MOVING GATEWAY FORWARD
Our Primary Focus

» The Gateway Partners are focusing on the most critical, time-sensitive elements:

» **Portal North Bridge Project**
  » Replacement of the 107-year-old Portal Bridge

» **Hudson Tunnel Project**
  » Two new Hudson River tubes
  » Hudson Yards Concrete Casing - Section 3
  » Rehabilitation of the two existing 107-year-old tubes

» These two projects eliminate the most significant single points-of-failure on the Northeast Corridor between NY and NJ
Hudson Tunnel Project

- New two-tube Hudson River Tunnel
- Hudson Yards Concrete Casing – Section 3
- Rehabilitation of 107-year-old North River Tunnel

» Existing 107-year old North River Tunnel was inundated with saltwater during Superstorm Sandy

» Resiliency, Reliability, & Redundancy
  » New tunnel allows for the rehabilitation of the North River Tunnel without disrupting existing levels of train service
  » New 21st century tunnel creates a more reliable ride for 200,000 people per day, and
  » New tunnel would provide redundant capability and increased operational flexibility for Amtrak and NJ TRANSIT

» Busiest section of the NEC is between Penn Station NY and Newark, NJ
  » 450 trains/day
  » 200,000 passenger trips/day
» The need to maintain existing levels of rail service is critical as it supports intercity, regional, and local mobility and associated economic benefits regionally and nationally.
Deterioration in the Existing North River Tunnel Built in 1910
Corrosion Accelerated by Superstorm Sandy in 2012
Hudson Tunnel Project - Progress Report Submitted to FTA
Summary – Progress Report Available on GatewayProgram.org

» National Environmental Policy Act (NEPA)
  » Completion of Environmental Impact Statement analysis in less than 22 months is a national model for streamlined environmental review
  » Final draft submitted to FRA/USDOT in February 2018
  » Awaiting Record of Decision

» Technical Activities Over the Past Six Months
  » Design and funding for the Hudson Yards Concrete Casing – Section 3
  » 30% design documents submitted to FRA for review
  » RFP for Financial Advisor

» Financial Plan
  » The Project Partners reaffirmed their existing funding commitments documented in the December 2017 submittal

» Grant Applicant & NEPA Project Sponsor
  » The Port Authority has agreed to perform these roles on behalf of the Project Partners for this Project
  » GDC to be strengthened through bi-state legislation to accept Grant Applicant and NEPA Project Sponsor role
Hudson Yards Concrete Casing Overview
To preserve a right-of-way under the Eastern portion of the Hudson Yards Development Project

Construction completed by Amtrak

Concrete Casing successfully preserves right-of-way under newly opened buildings & 11th Avenue
Hudson Yards Concrete Casing – Section 3

- Essential Right-of-Way Preservation under Hudson Yards Development Project

Relocate LIRR utilities within the Long Island Rail Road (LIRR) Emergency Services Building (ESB), and the ESB itself, out of the construction area

- Scope: Utility Relocation
- Cost: $25 M
  - Port Authority: $12.5M
  - Amtrak: $12.5M

Contract Award and Construction Start for LIRR ESB – Fall 2018
MOVING GATEWAY FORWARD
July 31, 2018

Hudson Tunnel Project
Design Overview

Phil Rice, Gateway Trans-Hudson Partnership
Project Purpose

» Preserve current functionality of existing Amtrak and NJ Transit rail services by repairing the North River Tunnel

» Strengthen Northeast Corridor (NEC) resiliency to support reliable service by providing redundant capability

» Achieve improvements while maintaining uninterrupted service
Superstorm Sandy Impacts

» Superstorm Sandy forced ~4-day closure of the NEC:
  » Inundated substations
  » Inundated East River and Hudson River Tunnel systems

» Ongoing damage to internal components requires complete renewal of inundated tunnels

» Tunnel reconstruction requires closure of each tube for outages of ~2 years

» Rebuilding of the existing Hudson River Tunnel cannot begin until the new Hudson Tunnel is built and commissioned
Project Overview: Preferred Alternative vs. ARC Alignment
Project Overview: Preferred Alternative

- Proposed New Tunnel Portal
- Existing North River Tunnel
- Proposed Ventilation Facility Site
- Hudson Tunnel Project Preferred Alternative
- Proposed Ventilation Facility Site
- Proposed Ventilation Facility Site
- Proposed Ventilation Facility Site
Tunnel Profile
Hudson Tunnel Profile Compared to ARC Project

Gateway Program Development Corporation – Industry Information Session
New Jersey Surface Alignment
Tunneling Through the Palisades
Palisades Tunnel

Tunnel Portal

Tonnelle Avenue

Hoboken Shaft
Typical Bored Tunnel Cross Section

Tunnel Ventilation Plenum

Composite Static Outline

Overhead Catenary System (OCS)

Typ. 20’-28’

Emergency Evacuation Route along High Bench

High Bench Comms and Signals Conduits

C & S and Electric Traction Power, Ventilation Power Conduits in Low Bench

Third Rail for Emergency Service

Tunnel Ventilation Plenum

Low Bench Railroad Personnel Clearance Envelope

Track T4

Track T1

Gateway Program Development Corporation – Industry Information Session
Ventilation Plan

Gateway Program Development Corporation – Industry Information Session
Hudson River Tunnel

Gateway Program Development Corporation – Industry Information Session
Profile View: Low Cover Area

MLLW

Ground Improvement

Hudson Tunnel Profile

Gateway Program Development Corporation – Industry Information Session
Tunneling from Manhattan Bulkhead to 12th Avenue Shaft

Ground Improvement

12th Avenue Shaft Location

12th Avenue Fan Plant Staging Area

Manhattan Bulkhead

Gateway Program Development Corporation – Industry Information Session
Tunneling Through Manhattan Bulkhead

** APPROXIMATE TWIN TUNNEL PROFILE **

- Tunnel Crown Elev. 262
- Bulkhead Base Elev. 255
- Rip Rap Bulkhead Approximate Width – 150ft
Tunnel Plan and Profile: Manhattan
450 West 33rd Street Building: Plan View

Existing Amtrak Louver Location

Proposed New Tunnel Vent Fans and Associated Electrical Rooms Under Building
A-Yard Under 450 W. 33rd Street Building
A-Yard Connection (West of Penn Station NY)
Proposed Track Level Plan
A-Yard Connection (West of Penn Station NY)
Proposed Track Level Plan - New Column Supports
### Contract Components

**Subject to Change**

<table>
<thead>
<tr>
<th>C01: NJ Surface Alignment</th>
<th>C02: Tonnelle Avenue Overhead Bridge</th>
<th>C03: Palisades Tunnels</th>
<th>C04: Palisades Tunnels Internal Concrete</th>
<th>C05: Hudson River Tunnels</th>
<th>C06: Hudson River Tunnels Internal Concrete</th>
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</thead>
<tbody>
<tr>
<td>- Modification of East Abutment of County Road Bridge</td>
<td>- Retaining Wall Along South-side of Sub 42</td>
<td>- Palisades Portal Open Cut Excavation</td>
<td>- Tunnel Internal Concrete</td>
<td>- Tunnel Internal Concrete</td>
<td>- Tunnel Internal Concrete</td>
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<tr>
<td>- New Structure for Secaucus Road Bridge</td>
<td>- Repair of Wing Walls and Abutments as Required</td>
<td>- Hoboken Shaft Excavation</td>
<td>- MEP in Tunnels (Invert Drainage, Conducts in Benches)</td>
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<tr>
<td>- Retaining Walls and Concrete Viaduct Structures</td>
<td>- Installation of Roadway Deck</td>
<td>- TBM Tunneling and Tunnel Lining</td>
<td>- Ventilation Duct Wall (Precast Wall) in TBM Tunnels</td>
<td>- Ventilation Duct Wall (Precast Wall) in TBM Tunnels</td>
<td>- Ventilation Duct Wall (Precast Wall) in TBM Tunnels</td>
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<tr>
<td>- Drainage Structures (Box Culverts/Pipe Extensions)</td>
<td>- Traffic Signal on Tonnelle Avenue North of Construction</td>
<td>- TBM Electrical Power Substation Procurement &amp; Setup</td>
<td>- Tonnelle Avenue to Tunnel Portal Retaining Structure &amp; Building</td>
<td>- Tonnelle Avenue to Tunnel Portal Retaining Structure &amp; Building</td>
<td>- Tonnelle Avenue to Tunnel Portal Retaining Structure &amp; Building</td>
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<tr>
<td>- Foundations and Platforms for Signals and Communications Bungalows, Foundations for Catenary Poles</td>
<td>- Ductbank and Manholes for Railroad Systems Contract C09</td>
<td></td>
<td>- Trackwork from Tonnelle Avenue to Hoboken Shaft</td>
<td></td>
<td>- Trackwork from Hoboken Shaft to 12th Avenue Shaft</td>
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<tr>
<td>- Grading Of The Subgrade under Tonnelle Avenue Overhead Bridge</td>
<td>- Hoboken Fan Plant Construction (Below Grade &amp; Above Grade)</td>
<td>- Hoboken Fan Plant Building with MEP &amp; Finishes</td>
<td>- Trackwork from Hoboken Shaft to 12th Avenue Shaft</td>
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### Contract Components

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<tbody>
<tr>
<td>• 12th Avenue Shaft SOE, Ground Improvement &amp; Excavation</td>
<td>• 12th Avenue Fan Plant Construction including Plenum Excavation and Structure, Ventilation Shaft Internal Concrete</td>
<td>• Traction Power Substation Equipment And Distribution</td>
<td>• Provision, Installation and Testing of all Fan Plant Equipment</td>
<td>• 10th Avenue Cut and Cover SOE, Excavation and Concrete</td>
<td>• Flagging Adjacent to NEC</td>
<td>• Flagging Protection for Underpinning &amp; Fan Plant Construction</td>
</tr>
<tr>
<td>• SEM Tunnels Under 12th Avenue; Ground Improvement, Excavation, Support of Utilities &amp; Backfill</td>
<td>• Tunnel Internal Concrete from 12th Avenue to 10th Avenue</td>
<td>• Ancillary Devices (Switch Heaters, Remote Terminal Units, Sectionalizing Switches, Etc.)</td>
<td>• Permanent Power Substations</td>
<td>• Brookfield Building Underpinning</td>
<td>• New Signals &amp; Communications Connections</td>
<td>• New Signals &amp; Communications Connections</td>
</tr>
<tr>
<td>• SEM Tunnels Under 30th Street; Ground Improvement, Utility Relocation, Excavation &amp; Concrete Lining</td>
<td>• Fan Plant Building MEP &amp; Finishes</td>
<td>• Tunnel Lighting, OCS, and Emergency Communications</td>
<td>• Emergency Power Generators</td>
<td>• A-Yard Fan Plant Construction</td>
<td>• New Special Trackwork at Allied Interlocking</td>
<td>• Removal &amp; Reinstallation of Empire Line Track</td>
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<tr>
<td>• Manhattan Bulkhead Mitigations</td>
<td>• Trackwork from 12th Avenue to 10th Avenue</td>
<td>• Catenary Poles and Appurtenances</td>
<td>• Fire Protection and Detection Equipment</td>
<td>• Trackwork Connection to A-Yard from 10th Avenue</td>
<td>• Modification of Existing Catenary Support Structures</td>
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<tr>
<td></td>
<td>• Trackwork Allied to Tunnel Portal (Except for Special Trackwork)</td>
<td>• SCADA Control Systems for Fan Plants</td>
<td>• Sump Pumps and Fire Pumps</td>
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<td>• Cut-Over &amp; Connection of New Catenary System</td>
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<td>• Modification of I-Ladder</td>
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*Subject to Change*
MOVING GATEWAY FORWARD
Hudson Tunnel Project Financial Plan

» Hudson River Tunnel and Hudson Yards Concrete Casing
  » Most time sensitive elements
  » Construction cost: $11.1 billion
  » Local Commitments Made:
    » $1.9 billion – NJ TRANSIT
    » $1.9 billion – Port Authority of NY & NJ
    » $1.75 billion – State of NY

» Rehabilitation of North River Tunnel
  » Construction cost: $1.6 billion

Based on 10% design and as per the Project Partners’ Financial Plan submittal in December 2017
Potential Commercial Building Blocks

Project Partners

<table>
<thead>
<tr>
<th>Cash Sources</th>
<th>Debit</th>
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<tbody>
<tr>
<td>FRA/Amtrak Contributions</td>
<td>RIFF Loan(s)</td>
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<tr>
<td>FTA Grants</td>
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Gateway Program Development Corporation (GDC)

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<tr>
<th>Loan Payment Streams</th>
<th>Design &amp; Construction</th>
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<tbody>
<tr>
<td>PANYNJ</td>
<td>Contractor(s)</td>
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<td>State of NY</td>
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<tr>
<td>NJT/State of NJ</td>
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<tr>
<td>Tunnel Rehab</td>
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<th>O&amp;M</th>
<th>Lifecycle Maintenance</th>
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<tr>
<td>Amtrak/ NJT</td>
<td>Amtrak/ NJT</td>
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<tr>
<td>Lifecycle Contractor</td>
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</tbody>
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Tunnel Ancillary Revenue
RFI PURPOSE

» To receive additional feedback based on advanced preliminary engineering since GDC’s August 2017 RFI

» To solicit additional feedback from the market on certain important topics for progressing risk allocation, contract packaging activities, and ultimately procurement methodology

RFI RESPONSES – Due August 21, 2018

» Any firm who responds to this RFI is not precluded from participating in future procurements for the Gateway Program

» Respondents may indicate in their response if they wish to have a 1-on-1 meeting.
Request for Information – Question Background
To Help Inform Firms as They Prepare Responses

EARLY WORKS
» Feedback is welcome on where scarce resources can be most beneficially deployed for early work

ANCILLARY REVENUE
» GDC is open to ancillary revenue opportunities that do not interfere with the primary purpose – rail transport
» GDC seeks market feedback on what concession model it should use to maximize ancillary revenue
» Also, how best to ensure tunnel design does not preclude such revenue opportunities

CIVIL WORKS LIFECYCLE MAINTENANCE
» GDC wants to ensure the cost of these civil works over their useful life achieves best value for money
» Alignment of interest between those building Gateway, and those conducting lifecycle maintenance, is crucial
Request for Information – Question Background
To Help Inform Firms as They Prepare Responses

PROCUREMENT
» GDC intends to use procurement method(s) that deliver best value for money
» Priorities include (in no particular order):
  » Optimal allocation of risk
  » Reduction in cost
  » Expedited completion
  » Cost and schedule certainty
  » Encouraging innovation in design and construction methods
  » Creditworthy bids

GEOTECHNICAL INFORMATION
» Geotechnical risk allocation is one of the key issues being considered by GDC and its partners
» We are seeking to allocate geotechnical risk in a manner that achieves the best value for money

CONTRACTING
» In determining procurement, GDC will pursue a contract packaging strategy that achieves the best balance of:
  » Maximizing competition; and
  » Minimizing interface risk
Industry Sounding – Timeline

RFI Available
GatewayProgram.org/WorkWithUs

RFI Responses Due: August 21, 2018

One-on-One Meetings
On-Going: Fall 2018

If your firm would like a one-on-one meeting with Project Partner Staff, please make it clear in your RFI response.