Gall Zeidler Consultants
Geotechnics | Tunnel Design | Engineering

The Gateway Program: The Hudson Tunnel Project
Gateway Development Commission and Partner Agencies

Location: New Jersey – New York

Date: 2018 - Present

Structure: Railway Tunnels, Shafts, Bridges, Viaduct, Service Buildings

Length: Total: 4.5 mi (7.2 km); Tunnels: 2.5 mi (4 km)

Cross-Section: 25 ft (7.6 m) finished ID

Geology: Palisades Diabase, Soft alluvial Soils including organics, Manhattan Schist

Cost: $16 Billion (2024 estimate)

Client: MPA Delivery Partners (a Mace-Parsons-Arcadis Joint Venture); Hill International

Owner: Gateway Development Commission (GDC) and Partner Agencies (Amtrak, New Jersey Transit, and Port Authority of New York and New Jersey)

Project Management, Construction Management, and Tunnelling and Underground Engineering Services:

The Gateway Program will deliver critical rail infrastructure projects between Newark, New Jersey and Penn Station in New York City, along the Northeast Corridor (NEC). The NEC is the most heavily used passenger rail line in the U.S., with more than 2,000 trains per day carrying approximately 800,000 daily passenger trips across eight states and Washington D.C. The largest and most complex project included in the Gateway Program is the Hudson Tunnel Project (HTP).

The HTP includes two main components: the construction of a new two-track Hudson River rail tunnel connecting the National Railroad Passenger Corporation's (AMTRAK) existing NEC tracks east of Frank R. Lautenberg Station in Secaucus, New Jersey, to the existing rail complex at Penn Station New York (PSNY), and the rehabilitation of the century-old existing North River Tunnel, which incurred serious damage during Superstorm Sandy in 2012. The two new tunnels will consist of twin hard rock TBM tunnels driven through the Palisades, twin shallow soft ground TBM tunnels under the Hudson River, and shallow SEM tunnels on the New York side of the alignment. The Hudson River and Manhattan Tunnels provide challenging design issues as a result of the shallow cover and poor ground conditions along the Hudson River and the dense urban environment on the Manhattan side of the alignment.

The Gateway Program is currently being overseen by the Gateway Development Commission (GDC). In addition to providing funding for the project, Amtrak, New Jersey Transit (NJT), and the Port Authority of New York and New Jersey (PANYNJ) are acting as partner agencies and supporting the project by overseeing various construction aspects.

Gall Zeidler Consultants (GZ) has been involved in the HTP and greater Gateway Program since 2018. Initially, GZ provided technical expertise, mainly related to underground works, to support the Program Management Support Services (PMSS) which Hill International provided for Amtrak. The PMSS that GZ provided included, reviewing, commenting, and providing advice on: Contract Packaging and Procurement Strategies, Cost Estimates, Construction Schedules, the Preliminary Engineering Design, Constructability issues, the Geotechnical Investigation Program, the Instrumentation and Monitoring Program, Ground Improvement Techniques, and on the preparation of Bid Documents.

In 2024, GZ, as part of the MPA Delivery Partner team (a Joint Venture comprised of Mace, Parsons, and Arcadis), was selected to act as the Delivery Partner (DP) for the HTP. The role of the HTP DP is to provide project wide Project Management (PM), Construction Management (CM), and engineering services to the GDC and its partner agencies. GZ is acting as tunnel experts for the DP team and is providing staff that is working directly under the GDC itself, Amtrak, and the PANYNJ. In this role, GZ is providing Resident Engineering and CM services for contracts that are under construction, Bid review and CM services for Contracts that are in procurement, and technical review services for contracts that are still in design. GZ is providing project wide PM services to the GDC that involves interface management, schedule tracking and review and providing contract packaging advice and oversight. Finally, GZ is supporting the digital transformation of the project and is advising and supporting the project's BIM adoption.

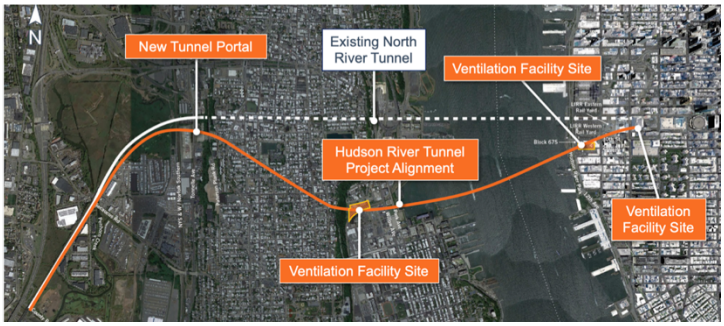

Figure 1. Proposed alignment of the new Hudson River Tunnel and approach structures as well as the location of the existing tunnel. (Courtesy of GDC)