PENN STATION TRANSFORMATION

New York Penn Station Working Advisory Group (SWAG)

Tuesday, October 8, 2024

Safety and Security Moment

Emergency Preparedness

Our physical address is 383 West 31st Street.

Who will call 911, and who is their backup?

Who is CPR/AED qualified?

Know the location of emergency equipment.

Evacuation

Communicate the need to evacuate.

Follow the Facility Emergency Plan (FEP).

Know your evacuation plan/ route & muster point.

Assist those who may need help evacuating.

Wait for permission to re-enter the facility.

Safety Reporting

Proactively identify & report unsafe conditions or behaviors.

Use AVSRS through the Safety page on All Aboard or download the Enablon Go mobile app.

Report all safety concerns.

Health and Wellbeing

Take healthy actions:

- Physical Activity
- Healthy Nutrition
- Adequate Sleep
- Mental Well-being

Stay up to date with preventive services.

Take time to refresh & recharge.

Security

If You See Something, Say Something®. Call 800-331-0008 / text 27311.

Active Shooter: Run, Hide, Fight.

Always be aware of surroundings.

Display and verify proper ID on Amtrak property.

Cybersecurity

Pay attention to phishing traps in emails.

Don't click on links or attachments from unknown sources.

Report all suspicious email and cyber incidents to the Amtrak Service Desk:

800-772-4357

AmtrakServiceDesk@amtrak.com

Agenda

Meeting Goals

State of Regional Rail Service
The Need for Increased Trans-Hudson Capacity

Doubling Trans-Hudson Train Capacity at Penn Station
Study Objectives & Findings

Next Steps

Small Group & Plenary Discussion

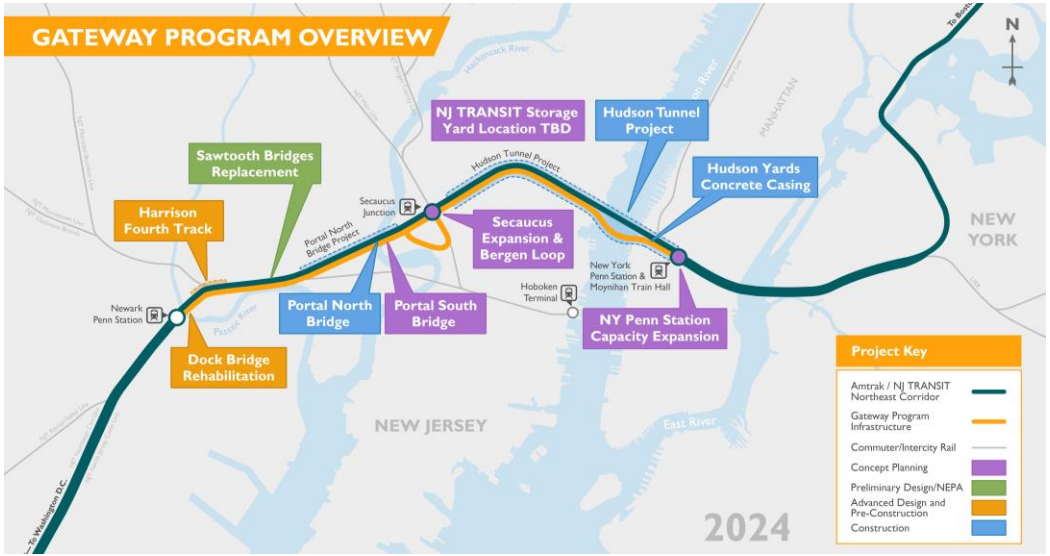
Meeting Goals

- Present context for and findings of recently released engineering feasibility study: “Doubling Trans-Hudson Train Capacity at Penn Station”
- Explain how study relates to Penn Station projects
- Answer questions about the study
- Gather feedback on planned next steps

STATE OF REGIONAL RAIL SERVICE

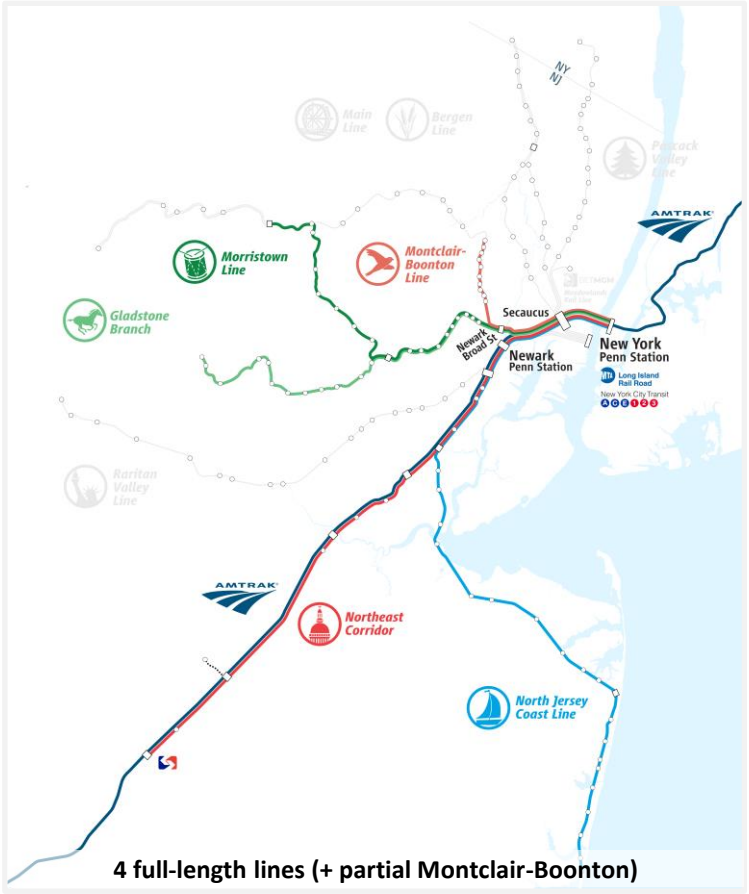
The Need for Increased Trans-Hudson Capacity

Planning Context on the Northeast Corridor (NEC)



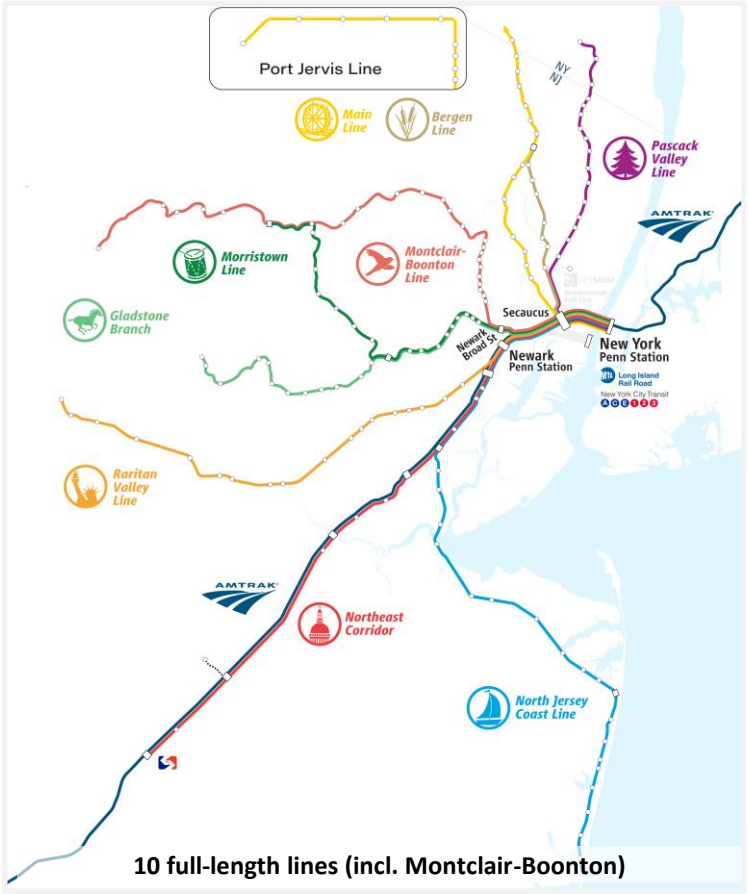
The long-term vision and near-term capital investment plan for the NEC calls for **a capacity expansion of New York Penn Station** to accommodate a **doubling or more of peak-hour trans-Hudson passenger train service**

Policy Goal of Enabling Weekday Peak One-Seat Ride



4 full-length lines (+ partial Montclair-Boonton)

Existing



10 full-length lines (incl. Montclair-Boonton)

Post-Gateway Program (2045)

48 Trans-Hudson Trains per Hour for Meaningful Connectivity

Draft Service Plan

Operator	Line / Service	Existing TPH	Post-Gateway TPH	Absolute Change
Amtrak	Acela	1	2	**+1**
	Northeast Regional	2	2	No Change
	Keystone	1	1	No Change
	State-Supported Routes	0	1	**+1**
	Long Distance Routes	0	0	No Change
NJ TRANSIT	Northeast Corridor (NEC)	9	12	**+3**
	North Jersey Coast Line (NJCL)	4	6	**+2**
	Morris & Essex Line (M&E)	4	6	**+2**
	Gladstone Line (GLD)	1	1	No Change
	Montclair-Boonton Line (MoBo)	2	4	**+2**
	Raritan Valley Line (RVL)	0	4	**+4**
	Main Line (ML)	0	3	**+3**
	Bergen County Line (BCL)	0	2	**+2**
	Port Jervis Line (PJL) (MTA-supported)	0	2	**+2**
	Pascack Valley Line (PVL) (MTA-supported)	0	2	**+2**
TOTAL Trans-Hudson: Weekday Peak Direction		**24**	**48**	**+24**

Amtrak's Empire Service is not shown in the table, since it is not a trans-Hudson service
Peak direction = NYP Inbound during Weekday AM; NYP Outbound during Weekday PM

Penn Capacity Expansion Goals

Increase rail capacity
to accommodate future demand, meet policy goals, and increase reliability

Create a unified customer experience
within a fully integrated Penn Station complex

Develop a stronger connection
between Penn Station and the surrounding neighborhood

Minimize impacts
on the human and natural environment

Support local and regional policy priorities
across communities served by Penn Station

Optimize project delivery
by minimizing construction impacts to customers, construction duration, and project costs

Preliminary illustrative image

DOUBLING TRANS-HUDSON TRAIN CAPACITY AT PENN STATION

Study Objectives and Findings

Doubling Trans-Hudson Train Capacity at Penn Station: Overview

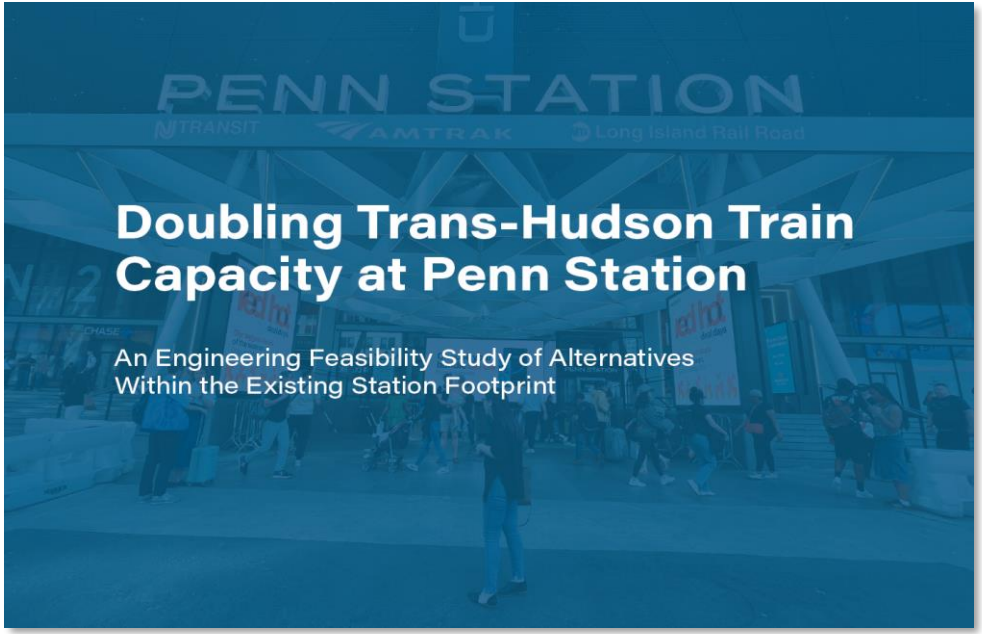
Feasibility Study co-sponsored by Amtrak, MTA, and NJ TRANSIT

Completed by WSP/FXC consultant team

An initial step of the Penn Station Capacity Expansion Project Study commissioned to answer the question:

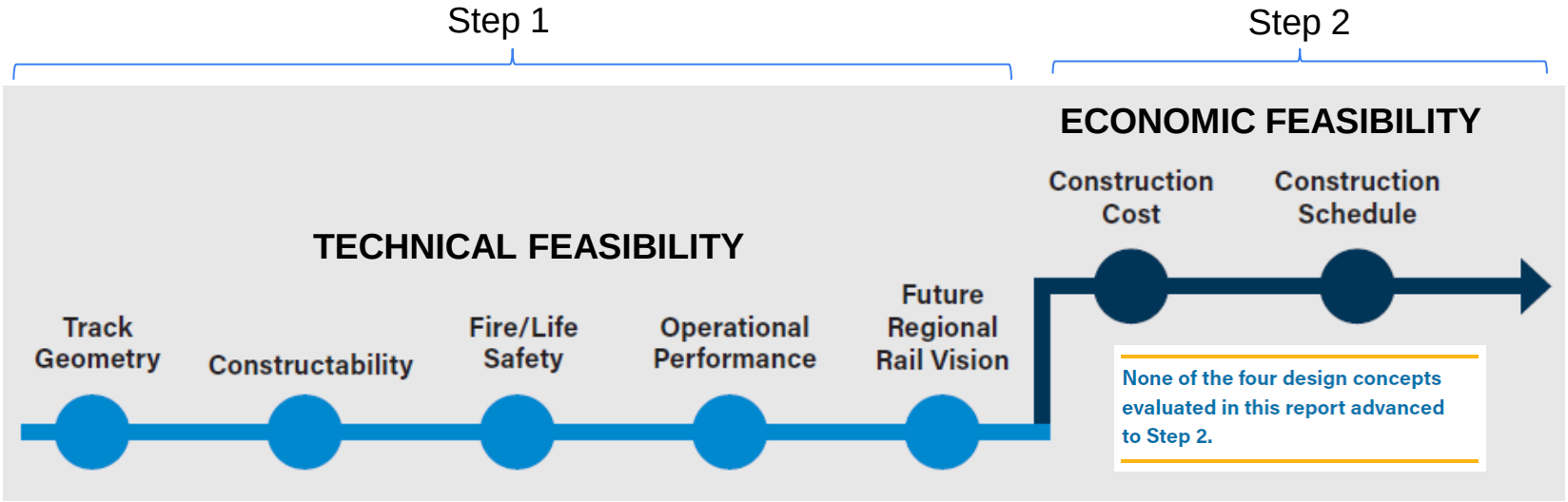
Is it possible to achieve the capacity goals of the Penn Station Capacity Expansion Project ***using infrastructure within the property lines of the existing station****?*

Conclusion: It is not possible; it will be necessary to expand the station footprint



https://pennstationcomplex.info/

Feasibility Study: Evaluation Methodology



- Two-step screening process: technical feasibility (pass/fail) → economic feasibility
- Only advance to second step if pass in <u>all</u> five criteria in first step

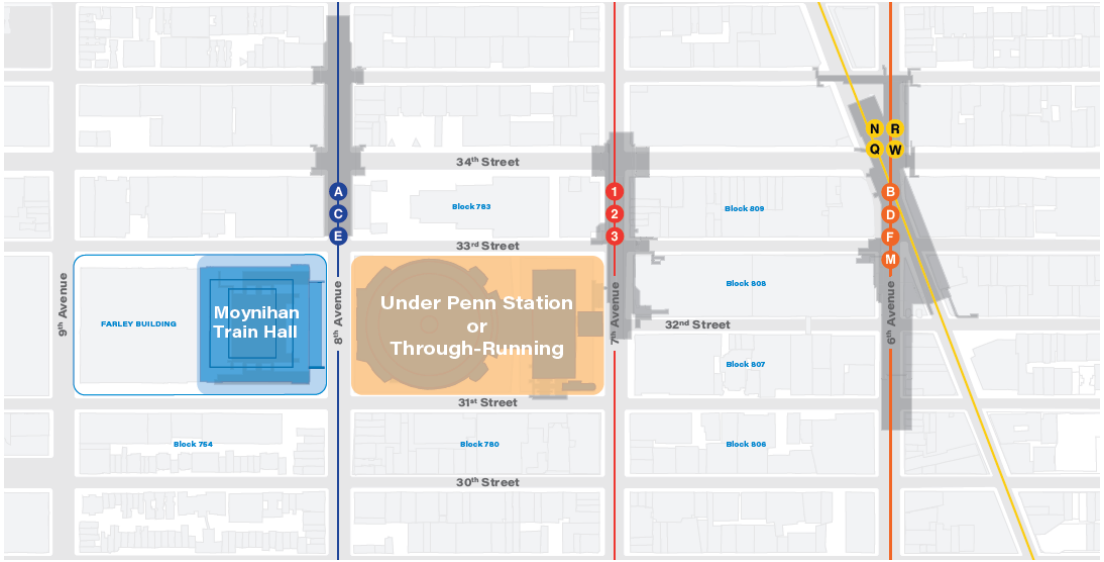
Overview of Alternatives Evaluated in the Feasibility Study

Alternative 1: Under Penn Station

Add new platform level and tracks below the existing track level of Penn Station, either by underpinning or mined tunnel

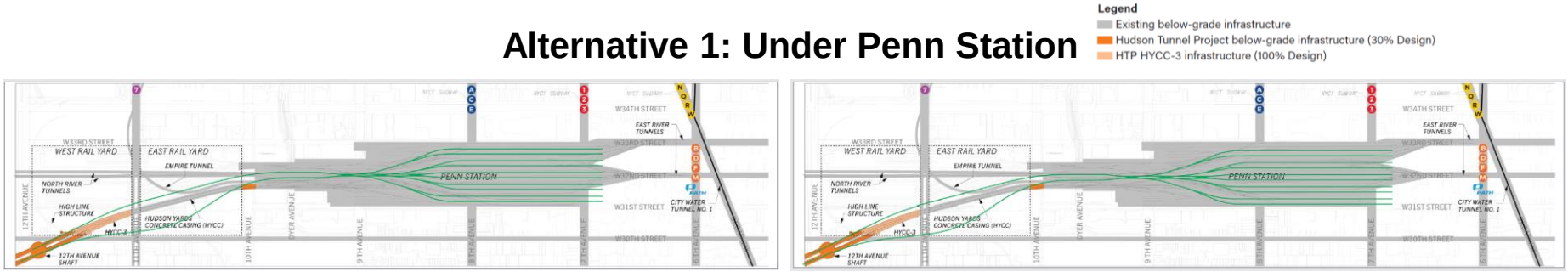
Alternative 2: Through-Running

Convert Penn Station to all through-running service



Summary of Alternatives | Four Design Concepts

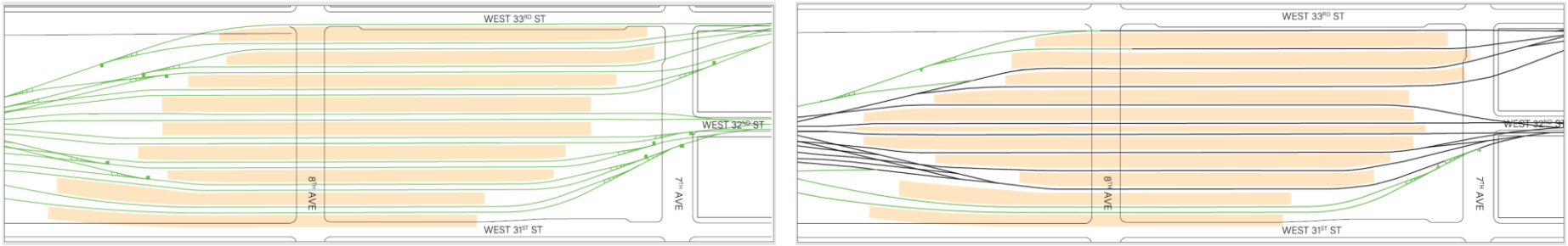
Alternative 1: Under Penn Station



Design Concept 1: Underpinning

Design Concept 2: Mined

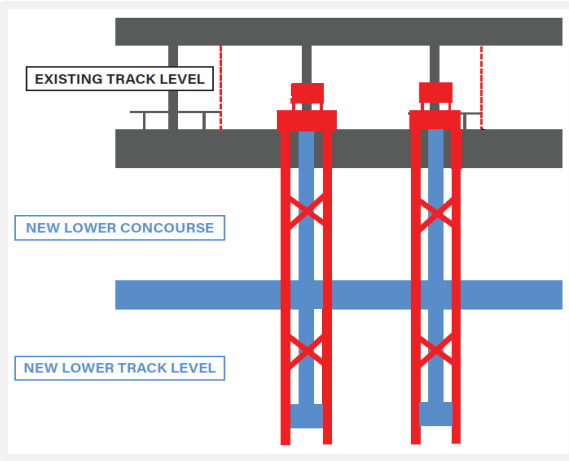
Alternative 2: Through-Running



Design Concept 1: Full Reconstruction

Design Concept 2: Limited Reconfiguration

Key Terms and Concepts



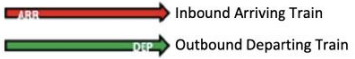
UNDERPINNING

MINED TUNNEL

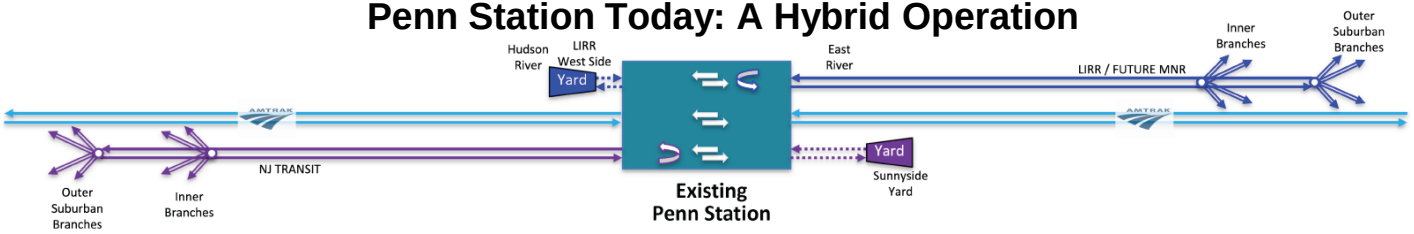
Key Terms and Concepts

TURNBACK SERVICE

THROUGH-RUNNING SERVICE

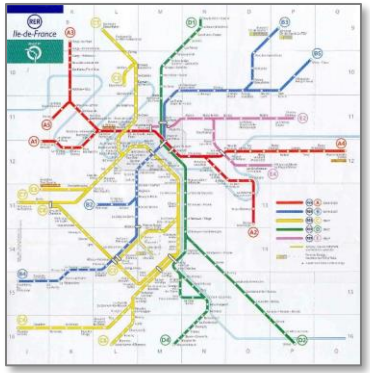


Penn Station Today: A Hybrid Operation

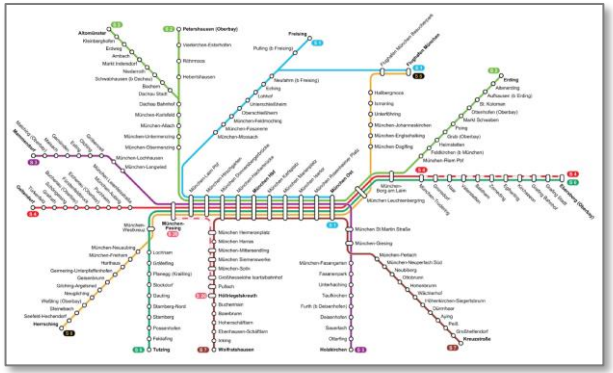


Cross-Regional Rail & Regional Metro

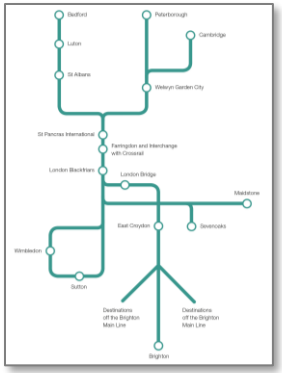
Survey of International Best Practices

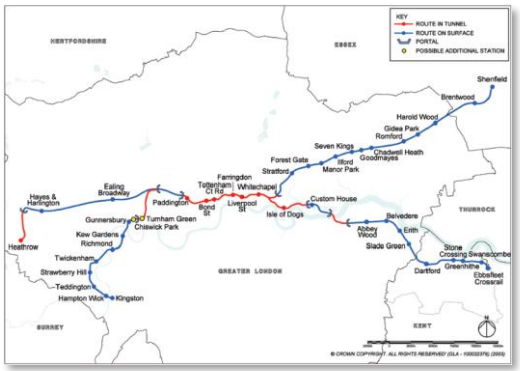


Paris RER



Munich S-Bahn





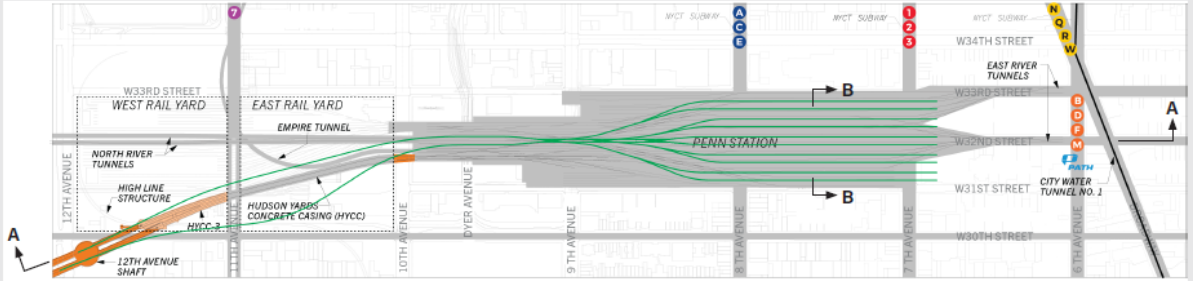
London Thameslink and Elizabeth Line

- Regional metro systems comprise a targeted portion of the regional rail networks - centers of population, employment, business or major attractions like airports that support frequent, fast service
- Regional metro systems typically do not operate within original train sheds but via purpose-built station expansions (shoulder stations) adjacent to existing major stations, and separate, simpler interlockings that facilitate frequent transit-style service
- Systems take decades to implement, usually in stages

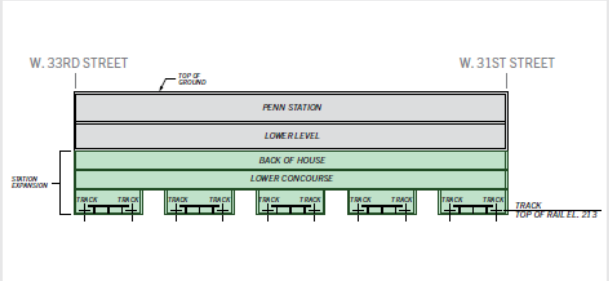
FEASIBILITY STUDY BRIEFING

Analysis and Implications

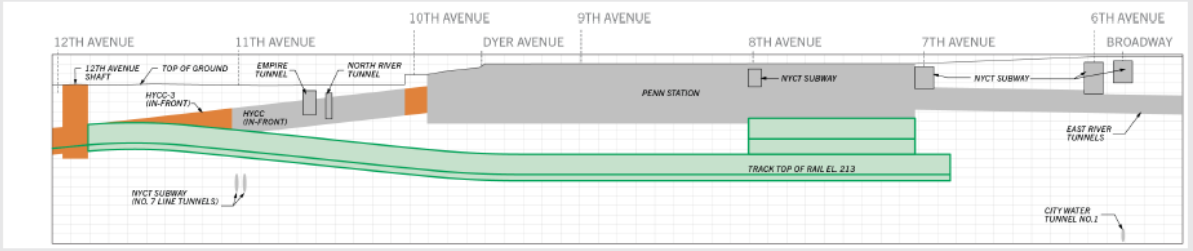
Alternative 1: Under Penn | Design Concept 1: Underpinning



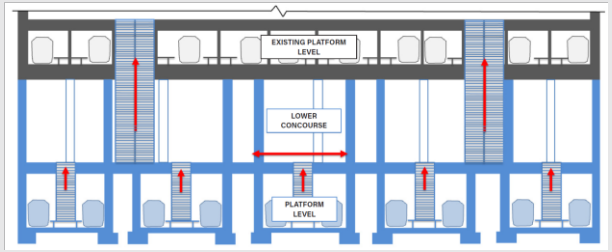
Design Concept Plan



Cross Section B-B



Profile Section A-A



Adds 10 single-level tracks within the existing station footprint, directly below the lower level of the station

Requires underpinning of existing Penn Station columns between Eighth and Seventh Avenues

Requires permanent removal of at least 2 existing platform tracks to accommodate vertical circulation between the lower concourse and main concourse

Evaluation of Under Penn – Underpinning

Track Geometry: meets feasibility-level requirements

Constructability: need to underpin more than 1,000 columns

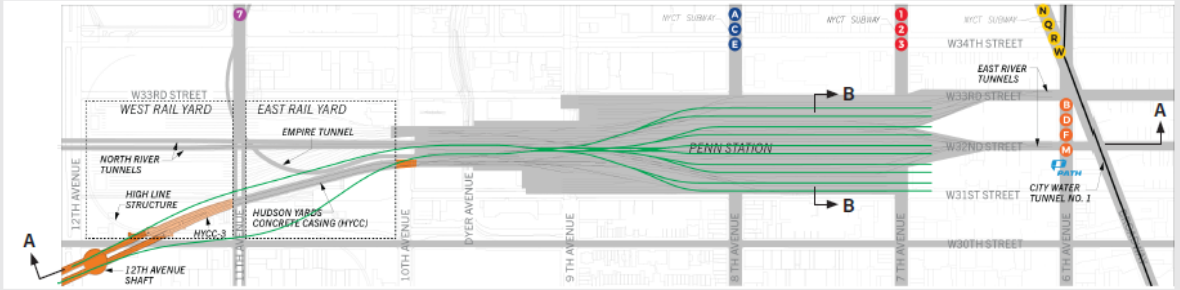
Fire-Life Safety: unable to comply with requirements (without additional permanent real estate acquisitions beyond the station footprint)

Operational Performance: insufficient trans-Hudson capacity (+14 incremental trains per hour compared to +24 needed)

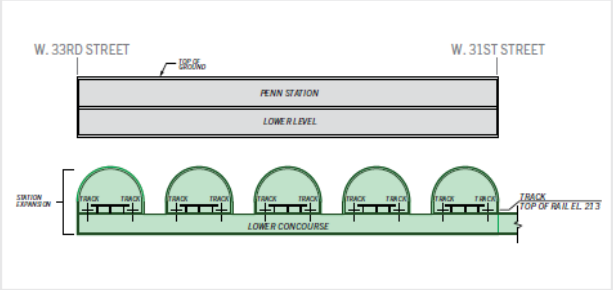
Future Regional Rail: does not preclude implementation of cross-regional rail

Track Geometry	Constructability	Fire-Life Safety	Operational Performance	Future Regional Rail
Pass	Fail	Fail	Fail	Pass

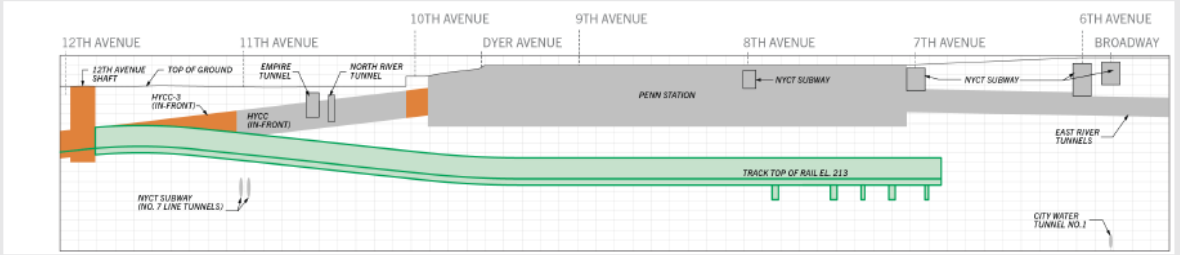
Alternative 1: Under Penn | Design Concept 2: Mined Cavern



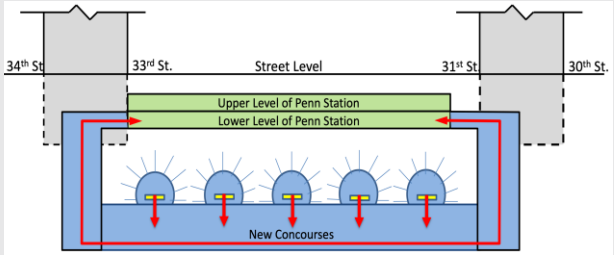
Design Concept Plan



Cross Section B-B



Profile Section A-A



Adds 10 single-level platform tracks (same as Underpinning design concept) in multiple mined caverns side-by-side within the existing Penn Station footprint, directly below the existing lower level of the station

Vertically separated from the existing station; would not require any underpinning

Requires vertical circulation between the lower concourse and main concourse to go transversely via the surrounding properties

Evaluation of Under Penn | Mined Cavern

Track Geometry: meets feasibility-level requirements

Constructability: infeasible to construct without permanently acquiring additional real estate beyond existing station footprint

Fire-Life Safety: unable to comply with requirements (without additional permanent real estate acquisitions beyond the station footprint)

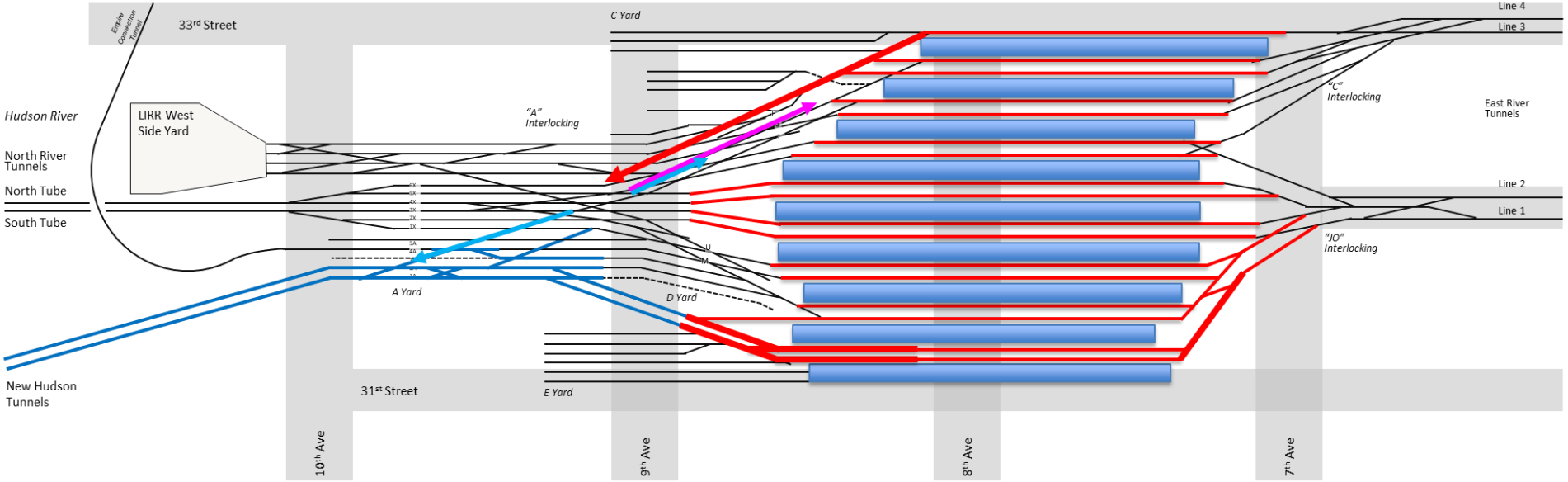
Operational Performance: insufficient trans-Hudson capacity (+20 incremental trains per hour compared to +24 needed)

Future Regional Rail: does not preclude implementation of cross-regional rail

Track Geometry	Constructability	Fire-Life Safety	Operational Performance	Future Regional Rail
Pass	Fail	Fail	Fail	Pass

Alternative 2: Through-Running | Design Concept 1: Full Reconstruction

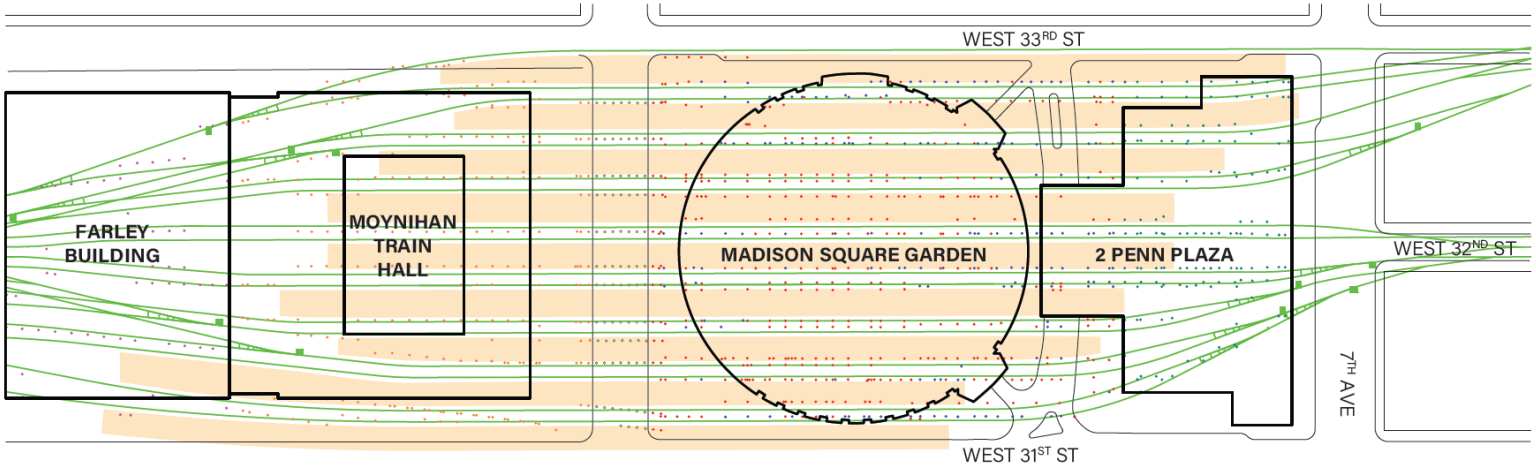
Maximizing within footprint: 17 platform tracks + widened platforms



Fully reconstruct tracks and platforms of existing station to optimize for 100% through-running operations

Approximately 1,045 columns removed, relocated, or strengthened

Through-Running – Full Reconstruction



Requires removing, relocating, or strengthening approximately 1,045 columns

Structure Affected	No. of Columns to be Relocated
Eighth Avenue and Subway	81
Moynihan Train Hall	224
Farley Office Building	57

Structure Affected	No. of Columns to be Relocated
Madison Square Garden	159
Penn 2	135
Penn Station	389

Evaluation of Through-Running – Full Reconstruction

Track Geometry: meets feasibility-level requirements

Constructability: complex structural work disruptive to station operations (estimated 30% reduction in peak period service for approximately 12 years during construction)

Fire-Life Safety: meets feasibility-level requirements

Track Geometry	Constructability	Fire-Life Safety	Operational Performance	Future Regional Rail
Pass	Fail	Pass		

Requirements for Enabling Potential Regional Metro

Tens of billions of dollars in capital-intensive investment above and beyond Gateway Program:

Infrastructure

- Additional tracks
- Flyovers at junctions
- Electrification, specialized signal system
- Stations (full train-length platforms)

Fleet and Facilities

- Interoperable trainsets with more doors
- Maintenance facilities

Long and sustained track outages and service reductions during construction throughout the entire service area

Governance changes:

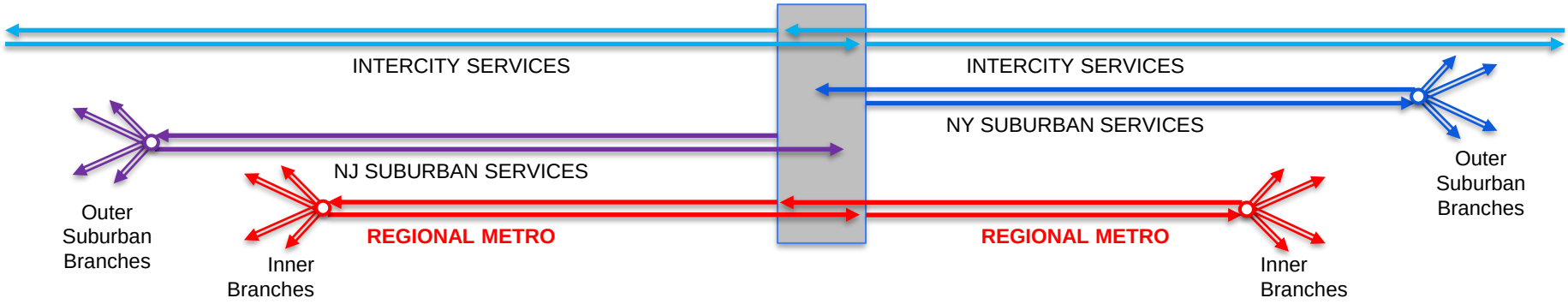
- Labor agreements, train operating rules
- Passenger information systems, fares
- Cost/subsidies and revenue sharing

Potential regional metro network

(for illustrative purposes only, not based on demonstrated market demand)

Cross-Regional Rail Includes Three Types of Rail Service

- **Intercity**
- **Regional Metro – runs through between west side and east side branch lines**
- **Suburban (commuter) service – turns back within the urban core area**

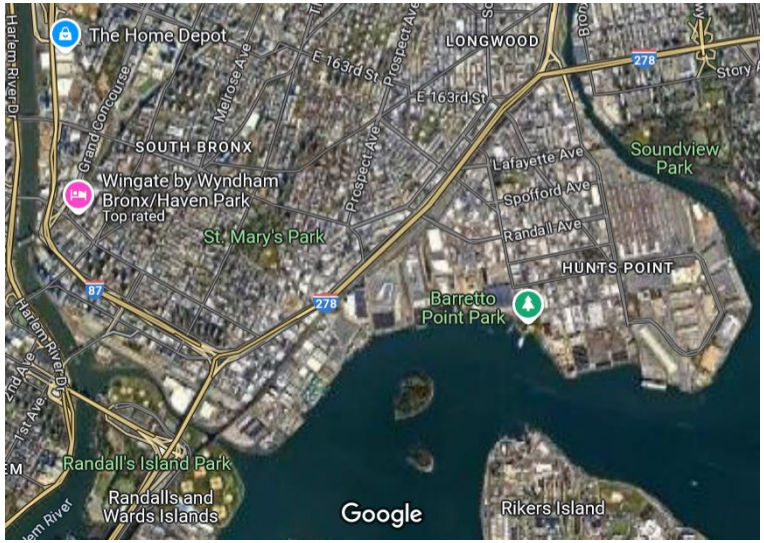


Impacts of Through-Running Concepts Beyond Penn Station

Concepts shift property and environmental impacts from Midtown to elsewhere in region at significant cost

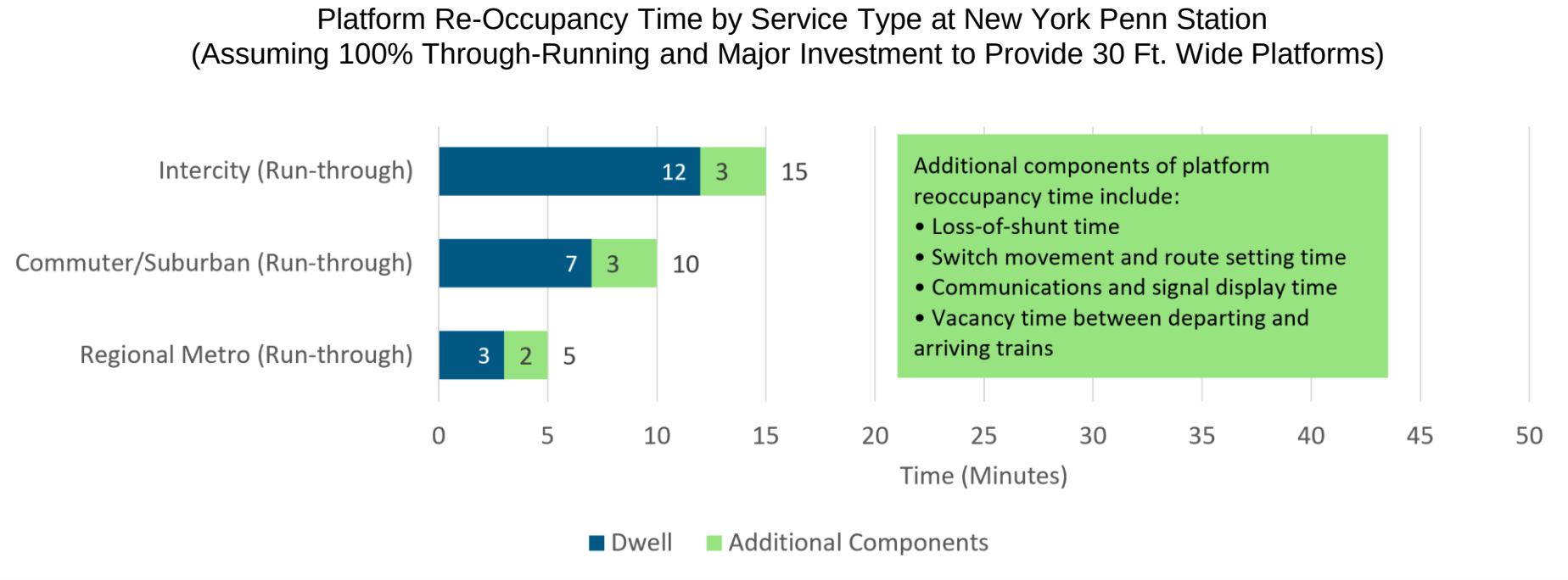
- One new yard in Southeast Bronx (in addition to one proposed in Meadowlands) to replace loss of West Side Yard
- Two new multi-track stations for direction reversal (turnback) of commuter/suburban trains outside Manhattan CBD

Meadowlands in NJ



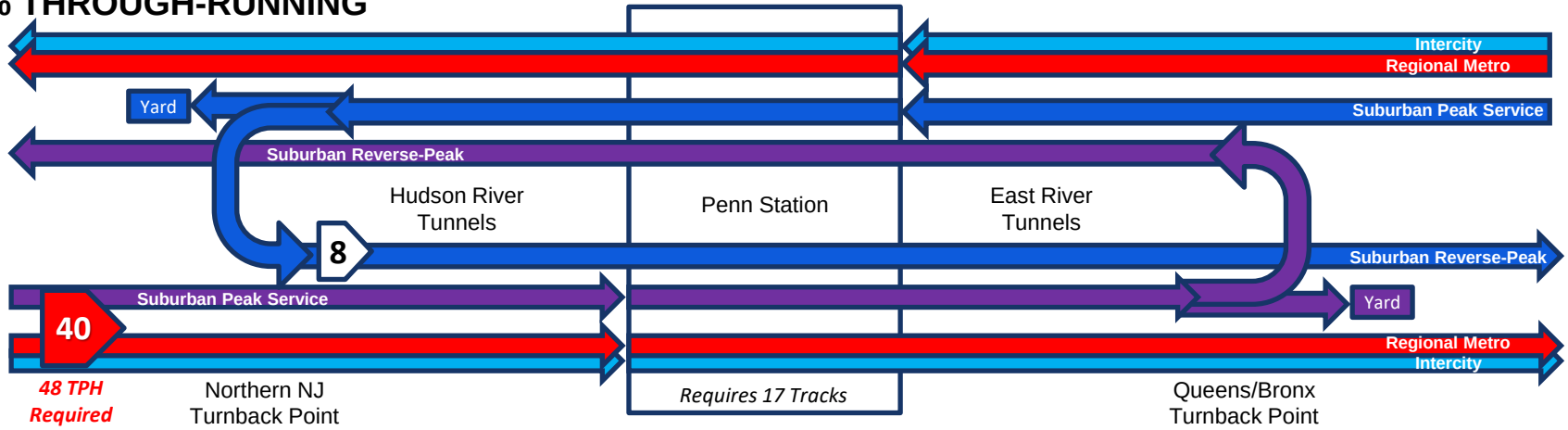
Southeast Bronx in NY

Dwell Time & Platform Re-Occupancy Time

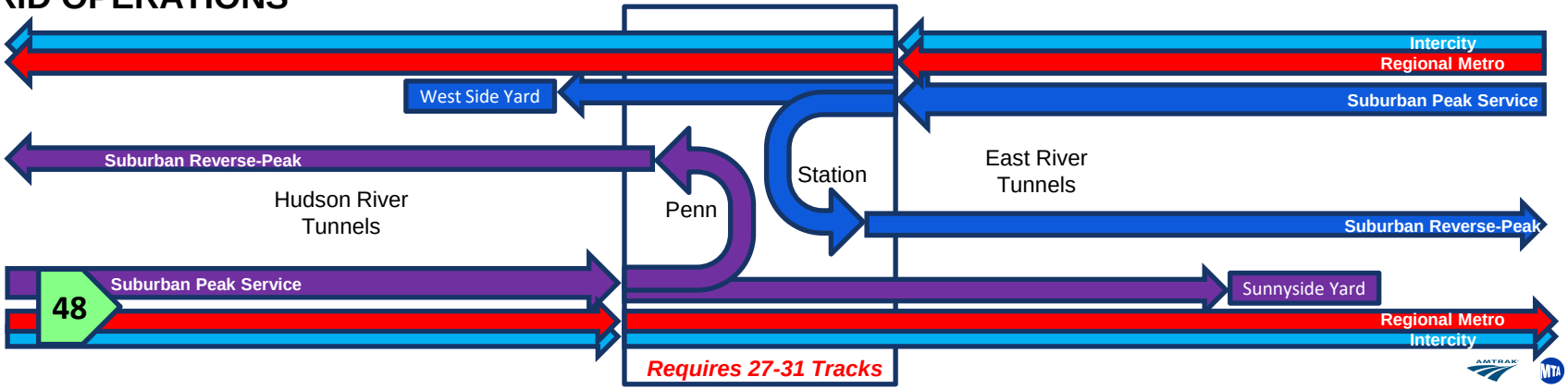


Suburban Reverse-Peak Service Constraint

100% THROUGH-RUNNING



HYBRID OPERATIONS



Evaluation of Through-Running – Full Reconstruction

Track Geometry: meets feasibility-level requirements

Constructability: complex structural work disruptive to station operations (estimated 30% reduction in peak period service for approximately 12 years during construction)

Fire-Life Safety: meets feasibility-level requirements

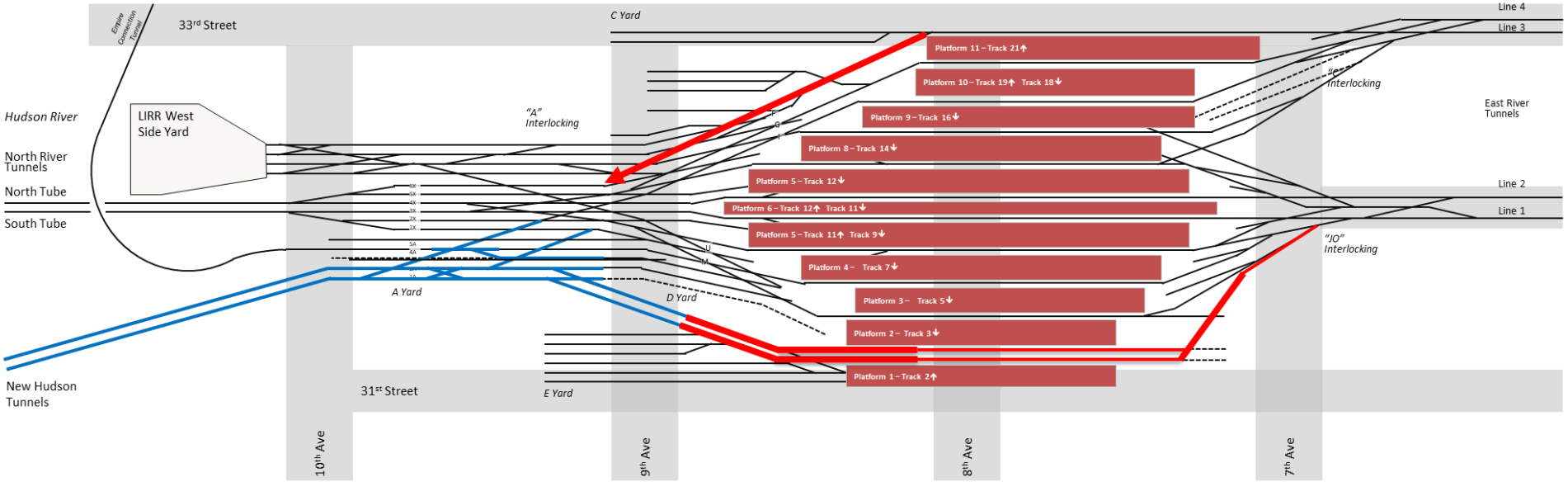
Operational Performance: can achieve +24 incremental trans-Hudson trains per hour but unable to maintain existing levels of reverse-peak commuter service

Future Regional Rail: unable to fully accommodate cross-regional rail vision (i.e., regional metro as well as suburban and intercity rail service)

Track Geometry	Constructability	Fire-Life Safety	Operational Performance	Future Regional Rail
Pass	Fail	Pass	Fail	Fail

Alternative 2: Through-Running | Design Concept 2: Limited Reconfiguration

Proposal based on ReThinkNYC plan: 12 platform tracks + widened platforms



Construct a deck over every other track in station so that the existing platforms can be widened to support simultaneous boarding and alighting

Shorten dwell times and increase train throughput on the remaining 12 platform tracks (compared to 17 platform tracks in Full Reconstruction design concept)

Evaluation of Through-Running – Limited Reconfiguration

Track Geometry: meets feasibility-level requirements

Constructability: meets feasibility-level requirements

Fire-Life Safety: meets feasibility-level requirements

Operational Performance: insufficient trans-Hudson capacity (+16 incremental trains per hour compared to +24 needed) as well as unable to maintain existing levels of reverse-peak commuter service

Future Regional Rail: unable to fully accommodate cross-regional rail vision (i.e., regional metro as well as suburban and intercity rail service)

Track Geometry	Constructability	Fire-Life Safety	Operational Performance	Future Regional Rail
Pass	Pass	Pass	Fail	Fail

Summary of Operational Performance Evaluation

		Incremental Trans-Hudson Capacity* (tph)	Maintains Existing Level of Bi-Directional Commuter Service?	Capacity-Constraining Elements
Alternative 1: **Under Penn Station**	Design Concept 1: **Underpinning — Single Level**	+14	Yes	Interlocking and vertical circulation to lower platforms
	Design Concept 2: **Mined — Single Level**	+20	Yes	Interlocking
Alternative 2: **Through-Running**	Design Concept 1: **Full Reconstruction**	+24	No	Tunnels and Station
	Design Concept 2: **Limited Track and Platform Reconfiguration**	+16	No	Station

* Compared with capacity of existing North River Tunnel of 24 tph in the peak direction of travel (eastbound in AM peak and westbound in PM peak).

Summary of Overall Evaluation

		Step 1 (Pass / Fail)					Step 2*	
		Track Geometry	Constructability	Fire-Life Safety	Operational Performance	Future Regional Rail Vision	Construction Cost	Construction Schedule
Alternative 1: **Under Penn Station**	Design Concept 1: **Underpinning — Single Level**	Pass	Fail	Fail	Fail	Pass	-	-
	Design Concept 2: **Mined — Single Level**	Pass	Fail	Fail	Fail	Pass	-	-
Alternative 2: **Through-Running**	Design Concept 1: **Full Reconstruction**	Pass	Fail	Pass	Fail	Fail	-	-
	Design Concept 2: **Limited Track and Platform Reconfiguration**	Pass	Pass	Pass	Fail	Fail	-	-

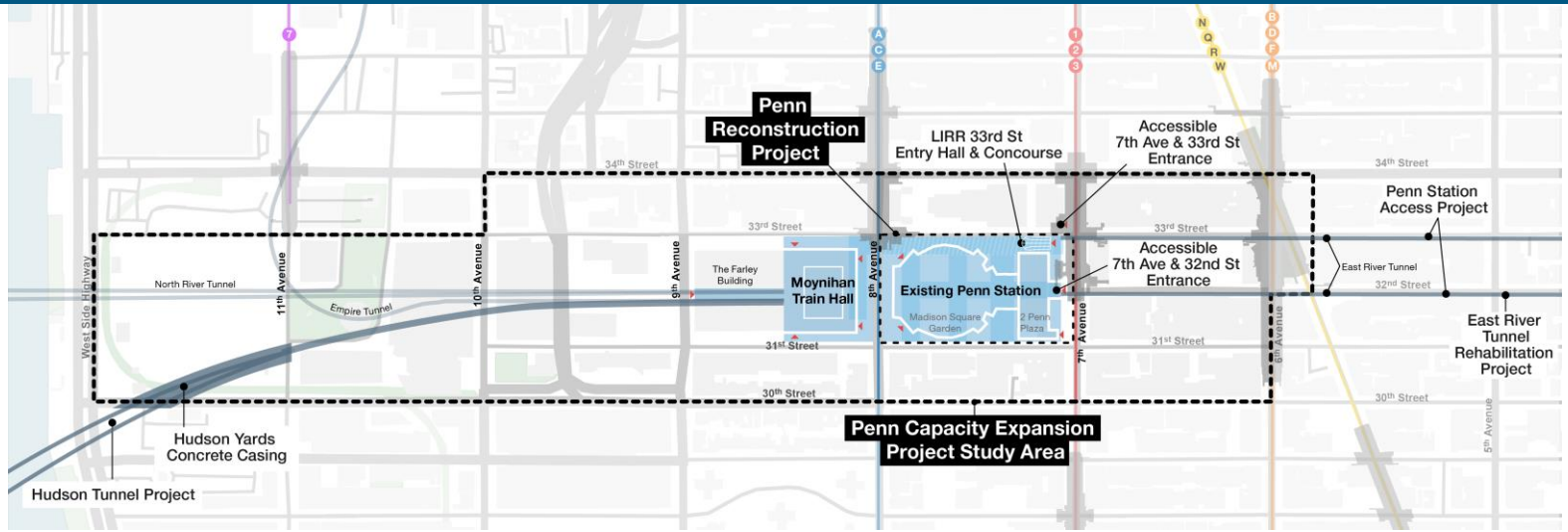
* None of the design concepts evaluated in this report passed the Step 1 technical feasibility screening.


PENN STATION
NJTRANSIT
AMTRAK
Long Island Rail Road
CHASE
verizon
red hot
deal days
Our biggest deals of the season.
Only until May 29th
Choose your bundle on us
PENN STATION

NEXT STEPS

Penn Reconstruction + Penn Capacity Expansion

Elevate Penn Station into a **modern**, **world-class public transportation hub** that provides **safe and reliable rail service** and supports **economic development and connectivity** throughout the **region**



Penn Reconstruction (PennR)

Improve safety, functionality, and overall customer experience within existing New York Penn Station by increasing passenger circulation space and relieving crowding, improving egress and accessibility, and modernizing outdated and substandard equipment and conditions

Penn Capacity Expansion (PennX)

Increase rail capacity of New York Penn Station to accommodate a doubling or more of peak-hour trans-Hudson passenger train service in support of the Gateway Program and consistent with the long-term vision established by the NEC FUTURE Program, thereby improving rail reliability, connectivity, operational flexibility, and passenger movement, and encouraging economic growth

NEXT MEETING

Tuesday, October 29, 5:00-6:30pm – NYU Wagner

Small Group Discussion

Was any part of the feasibility study analysis unclear?

Is there any additional information you wish the Railroad Partners had included in this briefing?

Do you have any feedback or suggestions regarding the Railroad Partners' planned next steps?

DISCUSSION