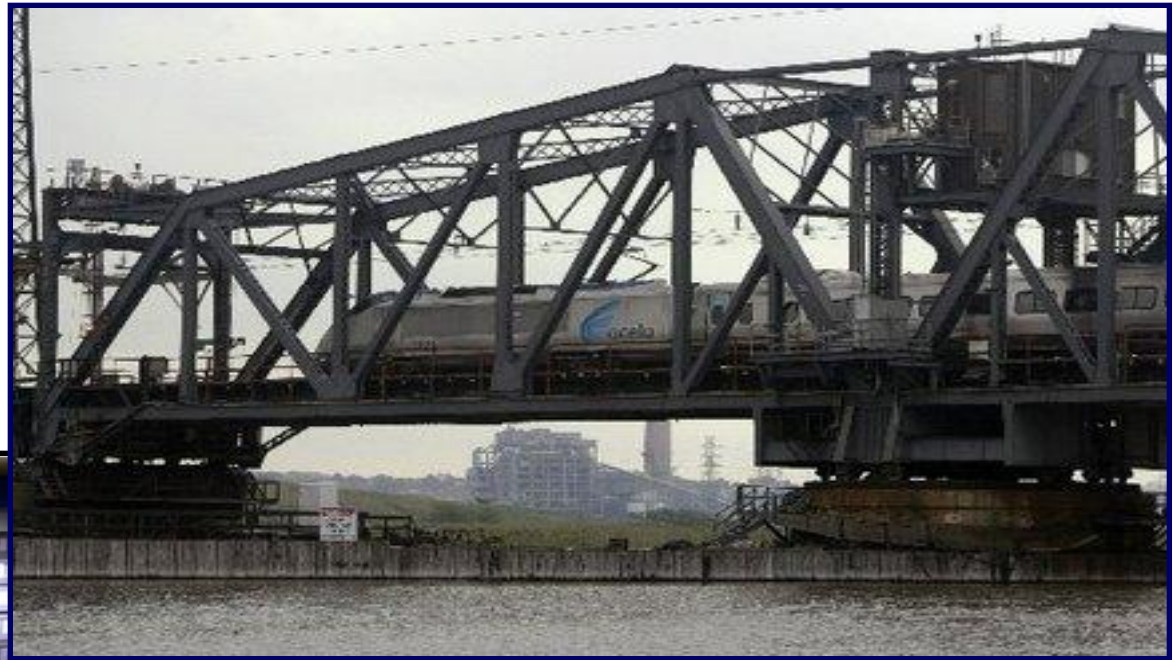
- NY Penn Station is the North America's busiest transportation facility and Amtrak's #1 Station
- Two of every three NEC Amtrak trips start/end in New York





# Replacing Obsolete Assets Supporting Today's Services

The Portal Bridge over the Hackensack River is over 100 years old.



Penn Station  
Overcrowding



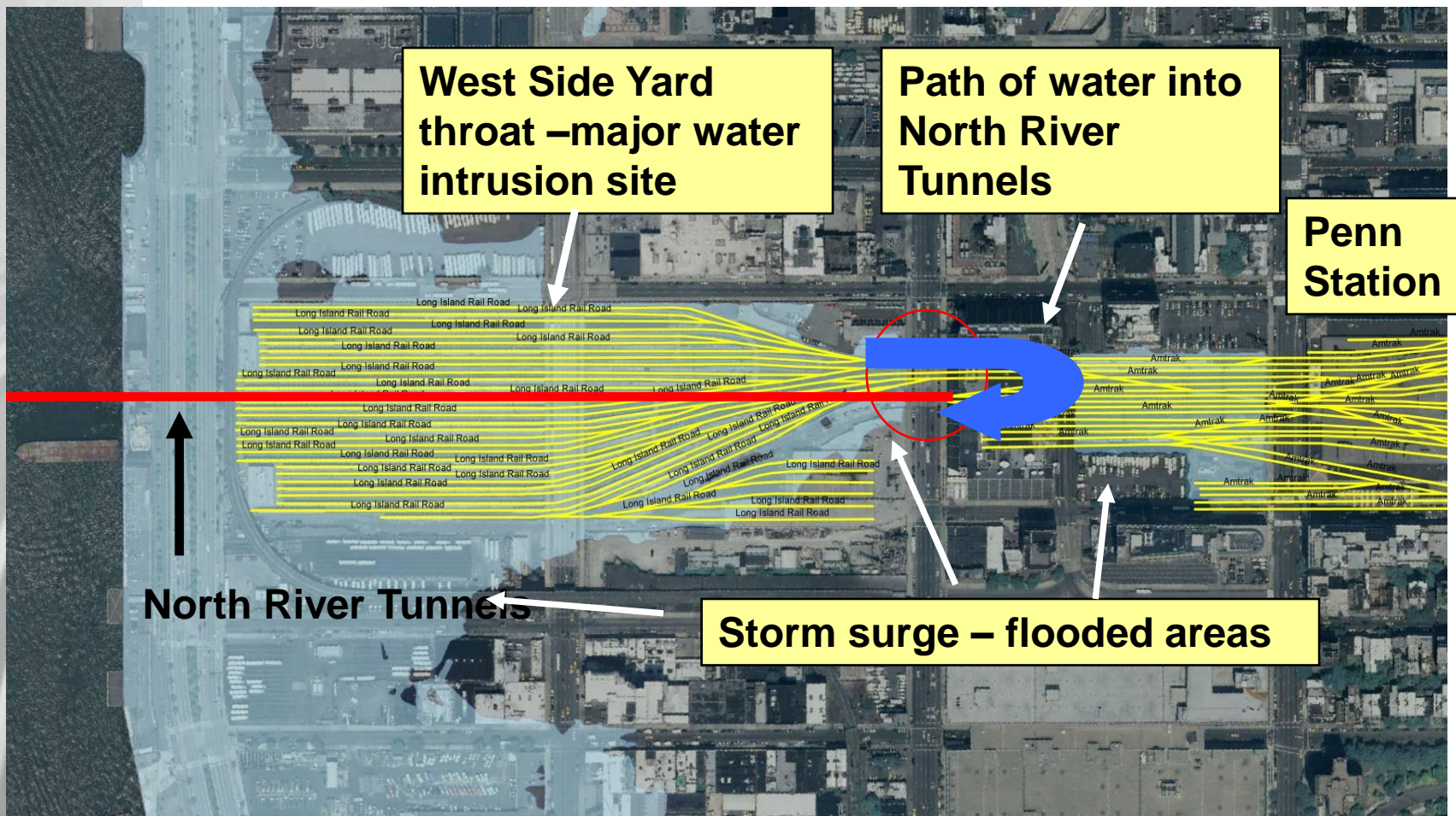
# Penn Station Under Water



- Hurricane Sandy flooded 4 of 6 river tunnels to Penn Station.
- Both traction power and signal systems severely damaged or destroyed
- Over 13.6 million gallons of water pumped out.
- Service disrupted for over 3 weeks.



# Redundancy: Existing Infrastructure is Vulnerable to Extreme Weather Events



- The Gateway tunnels would be built to standards that can better resist and recover from flooding.



# 100- Year Old Existing Tunnels



*The existing Hudson River tunnels were completed in 1910.*

- The Gateway Program is needed to shift traffic so the existing tunnels can be modernized and repaired.
- At present, weekend work will go on indefinitely, limiting the NEC to a one-track railroad.

# Now or Never: Construction Proceeding Rapidly at Manhattan's Hudson Yards



- It is essential that we begin construction this summer of an 800-ft tunnel segment to preserve **the last remaining alignment** to connect passenger trains directly to Penn Station.

# Hudson Yards Development in Gateway's Future Path

**LIRR West Side Yards Today**



Hudson Yards

Tomorrow





# Related Companies Hudson Yards Site Plan



**Western Yard – Phase II**

**Eastern Yard – Phase I**



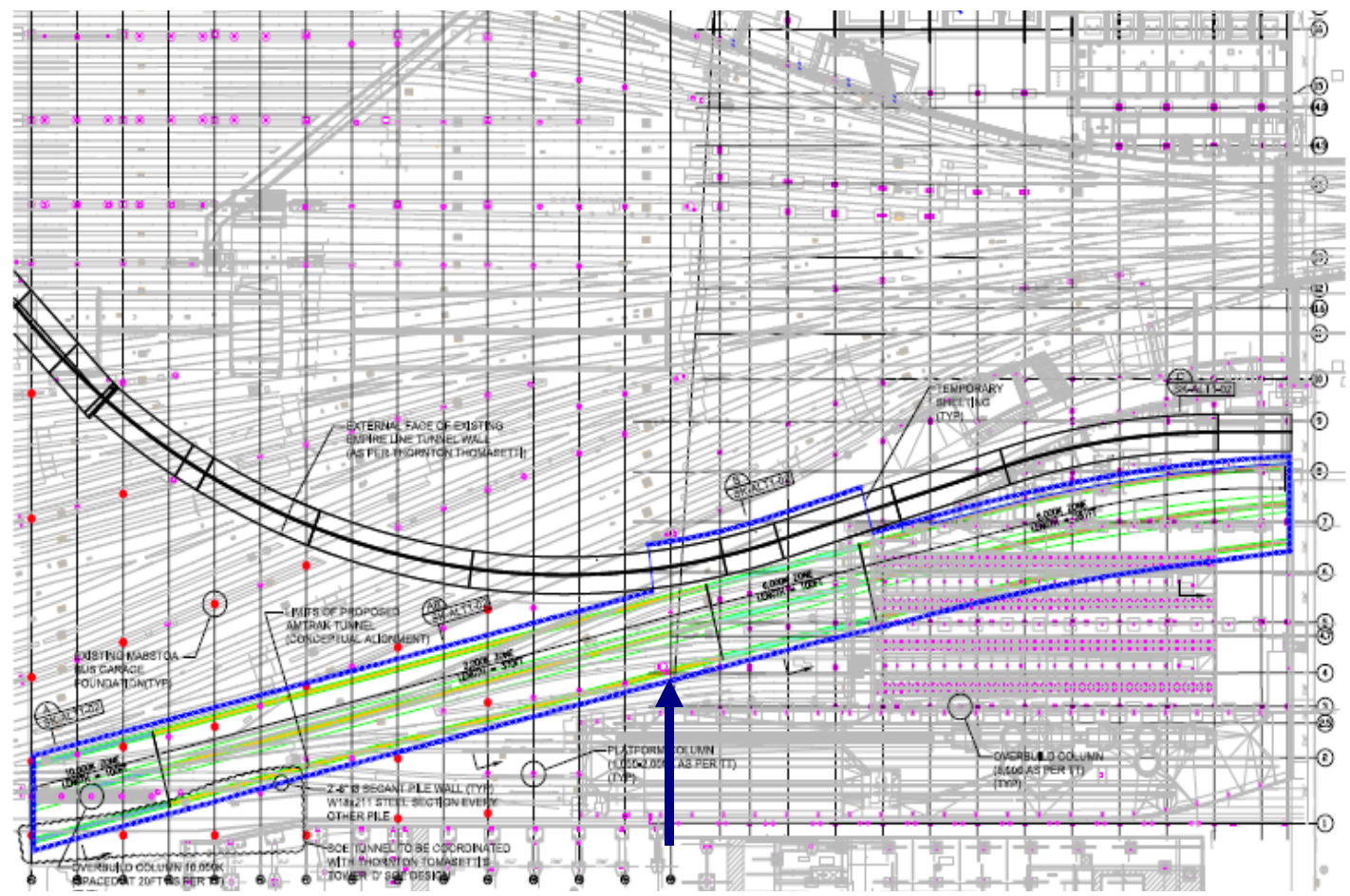


# Eastern Yard Site Plan – Street Level – Phase 1



# Eastern Yard Plan – Track Level – Including Gateway Tunnel Segment

11th Avenue 10th Avenue



## Gateway Tunnel Segment



# Gateway Program Hudson Yards – Next Steps



- **Amtrak hired design and environmental contractors in January 2013 to start tunnel segment design.**
- **Amtrak currently negotiating design/build agreement with Related's contractor.**
- **Construction to start in summer 2013.**
- **RFP for System Level design is out before pre-qualified bidders.**

**Thank you for your attention.**

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