

**APPENDIX B:  
BOARD  
PRESENTATION  
MATERIALS  
RELATING TO THE  
PORT AUTHORITY  
BUS TERMINAL  
MIDTOWN BUS  
TERMINAL MASTER  
PLANNING EFFORTS**



# Midtown Bus Master Plan Update

October 22, 2015

# Program Timeline



# The Master Planning Process

- **Goals and Objectives:**

- Improve customer experience
- Increase capacity and operational efficiency
- Modernize terminal
- Reduce neighborhood impacts
- Develop funding and phasing strategies
- Strengthen role of buses as most flexible, resilient link in trans-Hudson network

- **Considerations :**

- Transportation connectivity
- Bus operation efficiency
- Urban design impact

# The Five Concepts



**Concept 1**



**Concept 3**



**Concept 5**

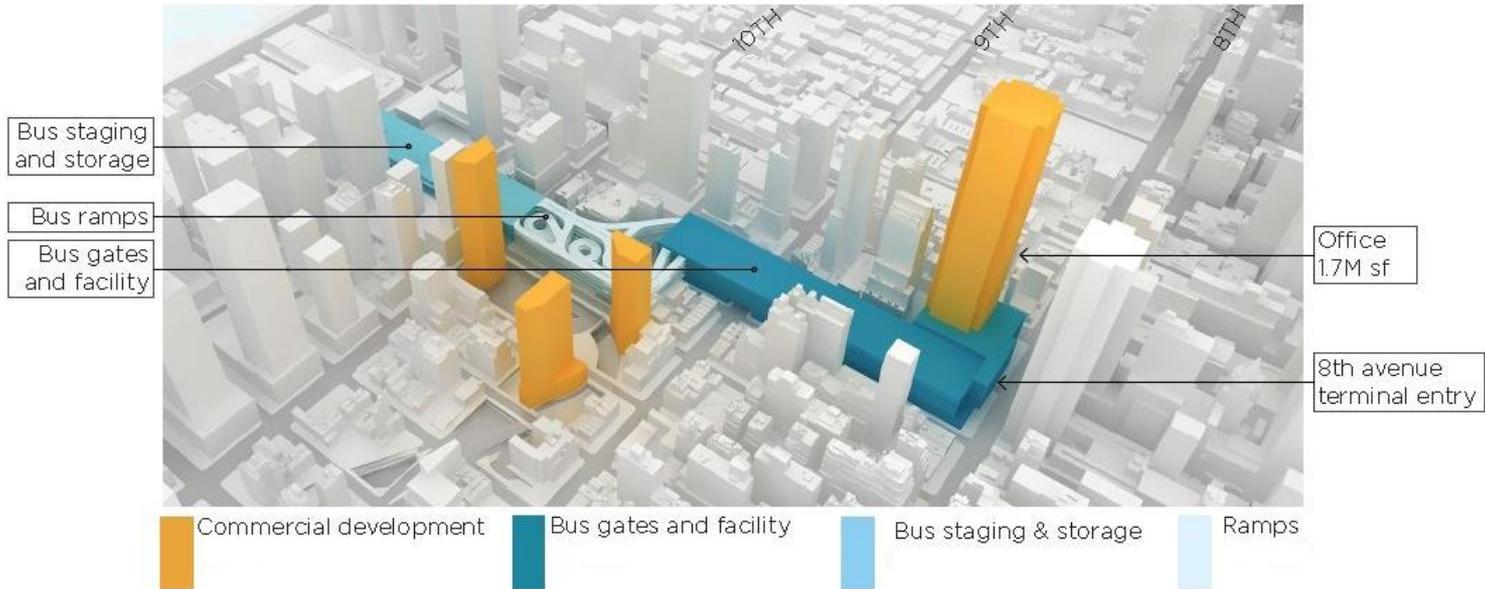


**Concept 2**

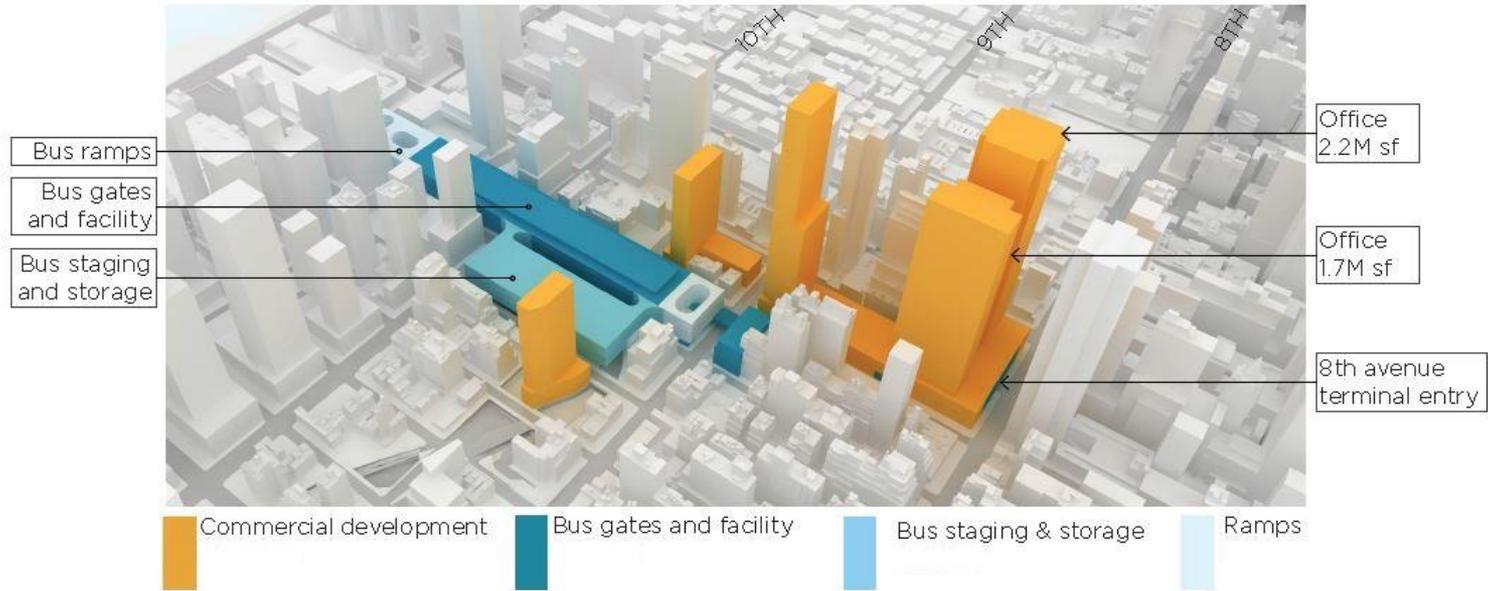


**Concept 4**

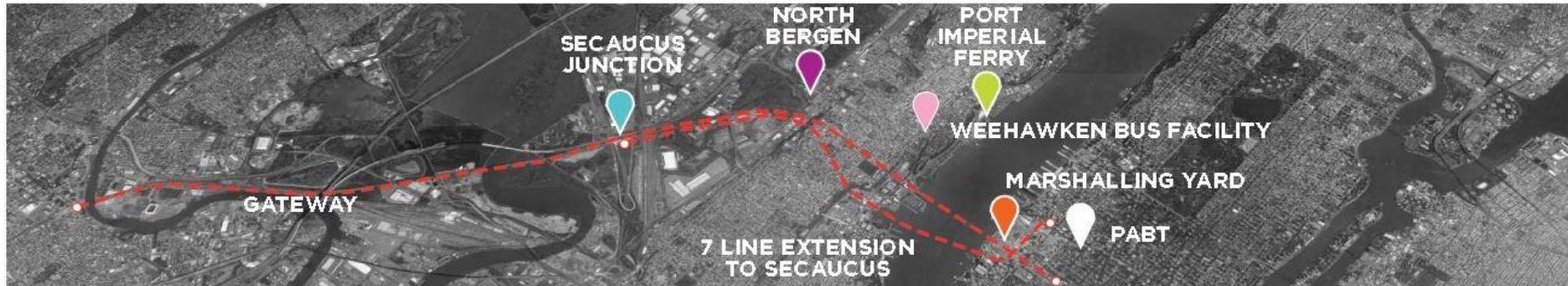
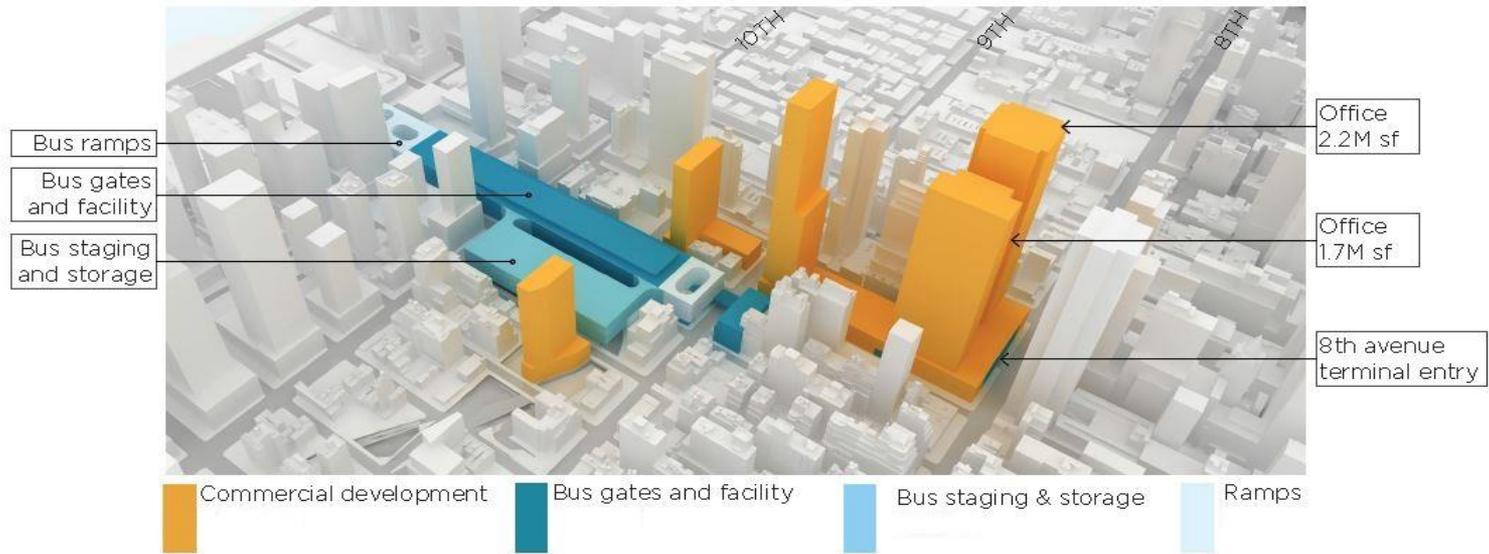
# Concept 1



# Concept 3



# Concept 5



Additional trans-Hudson rail capacity - either Gateway (2030 or after) or extension of 7 Line to Secaucus

**60** Gates Expanded Seaucus Junction

**15** Gates North Bergen Park & Ride

**4** Gates Port Imperial Ferry Terminal

Combined commuter/intercity facility at Marshalling Yard site (or on street bus stops near 34th Street 7 Line Station)

weehawken bus facility

+ On street bus stops and bus priority improvements in Midtown Manhattan

# Concept Summary

	Concept 1	Concept 2	Concept 3	Concept 4	Concept 5
<b>Terminal Location and Commute Quality</b>	✓✓✓	✓✓	✓	✓✓	✓
<b>On-site Intercity</b>	Yes	No	No	No	No
<b>Development Opportunities</b>	✓	✓✓	✓✓✓	✓✓✓	✓✓✓
<b>Meets Commuter Passenger Demand</b>	Yes	Yes	Yes	Yes	No
<b>Project Duration</b> (Including 6 year pre-construction period)	15 years	15 years	13 years	15 years	11-12 years

# Next Steps

- Peer Review
- Public Outreach
- Planning Authorization
- Retention of Professional Technical Services
- International Design Competition

# *Midtown Bus Master Plan Update*

September 24, 2015

# *Major Issues at the PABT*

- Quality of service – lines, delays, reliability.
- Current peak demand exceeds capacity and spills over onto city streets.
- Queuing buses affect air quality and generate traffic congestion.
- Operating deficit of over \$100 million per year.

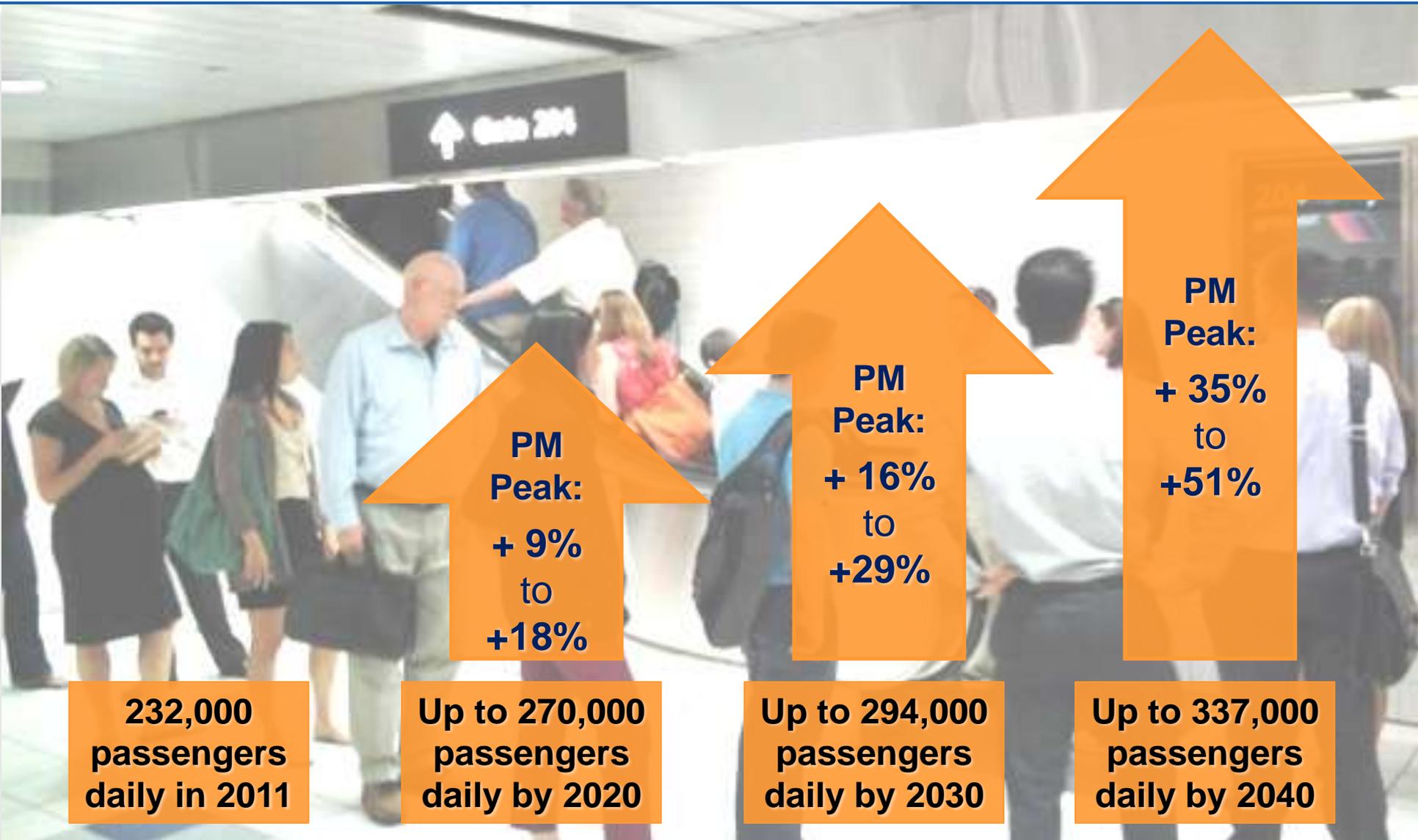


# Major Issues at the PABT

- The structural slabs supporting bus operations will need to be replaced in 15-25 years.
- Addressing structural issues requires replacing the terminal.
- Terminal was not built for taller, longer, heavier modern buses.
- Inadequate bus parking, staging, circulation space.



# Forecasted PABT Passenger Growth 2011-2040



**232,000**  
passengers  
daily in 2011

**Up to 270,000**  
passengers  
daily by 2020

**Up to 294,000**  
passengers  
daily by 2030

**Up to 337,000**  
passengers  
daily by 2040

**PM  
Peak:  
+ 9%  
to  
+18%**

**PM  
Peak:  
+ 16%  
to  
+29%**

**PM  
Peak:  
+ 35%  
to  
+51%**

## Early Actions in Place

### PABT \$90 million Quality of Commute Improvement Program

- Improved Trip Reliability/Reduced Terminal Crowding
- Consolidated NJT operations on third floor and reassigned bus gates
- Improved Communications
- Improved Terminal Conditions



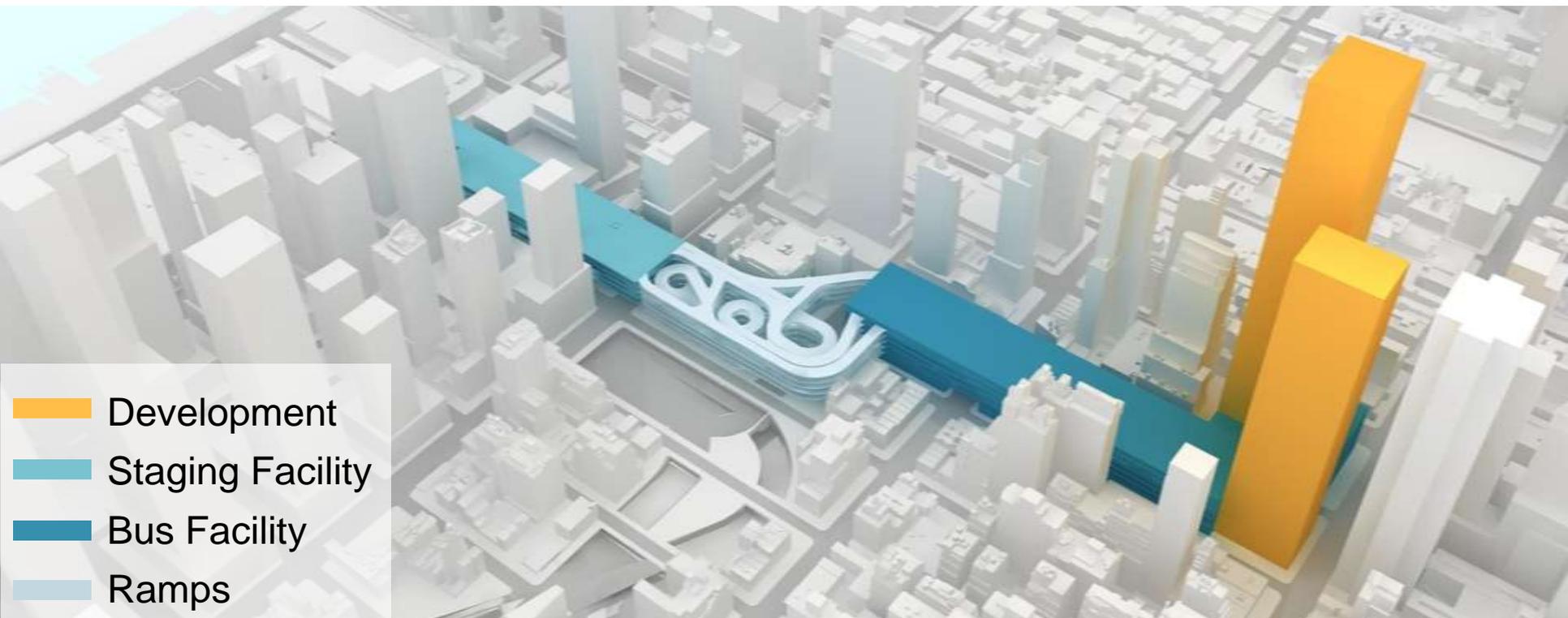
# Concept 1

- Only concept that accommodates all 2040 commuter and intercity demand
- Locates terminal close to subways and midtown central business district
- **Requires an interim terminal facility**



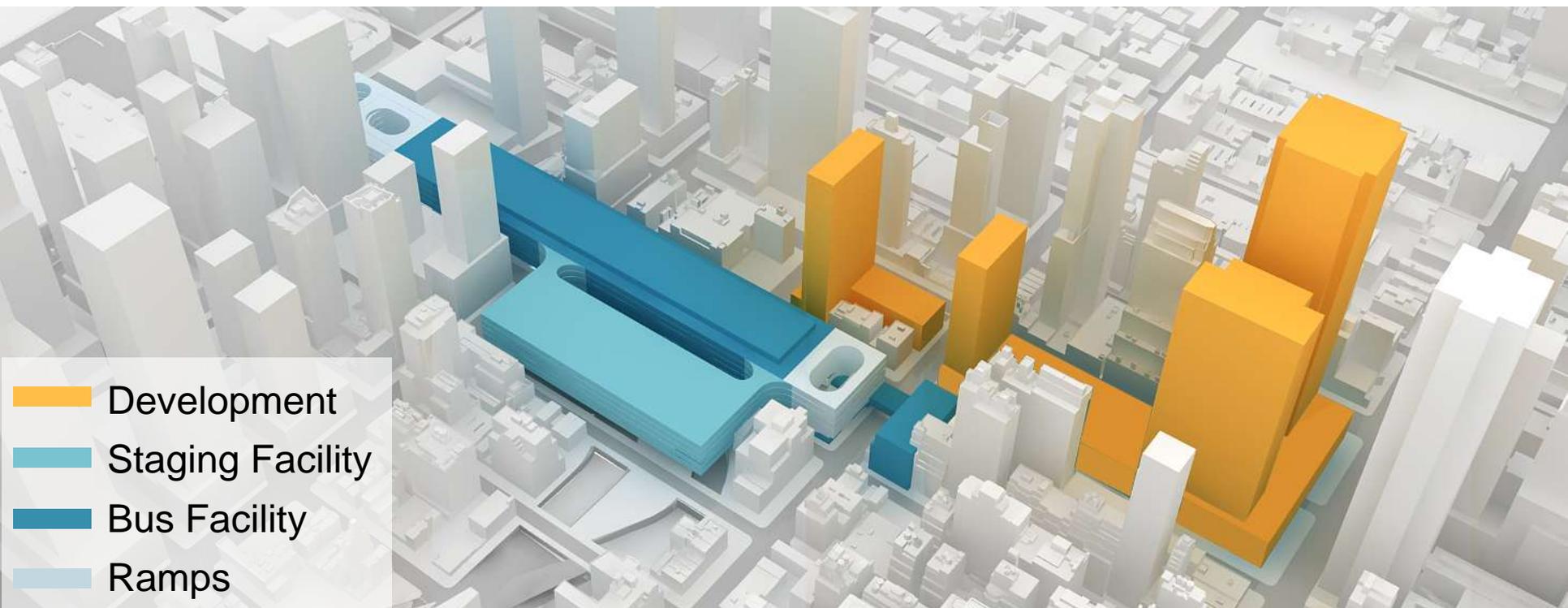
## Concept 2

- Allows for additional office tower on bus terminal site
- Requires an interim terminal facility
- Requires additional facility to accommodate intercity buses



## Concept 3

- Does not require an interim facility
- Maximizes revenue potential from development of PABT site
- Requires additional facility to accommodate intercity buses
- Longer walk for most bus passengers



## *Pedestrian Challenges with moving terminal west*

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- 87% of bus terminal passengers are expected to cross 9<sup>th</sup> Avenue as they arrive at or leave the terminal.
- In 2040, the forecast is for approximately 194,000 pedestrian trips across 9<sup>th</sup> Avenue every business day.
- Bus gates are between 1,200 and 1,600 feet from terminal entrance on 8<sup>th</sup> Avenue at 41<sup>st</sup> Street – a 5-7 minute walk.

# Concept 3 and 5: Pedestrian Walkway



-  Commercial Development
-  Retail
-  Passenger Circulation

Mezzanine Level Floor Plan

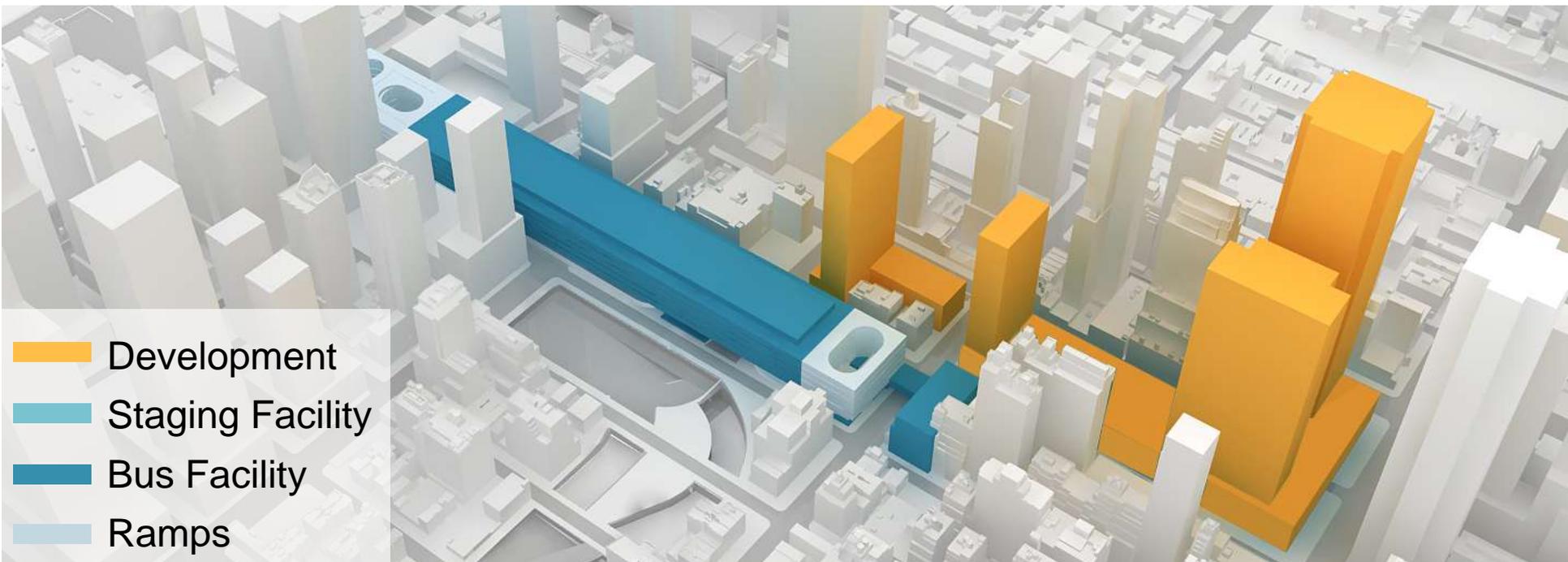
# Concept 4

- Requires an interim terminal facility
- Requires additional facility to accommodate intercity buses
- Bus staging and storage facility does not meet Port Authority operational and engineering standards due to site constraints



## Concept 5

- Least expensive set of bus facilities in NYC
- Maximizes development revenue
- Accommodates only 50% of 2040 commuter demand
- Requires additional facility to accommodate intercity buses
- Longer walk for most bus passengers



# *Ideas for further study from outside consultants*

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1. Consider shortening project schedule by
  - a. Avoiding development of an interim bus terminal.
  - b. Consolidating government approvals with site acquisition.
  - c. Breaking construction work into multiple bid packages.
2. Focus on reducing total project cost by:
  - a. Shortening project duration.
  - b. Using pre-cast elements.
  - c. Reducing soft costs.

# *Ideas for further study from outside consultants*

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3. Possible changes to program and facility design:
  - a. Replace triple helix ramp complex with ramps cantilevered on the outside of the terminal.
  - b. Increase bus-only lanes on the Lincoln Tunnel corridor and automate vehicle technology.
  - c. Centralize control of PABT operations in a single entity.
  - d. Scale back on staging/storage facility and stage buses within terminal building and at other facilities in NYC or NJ.
  - e. Reconsider whether Port Authority should provide bus parking facilities, which are typically an operator responsibility.

# ***Midtown Bus Master Planning Update***

*Public Session*

*March 19, 2015*

# *Midtown Bus Master Planning Update*

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- Planning team has been at work for a year and a half.
- Addresses trans-Hudson buses today and into 2040.
- Includes commuter buses from NJ, NY, and PA and intercity buses (which are non-commuter buses traveling longer distances).
- Consultant team:
  - Kohn Pedersen Fox Associates (Architects)
  - Parsons Brinckerhoff (Engineering)
  - Skanska (Construction Staging)
  - Thornton Tomasetti (Structural Engineering)
  - VJ Associates (Estimating)

# *Goals for Bus Master Planning*

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- Improve customer experience
- Increase capacity and operational efficiency
- Modernize terminal
- Reduce neighborhood impacts
- Develop funding and phasing strategies
- Strengthen role of buses as most flexible, resilient link in trans-Hudson network

# *Major Issues at the PABT*

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# Major Issues at the PABT

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# Early Actions in Place

## PABT \$90 million Quality of Commute Improvement Program

- Improved Trip Reliability/Reduced Terminal Crowding
- Improved Communications
- Improved Terminal Conditions



## *Potential Additional Early Actions*

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- Build bus storage/staging options in NY and NJ
- Develop satellite terminal for intercity bus operations
- Implement technology to improve fleet management
- Explore strategies to manage near term growth at the existing terminal:
  - Route consolidation
  - Hub & spoke operations
  - Hudson River ferries
  - Service to other transit hubs in NY and NJ (George Washington Bridge Bus Station, Secaucus Junction, ferry terminals)
  - Gate utilization

## *Why not rehabilitate the existing PABT?*

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- Impractical to keep the PABT operational during a phased rehabilitation of the bus level floor slabs.
- Meeting code and accessibility requirements would reduce capacity below current levels.
- Expansion required to address lost capacity, current deficiencies and growing demand.
- Major capital investment needed over the next 25 years to keep the PABT in operation without addressing structural slabs and without expanding capacity.

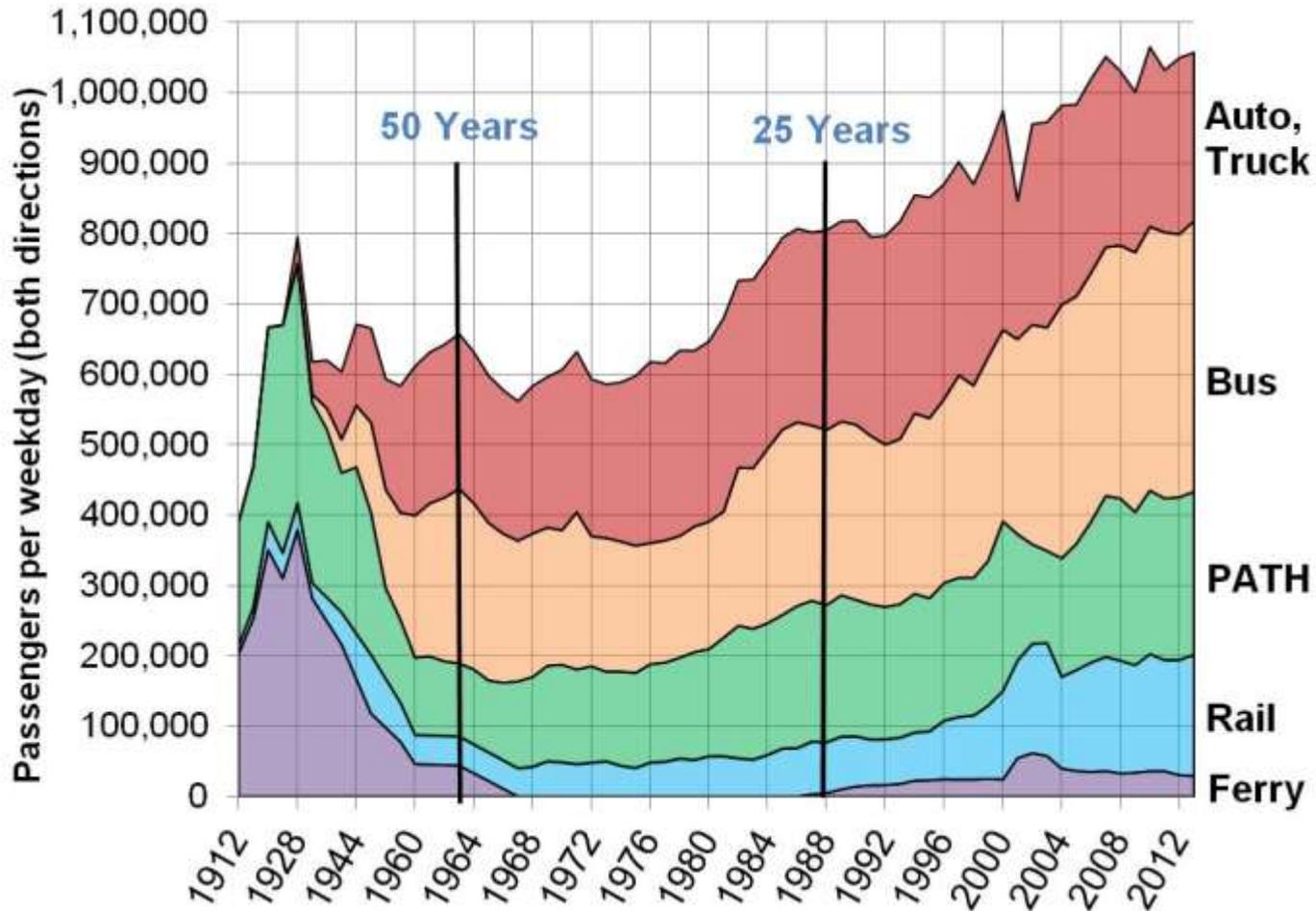
# *Midtown Bus Master Planning Update*

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- Building blocks for the plan:
  - Population and employment projections
  - Travel demand forecasts in coordination with NJ Transit
  - Interviews with bus operators, bus passenger surveys
  - Requirements for bus gates, staging, parking, passenger circulation
  - Survey of West Midtown properties
- 20 initial alternatives screened down to 5 working concepts.
- Developed construction staging and cost estimates.
- Work is in progress. Additional alternatives are being analyzed and must be reviewed by stakeholders before the Port Authority and our regional partners settle on a course of action.

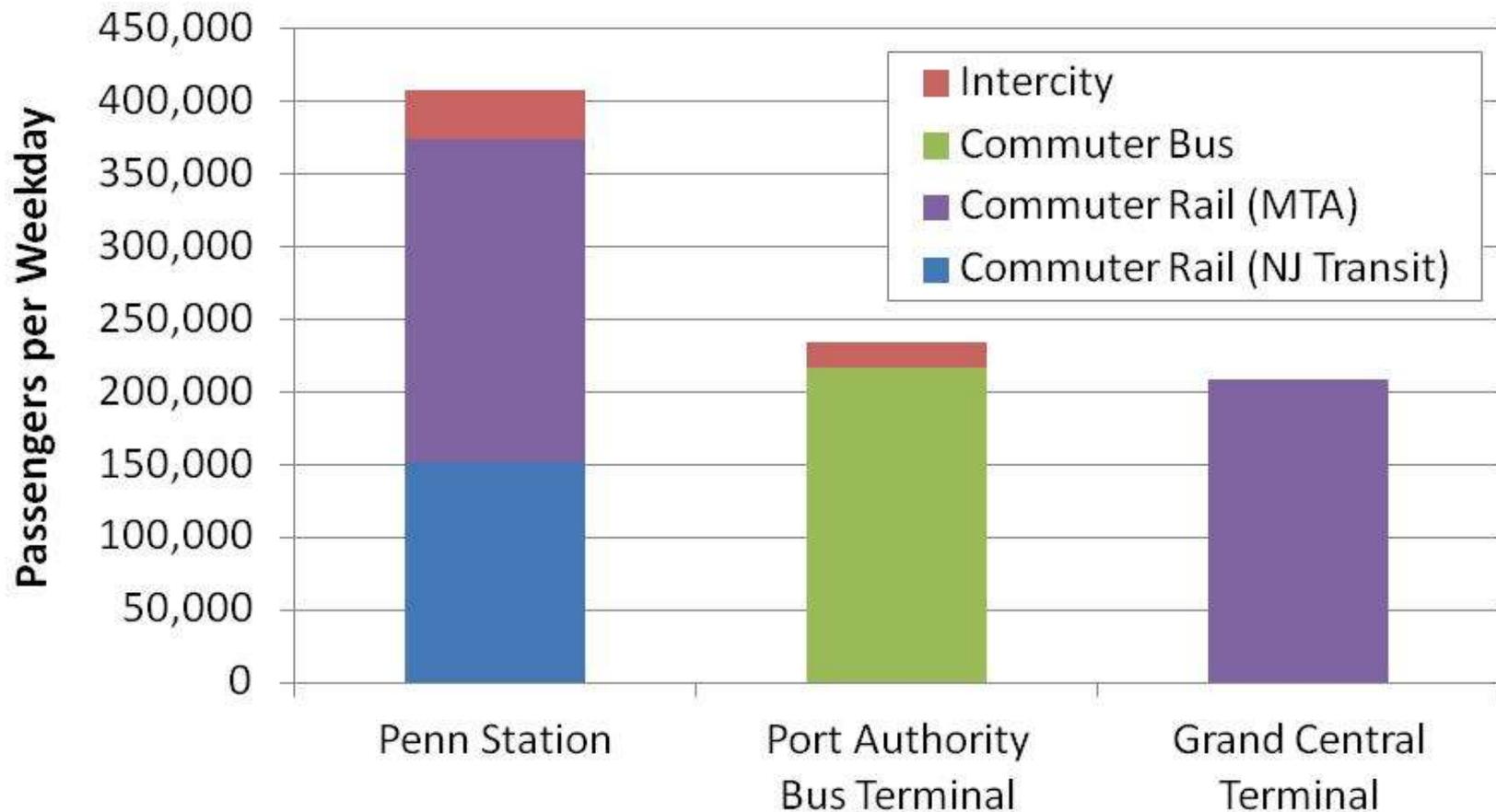
# Growing Demand

## Trans-Hudson Travel, Manhattan below 60<sup>th</sup> St.



Source: NYMTC Hub Bound Travel Report

# Major Manhattan Transit Terminals

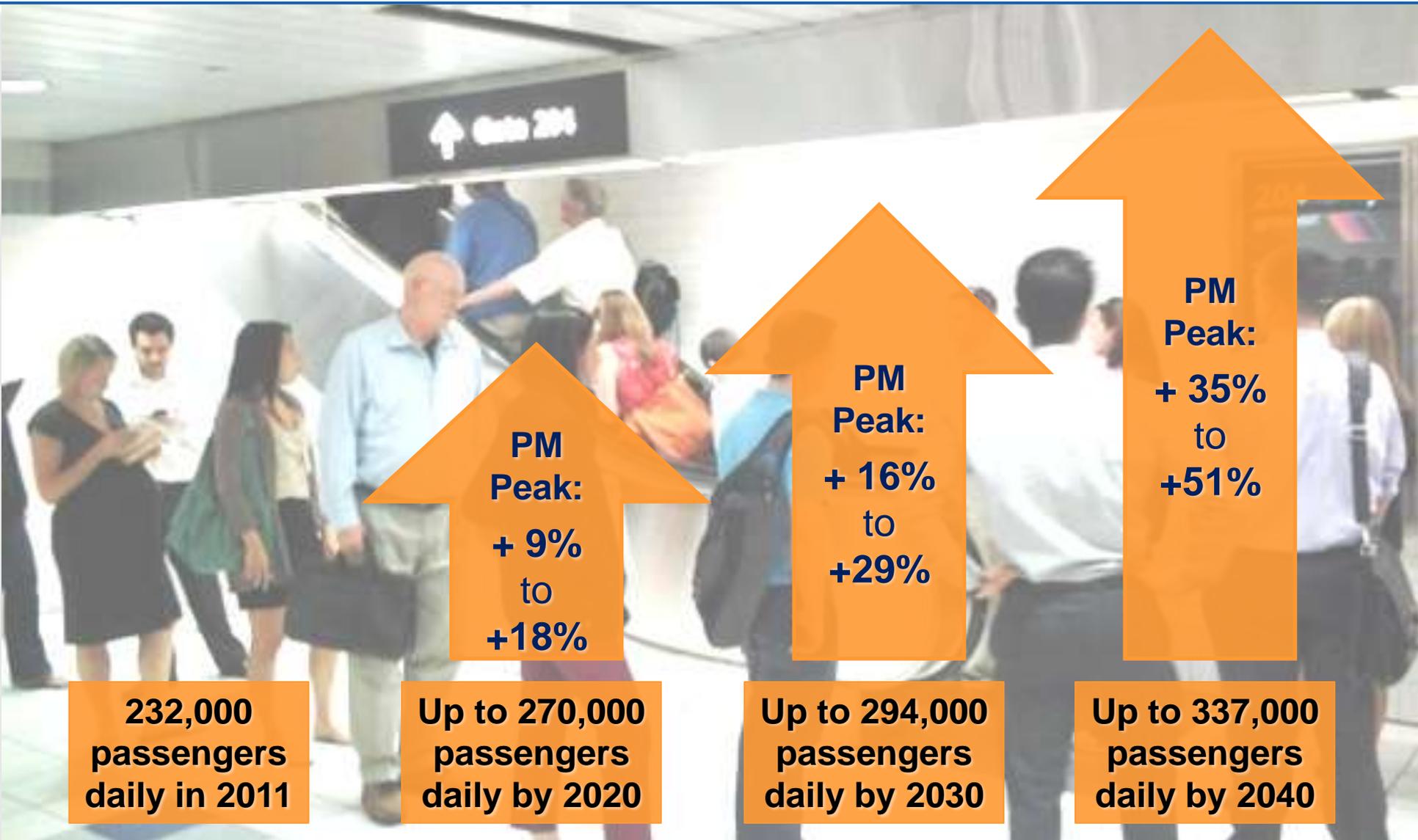


# *Importance of the Trans-Hudson Bus System*

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- Over 115,000 west of Hudson residents commute via bus to jobs in Manhattan.
- They collectively earn \$9.5 billion a year, supporting economic activity equivalent to 3% of NJ's economy.
- More than 8,000 NYC residents commute by bus to jobs west of the Hudson.
- Access to expanding West of Hudson workforce is critical to NYC's competitiveness as an office location.
- The PABT is a resilient regional lifeline when the rail system is disrupted.

# Forecasted PABT Passenger Growth 2011-2040



232,000  
passengers  
daily in 2011

Up to 270,000  
passengers  
daily by 2020

Up to 294,000  
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PM  
Peak:  
+ 9%  
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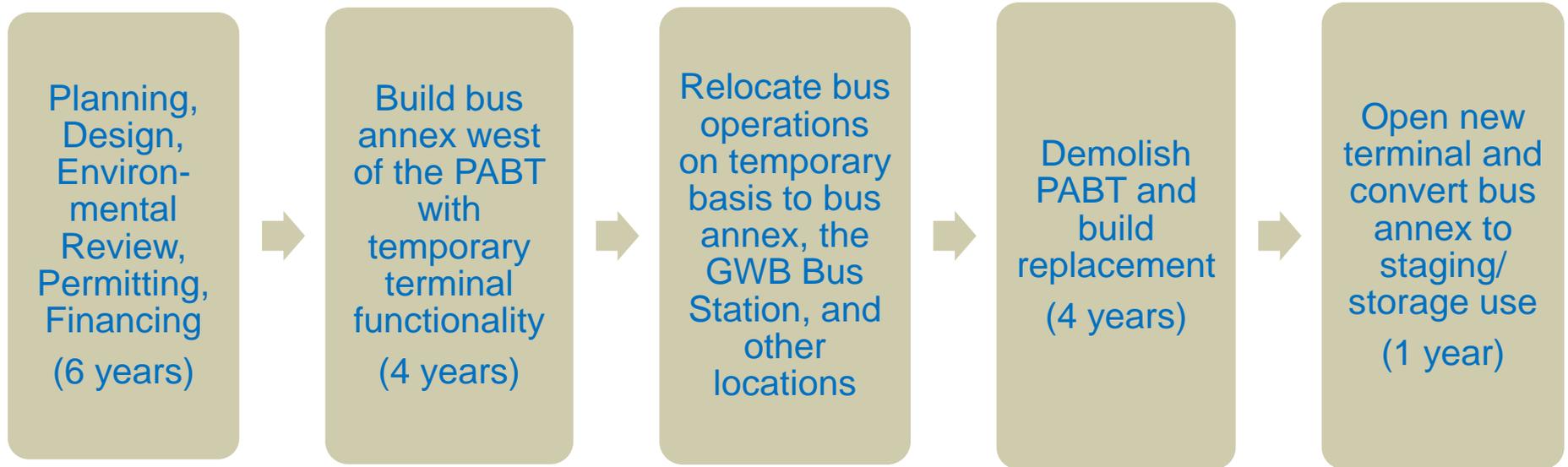
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Peak:  
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to  
+51%

## *Magnitude of New Facilities*

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- 2040 projections indicate up to 42,000 passengers in the PM peak hour, up from 28,000 today. The facility must handle the seating capacity of the Mets' Citi Field ballpark each peak hour.
- 1,000 27-ton buses per hour in the PM peak, up from 770 today. Placed end to end, these buses would stretch over 8½ miles.
- Accommodating these buses requires one of the largest, most complex transit terminals in the country – 5 levels of terminal, ramps, staging, and parking covering 3½ city blocks and bridging streets and active tunnel portals.

# Possible Project Timeline and Staging Approach



15 years to design, approve, finance, and build

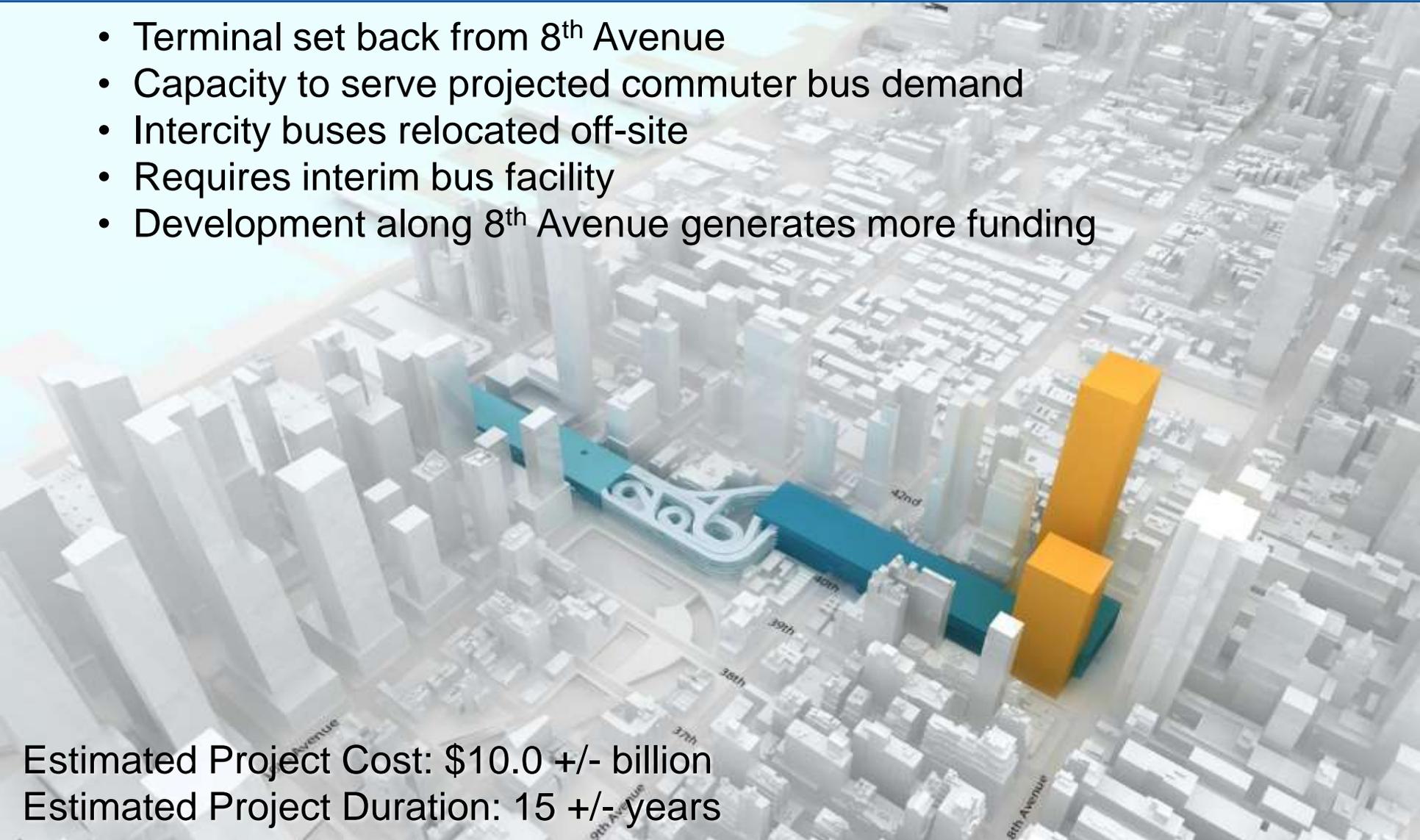
# Concept Review: Concept 1

- Largest terminal – sufficient to serve all projected bus ridership to 2040
- Nearest to subways and employment locations
- Requires interim bus facility
- Least funding from development rights

Estimated Project Cost: \$10.5 +/- billion  
Estimated Project Duration: 15 +/- years

# Concept Review: Concept 2

- Terminal set back from 8<sup>th</sup> Avenue
- Capacity to serve projected commuter bus demand
- Intercity buses relocated off-site
- Requires interim bus facility
- Development along 8<sup>th</sup> Avenue generates more funding



Estimated Project Cost: \$10.0 +/- billion  
Estimated Project Duration: 15 +/- years

# Concept Review: Concept 3

- Terminal moved to west of 9<sup>th</sup> Avenue – longer connection to subways
- Capacity to serve projected commuter bus demand
- Intercity buses relocated off-site
- Does not require interim bus facility
- More funding from development

Estimated Project Cost: \$9.0 +/- billion  
Estimated Project Duration: 13 +/- years

# Concept Review: Concept 4

- Terminal set back from 8<sup>th</sup> Avenue
- Bus staging and storage moved east of 10<sup>th</sup> Av. and south of 39<sup>th</sup> Street
- Capacity to serve projected commuter bus demand
- Intercity buses relocated off-site
- Requires interim bus facility
- More funding from development

Estimated Project Cost: \$10.0 +/- billion  
Estimated Project Duration: 15 +/- years

# Concept Review: Concept 5

- Smaller terminal between 9<sup>th</sup> and 11<sup>th</sup> Avenues
- Bus staging housed within terminal
- Accommodates 73% of current commuter demand (53-59% in 2040)
- Intercity and some commuter buses relocated off-site
- Requires additional facilities at other locations to meet projected demand
- Does not require interim bus facility

Estimated Project Cost: \$7.5 +/- billion  
Estimated Project Duration: 11-12 +/- years

# Concept Summary

	Concept 1	Concept 2	Concept 3	Concept 4	Concept 5
					
<b>Terminal Location and Commute Quality</b>	✓✓✓	✓✓	✓	✓✓	✓
<b>On-site Intercity</b>	Yes	No	No	No	No
<b>Development Opportunities</b>	✓	✓✓	✓✓✓	✓✓✓	✓✓✓
<b>Estimated Total Project Cost</b>	\$10.5 billion	\$10.0 billion	\$9.0 billion	\$10.0 billion	\$7.5 billion
<b>Meets Commuter Passenger Demand</b>	Yes	Yes	Yes	Yes	No
<b>Project Duration (Including 6 year pre-construction period)</b>	15 years	15 years	13 years	15 years	11-12 years

# Total Project Costs – Order of Magnitude

## Bus Facilities (3.7 M sf @ \$1,230/sf pre-escalation)

New Terminal (2.1 M sf) \$2.8 B

Parking and Staging Facility and Ramps (1.6 M sf) \$1.7 B

Escalation \$1.4 B

**Hard Construction Cost** **\$5.9 B**

Planning, Engineering, Legal, Professional \$1.3 B

Financing and Insurance \$1.4 B

**Soft Costs** **\$2.7 B**

**Program Contingency** **\$1.9 B**

**Total Project Cost** **\$10.5 B**

*Construction costs estimated by KPF/PB Joint Venture, Skanska and VJ Associates*

# *Cost Estimation*

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Construction cost estimates account for:

- Unusually heavy gauge of construction
- Phasing plans that keep bus terminal operational at all stages of construction
- Restricted work schedules to maintain Lincoln Tunnel access and egress
- Site limitations
- Escalation to the mid-year of construction
- \$500 million for satellite intercity facility (Concepts 2-5 only)

Soft costs, program contingency, and other factors consistent with Port Authority experience and industry standards.

# Public Transportation Projects of Similar Magnitude

Project		Cost Estimate (Current)	Federal Share	Construction Timeline
Current Regional Projects	WTC Transportation Hub	~\$4 billion	\$2.9 billion	2006 - 2015
	East Side (Rail) Access	\$10.2 billion	\$2.6 billion	2007 - 2022
	Second Avenue Subway (Phase 1)	\$4.5 billion	\$1.3 billion	2007 - 2016
Proposed Regional Projects	Second Avenue Subway (Phase 2)	~ \$4.5 billion	TBD	TBD
	Amtrak's Gateway Project	~ \$15 billion	TBD	TBD
Current National Projects	Washington Metro Dulles Corridor	\$5.7 billion	\$900 million (Phase 1) \$1.9 billion (TIFIA, Phase 2)	2010 - 2018
	LA Purple Line Subway Extension (Phase 1&2)	\$5.4 billion	\$1.3 billion (Phase 1)	2015 - 2023
	Honolulu Transit Corridor	\$5.1 billion	\$1.6 billion	2012 - 2019

Sources: FTA, USDOT, and other government websites

# *Funding*

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- PABT replacement program requires a funding strategy that addresses capital costs and operating losses.
- Funding of new bus facilities requires participation from the Port Authority; local, regional and federal government; and the private sector.
- Decisions about bus facility investments must be part of a comprehensive, multi-modal interstate network strategy.

# *Potential Funding Sources*

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- Port Authority Capital Plan
  - Monetizing Port Authority Development Rights
- Federal Grants and Loans
- Participation by Other Agencies and Localities
- Private Investment

## *Next Steps*

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Constructing a new bus terminal requires broad regional support and robust federal, state, and local participation.

In the next phase, the Port Authority will:

- Discuss alternatives with the community and commuters.
- Engage key stakeholders.
- Study additional alternatives in context of the full range of needs on the multimodal trans-Hudson network.
- Develop a funding strategy for capital and operating costs.

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**THE PORT AUTHORITY** OF NY & NJ

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