

THE RESILIENCE DART

Parsons Brinckerhoff Resilience Disaster Awareness Report

September 26, 2014

The Parsons Brinckerhoff Resilience DART (Disaster Awareness Report) summarizes key developments related to resilience planning and design across the US, including the region affected by Superstorm Sandy, and highlights relevant projects in which the firm is engaged.

Parsons Brinckerhoff's Resilience Information Center: A website established by Parsons Brinckerhoff allows users to track congressional, regulatory, and federal agency funding developments pertaining to Superstorm Sandy and resilience programs. The site provides links to the final Sandy bill, notices of funding availability and funding allocations, Federal Register notices, fact sheets on agency Emergency Relief programs, testimony from Sandy implementation hearings, etc. The website can be accessed via the following link:

http://www.pbtransportationupdate.com/legislation/hurricane_sandy_supplemental_funding.aspx

State of Affairs:

Washington, DC/National

ACTION POST-SANDY: The Federal Transit Administration (FTA) has awarded \$3.6 billion for resilience projects to transportation agencies throughout the Northeast, including NJ TRANSIT, the Metropolitan Transportation Authority, The Port Authority of New York & New Jersey, the Southeastern Pennsylvania Transportation Authority, and the Massachusetts Bay Transportation Authority (links below).

http://www.progressiverailroading.com/passenger_rail/news/NJ-Transit-PANYNJ-receive-15-billion-in-federal-Hurricane-Sandy-resiliency-funding-41910

http://www.crainsnewyork.com/article/20140917/REAL_ESTATE/140919875/feds-give-1-9b-for-sandy-related-transit-upgrades

ACTION POST-SANDY: FEMA has released \$1.6 billion in aid for recovery efforts on Long Island, including repairs and upgrades to power substations and pump stations (link below).

<http://www.longislandpress.com/2014/09/20/fema-delivers-1-6b-to-long-island-for-sandy-damage/>

ACTION POST-SANDY: The US Department of Housing and Urban Development has announced a National Disaster Resilience Competition, an expansion of the Rebuild by Design model developed after Sandy. Award announcements are expected in late 2015 (link below).

<http://www.lohud.com/story/news/local/2014/09/17/superstorm-sandy-hud-competition-recovery-resiliency-grants/15776823/>

ACTION POST-SANDY: Flooding from Sandy worsened structural problems in the 104-year-old Hudson River tunnels, and they may have to be closed for a year for rebuilding (link below).

<http://www.app.com/story/news/traffic/2014/09/01/sandy-amtrak-tunnels/14928539/>

ACTION POST-SANDY: The American Society of Civil Engineers is advocating for the development of a national plan to pay for infrastructure maintenance and upgrades and manage flood risks, including greater use of natural solutions (link below).

<http://www.insurancejournal.com/news/national/2014/09/25/341378.htm>

ACTION POST-SANDY: A web-based interactive timeline examines the impact of Hurricanes Katrina and Sandy on affected communities, and details the responses to both storms (link below).

<http://nj1015.com/katrinasandy-web-timeline-study-is-launched/>

ACTION POST-SANDY: The “sharing economy”—using technology and social media to promote resource sharing—can be a means to improve emergency response and recovery, and new federal programs are helping to highlight the concept (link below).

<http://www.emergencymgmt.com/disaster/How-the-Sharing-Economy-Is-Changing-Disaster-Recovery.html>

Regional (New York/New Jersey/Connecticut/Boston)

ACTION POST-SANDY: Federal grants provided after Sandy will aid in the completion of a 13-year initiative to map every building along New York City’s waterfront, in an effort to promote resilience (link below).

<http://therealdeal.com/blog/2014/08/28/after-13-years-city-has-mapped-almost-all-waterfront-buildings/>

ACTION POST-SANDY: New York City Mayor Bill de Blasio referred to Sandy in his remarks at the United Nations Climate Summit, and highlighted the city’s efforts to reduce greenhouse gas emissions and improve energy efficiency in city-owned buildings (links below).

<http://www1.nyc.gov/office-of-the-mayor/news/453-14/transcript-mayor-de-blasio-delivers-remarks-united-nations-climate-summit>

<http://www1.nyc.gov/office-of-the-mayor/news/451-14/mayor-de-blasio-commits-80-percent-reduction-greenhouse-gas-emissions-2050-starting-with#/0>

ACTION POST-SANDY: New York City wants to quadruple the pace of rebuilding homes damaged by Sandy by hiring more contractors (links below).

<http://www.nydailynews.com/new-york/de-blasio-administration-moving-ramp-hurricane-sandy-home-repairs-article-1.1945068>

<http://therealdeal.com/blog/2014/09/19/city-to-hire-dozens-more-contractors-for-sandy-rebuilding/>

ACTION POST-SANDY: A post-Sandy resilience program will provide an updated Staten Island Ferry fleet, upgraded landings, and floodproofed terminals (link below).

http://www.silive.com/news/index.ssf/2014/09/staten_island_ferry_fleet_to_g.html

ACTION POST-SANDY: New York State has announced NY-Sun awards for large-scale solar projects as part of its commitment to a clean energy economy (link below).

<http://www.governor.ny.gov/press/09262014-solar-projects-funding>

ACTION POST-SANDY: New York State has announced a \$2.8 million plan to rebuild the Sea Gate beach bulkhead in New York City and fortify Coney Island; in addition, federal funding is being provided to repair and protect the Coney Island Houses public housing development, a program that will serve as a model for repairs and mitigation at other public housing developments (links below).

<http://www.nydailynews.com/new-york/gov-cuomo-announces-sea-gate-sandy-repairs-article-1.1936895>

[http://insurancenewsnet.com/oarticle/2014/09/06/mayor-de-blasio-senator-schumer-announce-\\$108-million-in-federal-funds-to-repai-a-552283.html](http://insurancenewsnet.com/oarticle/2014/09/06/mayor-de-blasio-senator-schumer-announce-$108-million-in-federal-funds-to-repai-a-552283.html)

ACTION POST-SANDY: Service on the R subway line in New York City has been restored after a shutdown for Sandy repairs, but a number of other tubes still need attention (links below).

<http://www.capitalnewyork.com/article/albany/2014/09/8552589/one-sandy-damaged-subway-tube-down-eight-go>

<http://www.crainsnewyork.com/article/20140915/TRANSPORTATION/140919928/r-train-tunnel-service-restored-two-years-later>

ACTION POST-SANDY: A new study finds that many hospitals faced critical challenges during Sandy's strike because they were not adequately prepared for the storm (links below).

<http://www.crescent-news.com/health/2014/09/21/hospitals-struggled-during-sandy>

<http://oig.hhs.gov/oei/reports/oei-06-13-00260.pdf>

Parsons Brinckerhoff Activities:

Response, Recovery and Mitigation Projects

NEW: Recently awarded contracts **

RESILIENCE PLANNING

REBUILD BY DESIGN Competition: The SCAPE/Landscape Architecture's "Living Breakwaters" proposal, with Parsons Brinckerhoff as lead engineers and planners, is one of six winning proposals announced in HUD's REBUILD BY DESIGN Competition. The project, which focuses on building out the entire Tottenville section of Staten Island, will reduce risk, revive ecologies, and connect educators and students to the shoreline, inspiring a new generation of harbor stewards and a more resilient region. The in-water solution will reduce wave action and erosion, lowering risk from heavy storms through breakwaters with "reef street" micropockets of habitat complexity to host finfish, shellfish, and lobsters. The system was modeled to examine how and where communities can be protected most effectively. This living infrastructure will be paired with social resilience frameworks in adjacent neighborhoods. Through the Billion Oyster Project and an associated network of programmed water hubs, local schools will be empowered with recreation, education, and access to the water.

New York Rising (NY Rising) Community Reconstruction Program for New York State: The NY Rising program provides additional rebuilding and revitalization assistance to communities severely damaged by Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee. It empowers communities to prepare locally-driven aimed at recovery and long-term resilience. Funded from NY State's allocation of Community Development Block Grants for Disaster Recovery (CDBG-DR), the program is supporting the creation of Community Reconstruction plans in 50 community planning areas across the state. Consultant teams were matched with communities to support each planning committee in crafting their plan. HR&A/Parsons Brinckerhoff was matched with Lower Manhattan, Red Hook, East and West Rockaway, Breezy Point, Howard Beach, and Broad Channel.

New York City Special Initiative for Rebuilding and Resiliency (SIRR): Parsons Brinckerhoff served as lead coastal protection consultant for New York City's "A Stronger, More Resilient New York" report, providing the SIRR team with planning and engineering products that led to 37 of the nearly 250 initiatives that drive the NYC resilience strategy. Parsons Brinckerhoff was also lead author for the transportation chapter.

Consultant Services to Investigate Existing Flood Mitigation/Resilience Systems Adaptable to the New York City Transit System "Worldwide Study": A Parsons Brinckerhoff JV team researched and reported on mitigation/resilience systems for possible use by New York City Transit, based on existing systems in use worldwide.

RESILIENCE CONSULTING

Federal Transit Administration (FTA) Resiliency Grant Application Support: Parsons Brinckerhoff supported applications from the Long Island Rail Road, Connecticut Department of Transportation, MTA New York City Transit, NJ TRANSIT, PATH, and the Moynihan Station Development Corporation for FTA Resiliency Grants aimed at protecting public transportation systems in areas affected by Sandy.

New York City Economic Development Corporation (NYCEDC) Business Loan and Grant Program: Parsons Brinckerhoff provided the NYCEDC with technical guidance regarding the level of environmental review required for its Business Loan and Grant Program, which provides financial assistance to New York City businesses impacted by Sandy. The firm also prepared the environmental documentation necessary to obtain environmental clearance from the US Department of Housing and Urban Development (HUD).

RESILIENCE DESIGN

****Staten Island (Great Kills Harbor) Offshore Breakwater System Feasibility Study:* Parsons Brinckerhoff partnered on the Ocean and Coastal Consultants (OCC)/ SCAPE Team and assisted the New England Interstate Pollution Control Commission (NEIWPC) to fulfill several targets of the Estuary Action Agenda, and meet the needs of New York City, in the pursuit of offshore breakwaters in Great Kills Harbor to maximize storm protection and marine habitat value.

New York State Department of Transportation (NYSDOT) Ocean Parkway Preliminary Coastal Restoration: Parsons Brinckerhoff provided review, consultation, and emergency preparation of civil/environmental documents to restore the washed-out roadway after Sandy, with a focus on coastal replenishment and subsurface stabilization.

Town of East Lyme, Connecticut: Parsons Brinckerhoff provided design for reconstruction of the Niantic Boardwalk in East Lyme, CT after Sandy's strike.

TRANSIT RESILIENCE

Port Authority of New York and New Jersey (PANYNJ) and PATH On-Calls for Architectural and Engineering Services for the Design of Federally Funded Superstorm Sandy Related Repair and Resilience Projects: Parsons Brinckerhoff is one of several firms providing on-call design services for federally funded repair/resilience projects.

NJ TRANSIT Northeast Corridor Initiatives between DOCK 8.5 and SWIFT 7.2, New Jersey: Parsons Brinckerhoff provided coordination between multiple agencies who are individually undertaking several project initiatives along the Northeast Corridor, to ensure that these separate but interrelated projects by NJ TRANSIT, Amtrak, and PANYNJ will be operationally feasible and coordinated during construction. Deliverables include Mapping and Project Definition Reports with Preliminary Alignments and Environmental Investigation Reports for the Westbound Waterfront Connection and Harrison-Kingsland Branch, addressing NJ TRANSIT's current and future operational and resilience needs with respect to planned or proposed projects in the area between DOCK and SWIFT Interlockings.

New York City Transit (NYCT) On-Call for Superstorm Sandy Related Repairs and Resilience Projects and Miscellaneous Construction: Parsons Brinckerhoff is one of several firms chosen to provide on-call design, construction management, and inspection services for federally funded repair/resilience projects.

Under a previously owned NYCT On-Call Contract, the Parsons Brinckerhoff JV Team was awarded several projects for repair and flood mitigation/resilience design for the transit systems' critical assets. Other projects in addition to the Worldwide Study include:

- *Architectural/Engineering Design for Repair and Feasibility Study for Flood Mitigation/Resilience at Montague, Clark Street and Canarsie Tubes:* The Parsons Brinckerhoff JV team is performing field inspections survey and final design for repair and replacement of equipment and facilities implemented prior to the 2013 hurricane season, and designing solutions for subsequent seasons.
- *Alternative Duct Bank Demolition and Construction at Montague Tube:* The Montague Tube is an under-river tube connecting Whitehall Street Station in Manhattan and Court Street Station in Brooklyn. Parsons Brinckerhoff/Parsons was chosen to investigate alternatives to demolish and rebuild duct banks.

- *NYCT Structural Integrity Assessment - Tubes and Interior Structures:* The Parsons Brinckerhoff JV team is assessing structural damage using non-destructive methods such as ground penetrating radar and infrared scanning, and providing an assessment report of the Montague, Canarsie and Greenpoint tunnels.
- *Rehabilitation and Flood Mitigation/Resilience at South Ferry Station (IRT):* The Parsons Brinckerhoff/Parsons Team worked with NYCT to prepare bid packages for the work needed to restore South Ferry Station to its pre-Sandy condition, reintroduce service, and prevent future flooding from storms.
- *Flood Mitigation Feasibility Study, St. George Terminal Yard and Clifton Yard/Shop Staten Island, New York:* The Parsons Brinckerhoff JV Team is performing flood mitigation measures for the yards and adjoining tunnel sections. The aim is to protect the yard and tunnel from flooding that may be caused by a Nor'easter, heavy rainfall and /or storm surges from up to a category 2 hurricane, and high tides.
- *Flood Mitigation Feasibility Study, 148th Street and 207th Street Yards, New York:* The Parsons Brinckerhoff JV team is performing flood mitigation measures for the yards and adjoining tunnel sections to protect the yard and tunnel from flooding.

Geotechnical/Tunnel Design for Port Newark Flood Resilience: Parsons Brinckerhoff is performing engineering design and construction support services for the Port Authority of New York & New Jersey (PANYNJ) Port Newark Flood Resiliency Program. The work involves design of retaining walls, stop logs and other barrier systems.

Geotechnical/Tunnel Design for PATH Flood Resiliency: Parsons Brinckerhoff is providing geotechnical and tunnel design services for the PANYNJ PATH Flood Resiliency Program. Work is being performed for PATH's Harrison Car Maintenance Facility and for both the Hoboken and Exchange Place PATH stations.

NJ TRANSIT Westbound Waterfront Connection: Feasibility study, preliminary engineering and final design for a flyover that will allow the easy movement of trains from the Hoboken and Meadows Maintenance Complex yards prior to an event to the safe harbor yards.

NJ TRANSIT Post-Sandy Recovery: Flooding of the Passaic River in Newark during Sandy caused flooding of the tunnel areas near Newark Penn Station. Visual assessments of electrical power, tunnel ventilation, associated instrumentation and control equipment were provided along with mitigation recommendations.

NJ TRANSIT Flood Mitigation at Newark Light Rail and Secaucus Junction: Supporting development of flood mitigation alternative design concepts for the Newark Light Rail and Secaucus Junction stations.

Long Island Railroad (LIRR) Westside and Long Island City Flood Study: Parsons Brinckerhoff worked on a detailed study to analyze Sandy's impact in rail yards, and develop mitigation solutions.

TRANSPORTATION RESILIENCE

Genesee-Finger Lakes Regional Critical Transportation Infrastructure Vulnerability Assessment, Rochester, NY: This project will produce a regional plan that will allow the Genesee Transportation Council and its member agencies to strengthen the emphasis on resilience considerations in the regional transportation planning process.

Marine Transportation System Planning, Management/Beneficial Use/Sampling/Testing/Permitting of Dredged Material, and Maritime Engineering and Support Services Planning for New Jersey Department of Transportation, New Jersey: Supporting NJDOT's Office of Maritime Resources with work that may eventually include environmental and coastal engineering, dredging and dredged-material management planning and analysis, financial and economic analysis, marine surveying, data collection and analysis, biological surveying, and public & stakeholder involvement and coordination.

New York State Boat Channel Emergency Maintenance Dredging and Robert Moses Park Beach Fill: Working with the New York State Office of Parks and Recreation, Parsons Brinckerhoff provided services on a project to dredge the channel to 12 feet and use the material for beach fill.

New Jersey Department of Transportation (NJDOT): Route 35 Bridge over Cheesequake Creek, Sayreville Borough and Old Bridge Township, Middlesex, NJ: Parsons Brinckerhoff provided support to the NJDOT Environmental Team, reviewed emergency repair reports by other consultants, and redesigned the proposed scour countermeasures.

NJDOT Route 37 Mathis Bridge: As a modification to an existing contract, Parsons Brinckerhoff performed underwater assessment and investigation and emergency repairs to this movable bridge.

Hurricane Sandy Recovery FEMA Category B – Emergency Protective Measures (Location of Debris and Shoaling in State Channels): Parsons Brinckerhoff is working with NJDOT to map the condition information for all state navigation channels in the Raritan Bayshore, Monmouth, Ocean, Burlington, Atlantic and Cape May shore areas.

Brooklyn Battery Tunnel: Parsons Brinckerhoff performed condition assessment of mechanical and structural systems and participated in development of rapid response mitigation measures and preparation of design documentation for permanent mitigation measures.

Queens Midtown Tunnel: Parsons Brinckerhoff worked on electrical switchgear replacement and condition assessment of mechanical and electrical systems.

Cape May Townsends Inlet: Parsons Brinckerhoff provided a condition assessment of Cape May County's roads and bridges within 36 hours of Sandy's hit, followed by an investigation to perform emergency repair design for this movable bridge.

FACILITY RESILIENCE

Consolidated Edison Company of New York Flood Mitigation for Seven Con Ed Facilities: Parsons Brinckerhoff conducted a "hardening" study for seven priority facilities vital to the repair and recovery of electrical and steam operations. The objective is to harden the facilities for protection against future natural disasters.

Consolidated Edison Company of New York: Parsons Brinckerhoff provided storm-hardening conceptual design for electrical and gas facilities.

New York City Health and Hospitals Corporation (HHC): Rebuild and strengthen components of NYC hospitals. Work included: Coler, Jacobi, Metropolitan, Coney Island and Bellevue Hospitals.

CLIMATE ADAPTATION SERVICES

FHWA Engineering Resiliency Study: "Transportation Engineering Approaches to Address Adaptation and Resiliency." Parsons Brinckerhoff is assisting with the development of recommended engineering practices for identifying and evaluating project-level vulnerabilities from future extreme weather events and climate change, and designing solutions to respond and adapt to those vulnerabilities.

AASHTO Extreme Weather Sessions Support Services: AASHTO selected Parsons Brinckerhoff to lead presentations at 12 national, regional and technical committee meetings to an audience of state DOT officials from across the US.

DISASTER RECOVERY AND PREPARATION

Superstorm Sandy Recovery Call Center and Registration Intake Services: Parsons Brinckerhoff supported FEMA by providing registration intake (RI) and call center services through the firm's FEMA Housing Inspection Services contract. In November 2012 the firm received a task order to place RI agents at FEMA's Virginia and Texas National Processing Service Centers.

NYS DOT Emergency Preparedness: Parsons Brinckerhoff has assisted with preparation of emergency procedures, training, and exercises to update current practices for Region 11.

Contact:

Michael Flood, AICP
National Resilience Lead
Parsons Brinckerhoff

Flood@pbworld.com
410.246.0528 (office)
410.491.9616 (cell)