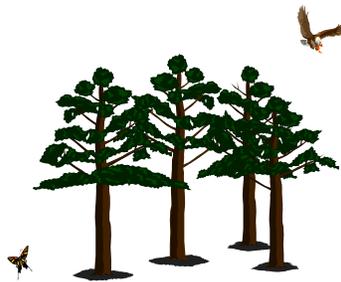




**FEDERAL AVIATION ADMINISTRATION**

**EASTERN REGION**  
AIRPORTS DIVISION

**Short Environmental  
Assessment Form  
for  
AIRPORT DEVELOPMENT  
PROJECTS**



Airport Name: Newark Liberty International Airport Identifier: EWR

Proposed Project: Aviation Fuel System Modifications, Phase I

This Environmental Assessment becomes a Federal document when evaluated, signed, and dated by the Responsible FAA official.

\_\_\_\_\_  
Responsible FAA Official

\_\_\_\_\_  
Date

---

*This form is to be used only for limited types of projects. It is strongly recommended that you contact your local Environmental Protection Specialist (EPS) before completing this form. See instructions page.*

### APPLICABILITY

This Form can be used if the proposed project meets the following criteria:

- 1) It is not categorically excluded (see paragraphs 303 and 307-312 in FAA Order 1050.1E) or
- 2) It is normally categorically excluded but, in this instance, involves at least one extraordinary circumstance that may significantly impact the human environment (see paragraph 304 and the applicable section in Appendix of 1050.1E) or
- 3) The action is one that normally requires an EA at a minimum (see paragraph 506 in FAA Order 5050.4B) and
- 4) The proposed project must fall under one of the following categories of Federal Airports Program actions:
  - (a) Approval of a project on an Airport Layout Plan (ALP).
  - (b) Approval of federal funding for airport development.
  - (c) Requests for conveyance of government land.
  - (d) Approval of release of airport land.
  - (e) Approval of the use of Passenger Facility Charges (PFC).
  - (f) Approval of development or construction on a federally obligated airport.

**If you have questions as to whether the use of this form is appropriate for your project, contact your local EPS BEFORE using this form.**

\*\*\*\*\*

---

**Complete the following information:**

**Project Location**

Airport Name: Newark Liberty International Airport Identifier: EWR  
Airport Address: 1 Conrad Road  
City: Newark County: Essex & Union State: NJ Zip: 07114

**Airport Sponsor Information**

Point of Contact: Edward C. Knoesel, Mgr., Environmental Programs, Aviation Technical Services  
Address: Port Authority of New York & New Jersey, 233 Park Avenue South, 9<sup>th</sup> Floor  
City: New York State: NY Zip: 10003  
Telephone: (212) 435 3747 Fax: (212) 435 3825  
Email: eknoesel@panynj.gov

**Evaluation Form Preparer Information**

Point of Contact: Adeel Yousuf, Airport Environmental Specialist, Aviation Technical Services  
Address: Port Authority of New York & New Jersey, 233 Park Avenue South, 9<sup>th</sup> Floor  
City: New York State: NY Zip: 10003  
Telephone: (212) 435 3784 Fax: (212) 435 3825  
Email: ayousuf@panynj.gov

---

**1. Introduction/Background:**

This project consists of modifications and upgrades to the existing aviation fueling system at Newark Liberty International Airport (EWR) to maintain a state of good repair, bring the system in line with current industry standards, comply with current New Jersey State environmental regulations, increase operational efficiencies and storage capacity, and enhance system operations. The project is considered to be Phase I of a three-phase multi-year Aviation Fueling System Renewal Program.

The existing fuel system was constructed in 1970 and is original to the construction of the central terminal area (CTA). The fuel system is in need of state of good repair work and upgrades to bring the system up to current industry and environmental standards. The fuel system design was premised upon the industry practice at that time of airlines sourcing individual specifications and brands of aviation fuel for their respective aircraft fleets. As a result, the current system is comprised of a single-walled pipe distribution network of 11 18-inch transfer lines connecting the 27-tank fuel farm to the primary fuel selection area (FSA). The FSA is connected to a network of 19 12-inch single-walled distribution pipes with 2 lines connected to each of the 9 terminal satellites plus 1 to the Federal Express Metroplex. This operation allowed the airlines to use fuel individually purchased and stored in the tank farm. Physically this operation requires a total of 27 fuel pumps (1 per tank) sorted into 11 pump systems operated via 4 pump stations.

The present industry standard calls for centralized purchasing of standard Jet-A fuel for all airport users. This model allows for the simplification of existing multi-pump fuel supply systems and piping networks. The resulting simplified fuel system has fewer pipes, pumps, valves and controls. This reduces operational complexity, while actually allowing greater flexibility among the existing

---

fuel storage tanks. Further, the overall simplification of the system components, coupled with the modernization of the system, enhances the system's environmental stewardship.

Finally, the existing piping system is comprised of single-wall welded steel pipe. This type of construction is no longer permitted by the New Jersey Department of Environmental Protection (NJDEP) for new underground piping. The proposed new work would adhere to new standards introduced in 2005 using double-wall construction with continuous monitoring of the interstitial space, where feasible.

**2. Project Description** (List and clearly describe ALL components of project proposal including all connected actions). **Attach a map or drawing of the area with the location(s) of the proposed action(s) identified:**

The modifications and upgrades to the existing aviation fueling system would consist of the following elements:

- Approximately 29,400 linear feet (LF) of new piping would be installed in the airport's South Cargo Area. The new pipeline would consist of approximately 12,450 LF of a new 18-inch main fuel line from the South Fuel Farm to a new FSA and approximately 16,950 LF of 14-inch distribution line to reconnect the new FSA back into the multi-line CTA fuel ring serving the terminal satellites. The existing 36,000 LF of 18-inch single-wall pipe from the fuel farm to the FSA and the 83,500 LF of 12-inch single-wall distribution pipe serving the terminal satellites and the Federal Express Metroplex would be decommissioned and would be capped and abandoned-in-place after being flushed with nitrogen, in accordance with NJDEP regulations. All new piping would consist of double-wall pipes that would comply with the latest NJDEP regulations. Utilizing an existing crossing of the Peripheral Ditch as shown in Figures 1 and 2, the new pipeline would start at a point located northeast of the Ditch; thus there would be no new crossing of the Ditch constructed. The new pipeline would run from a point east of the Peripheral Ditch north to a new FSA to be located between Terminal B and Terminal A. The routing of the pipeline will not preclude a new relocated Terminal A, which is in planning phase, and would be located outside the footprint of the proposed new Terminal A building.
- A new FSA would be built airside between Terminal B and Terminal A. The new FSA would be located on a 30-foot by 70-foot concrete containment pad on existing pavement, covered with a canopy and surrounded by security fencing, and would contain an aboveground transfer and distribution piping manifold. The current FSA (which is to be decommissioned) is a relic of the obsolete practice of maintaining dedicated fuel inventories for individual airlines. The new FSA will act only as a fuel selection manifold since commercial fuel has been standardized to Jet A fuel. However, Emergency Fuel Shut-off (EFSO) capability would still be required.
- A new two-position airside truck loading rack would be constructed at a location north of the Peripheral Ditch. The new loading rack would be capable of

---

transferring 400 to 600 gallons of fuel per minute and will be equipped with state of the art control technology. The new loading rack would be situated airside. This would eliminate truck trips from the tank farm to gates for fueling, resulting in less traffic, fewer stops at security checkpoints and reduced air emissions. The facility would be co-located with a new Contact Water Treatment Facility (CWTF) as the existing CWTF must be relocated to allow for the proposed Terminal A construction. The new CWTF would be of a similar design and function as the existing facility and would include three truck parking positions, three holding tanks, one reclaim tank, and an oil water separator. The new CWTF, as well as the new loading rack, would comply with all NJDEP permitting and operating requirements. The new loading rack would have a separate drainage system in the tanker parking area to direct any spills to the CWTF for treatment prior to discharge. Based on the type of industrial activities the CWTF and truck loading rack are, it is anticipated that the discharge outfall will be monitored in the future under EWR's existing New Jersey Pollutant Discharge Elimination System (NJPDES) permit. Following submission of the modified NJPDES permit, NJDEP will notify whether to sample the new outfall or not. Secondary containment would be provided through catch basins and a 30,000 gallon underground storage tank and connected oil/water separator. The CWTF would consist of three 10,000-gallon double walled holding tanks with skimmers. Separated fuel will be pumped to an aboveground 1,500-gallon reclaim tank for offsite sale or disposal. Water and fuel effluent would be discharged to a 4,000-gallon oil water separator. Separated water would be subsequently discharged to stormwater drains.

- Two new 2 million-gallon Jet A fuel storage tanks would be constructed on the south end of the fuel farm. These two tanks would connect to the existing pipeline and fuel pump manifold for direct fuel distribution to the terminals. The existing pump manifold would also be upgraded to bring it up to current industry standards. Each new storage tank would be equipped with a fuel gauge system for fuel inventory management and would utilize an internal floating roof system. The primary seal would be a mechanical shoe seal and the secondary seal would be a urethane wiper seal. The tank specifications and operations will comply with the latest NJDEP permitting and operating requirements.
- South Fuel Farm piping would be upgraded to connect the two new 2 million gallon storage tanks to existing pump station. Total of five new buried pipe segments would be installed in the South Fuel Farm: a 580 LF segment of 30-inch diameter piping, a 215 LF segment of 30-inch diameter piping, a 75 LF segment of 20-inch diameter piping, a 50 LF segment of 18-inch diameter piping, and a 450 LF segment of 12-inch diameter piping. One new aboveground pipe segment will also be installed consisting of 290 LF segment of 20-inch diameter. The planned work in the fuel farm will also include five new buried piping manifolds, of less than 10 ft in length each, connected to the existing single-wall buried pipelines. All piping in the South Fuel Farm is proposed to be single walled to be consistent with the existing piping since the majority of the new fuel piping will be subject to negative to low pressure operating conditions with the piping

---

designed to have a maximum operating pressure of 275 psi, and with several layers of corrosion protection and rigorous quality control during pipe installation. *Note: A letter requesting NJDEP's concurrence with single walled pipe installation was submitted on February 14, 2013 (see Attachment E).*

- Modifications and upgrades would be made to fueling system components including, but not limited to, pipe joints, valves, pumps, and electrical controls. These improvements would streamline the fuel distribution system and reduce the pumping infrastructure, which would reduce electrical usage and maintenance costs. The associated elimination of component parts, which require periodic dismantling, inspection and/or repair, would also reduce the risk of fuel leaks.

### **3. Project Purpose and Need:**

The purpose of the Proposed Action is to modify and upgrade the existing aviation fueling system so that it meets current NJDEP regulatory standards and operates in a more efficient and more environmentally conscious manner. A modified fuel distribution system with less component parts and new loading racks and storage tanks, would meet the need for increased efficiency by:

- i) providing energy efficient operation of the new airside loading rack,
- ii) providing new, reliable piping, pumps and components.

The need for reduced environmental impacts would be met by:

- iii) enhance fuel leak detection by replacing approximately 60% of the existing single-wall piping with double-wall piping,
- iv) reducing truck trips, traffic and air emissions by building a new airside truck loading rack for servicing aircraft in the CTA.

Furthermore, as a result of the lessons learned from Superstorm Sandy in October 2012, there is a need to provide a more reliable aviation fueling system with increased capacity at the airport. The devastating storm interrupted outside fuel delivery to the airport and lack of available storage capacity did not allow the airport to stockpile enough fuel for continued operations. The proposed additional storage tanks would provide added fuel storage capacity for any future extreme storm events. In addition, the double-wall piping would also provide enhanced safety of in-to-plane fuel delivery infrastructure during flooding, such as the one that took place during Superstorm Sandy.

### **4. Describe the affected environment (existing conditions) and land use in the vicinity of project:**

The airport is encircled by major highways, commercial and light manufacturing facilities and the Port Newark/Elizabeth Marine Terminal complex. Commercial and light manufacturing dominate the land uses of the area, generally surrounding the airport. Industrial and commercial uses exist to the west of U.S. Routes 1&9, including a number

---

of hotels, parking facilities, car rental facilities, and an Anheuser Busch brewery. A medium density residential area is located between North Avenue East and McClellan Street southwest of the airport.

The Proposed Action would be located entirely on airport property. Land use in the immediate vicinity of the project consists of several commercial buildings, parking lots, aircraft aprons and aircraft hardstand areas.

**5. Alternatives to the Project: Describe any other reasonable actions that may feasibly substitute for the proposed project, and include a description of the “No Action” alternative. If there are no feasible or reasonable alternatives to the proposed project, explain why (attach alternatives drawings as applicable):**

**Proposed Action:**

The Proposed Action entails modification and upgrades to the existing aviation fueling system at the Airport to enable it to operate in a more efficient and more environmentally conscious manner. The project elements include replacing approximately 29,400 LF of existing single-wall piping with new double-wall piping, constructing a new Fuel Selection Area on a 30-foot by 70-foot concrete containment pad, two 2 million-gallon fuel storage tanks, a new fuel storage gauging system, a new Contact Water Treatment facility, a new 2-position truck loading rack and fuel farm pump manifold modifications. The project elements will meet the purpose and need of the Proposed Action as described above.

**Other Alternatives:**

There are no other viable alternatives to the Proposed Action for initiating the aviation fueling system upgrading effort. In order to achieve the required operational efficiencies and system enhancements, the project components are all nominally inter-related (i.e., the new storage tanks, new fuel loading rack, double-wall piping, and the fuel selection area). Alternative routings for the piping were considered and the Proposed Action was selected to minimize impacts to operations, existing underground utilities and to the planned development of a new Terminal A.

**No-Build/No-Action Alternative:**

Under the No-Build/No-Action Alternative, the existing aviation fueling system would remain unchanged and subject to further degradation in the future. The number of truck trips for fuel delivery from the tank farm to airside areas would continue. In addition, emissions reductions associated with building a new loading rack would not be realized. Overall, the risk of service disruptions would worsen due to the aging infrastructure components.

---

**6. Environmental Consequences – Special Impact Categories (refer to the Instructions page and corresponding sections in Appendix A of 1050.1E and the Airports Desk Reference for more information and direction. The analysis under each section must comply with the requirements and significance thresholds as described in the Desk Reference).**

**(A) AIR QUALITY** (Please note this analysis must meet requirements for both NEPA review and Clean Air Act (CAA) requirements).

**Clean Air Act**

(a) Is the proposed project located in a nonattainment or maintenance area for the National Ambient Air Quality Standards (NAAQS) established under the Clean Air Act and does it result in direct emissions (including construction emissions)?(If **Yes**, go to (b), **No**, go to the NEPA section below.

Newark Liberty International Airport is located in the New Jersey-New York-Connecticut Intrastate Air Quality Control Region (AQCR). The New Jersey-New York-Connecticut Intrastate AQCR does not meet the Federal standard for the 8-hour concentration of ozone. The region is also nonattainment for particulates smaller than 2.5 microns (PM<sub>2.5</sub>). In the past, this area was also designated as a nonattainment area for carbon monoxide (CO); however, on May 20, 2002, the U.S. Environmental Protection Agency (USEPA) determined the area had attained the CO standard and the region was re-designated to attainment for CO. The area now operates under a maintenance plan for CO.

(b) Is the proposed project an “exempted action,” under the General Conformity Rule or Presumed to Conform (See FRN, vol.72 no. 145, pg 41565)? (If **Yes**, cite exemption and go to NEPA section below; **No**, go to (c)).

No. The Proposed Action is not an “exempted action” under the General Conformity Rule or is presumed to conform under 72 FR 41565.

(c) Would the proposed project result in a net total of direct and indirect emissions that exceed the threshold levels of the regulated air pollutants for which the project area is in non-attainment or maintenance? (Attach emissions inventory). (If **Yes**, consult with ADO).

The annual emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NO<sub>x</sub>) (as precursors of ozone), PM<sub>2.5</sub> and its precursor SO<sub>2</sub>, and CO for the construction of the Proposed Action will be well below the federal de minimis thresholds for each pollutant established by the General Conformity Rule. See Attachment B for the Air Quality emissions analysis.

**NEPA**

(a) Is the airport’s activity levels below the FAA thresholds for requiring a NAAQS analysis? (If **Yes**, document activity levels and go to Item 2, **No**, go to (b)).

No. The USEPA has determined that projects having de minimis emissions would not be likely to cause an exceedance of any NAAQS. The evaluation of the construction emissions for this project confirms that the net emissions due to the Proposed Action will be de minimis. Therefore, no further analysis to demonstrate attainment of the NAAQS is

---

required for this proposed project; furthermore, the Proposed Action will not result in any delay in the attainment of any NAAQS, nor would the Proposed Action worsen any existing NAAQS violation.

(b) Do pollutant concentrations exceed NAAQS thresholds? (Attach emissions inventory).

Not Applicable.

(c) Is an air quality analysis needed with regard to state indirect source review?

The construction and operation of a new fuel loading rack, and two new storage tanks will be subject to a NJDEP Minor Facility – Preconstruction Permit (N.J.A.C 7:27-8). The operating emissions from these two sources would be covered under the NJDEP permit.

### **(B) BIOTIC RESOURCES**

Describe the potential of the proposed project to directly or indirectly impact plant communities and/or the displacement of wildlife. (This answer should also reference Section 19, Water Quality, if jurisdictional water bodies are present).

The Proposed Action would commence near the top of the eastern bank of the Peripheral Ditch, west of Earhart Drive approximately 100 feet south of the Basilone Road bridge. This area consists of previously disturbed mowed turf. The remainder of the Project Area, east of Earhart Drive, consists of impervious surfaces. The area of mowed turf does not provide habitat for any federally threatened, endangered, or candidate fish species, therefore there would be no impact. There are no known federally-listed species of flora or fauna known to exist in the vicinity of the Project Area. The Peripheral Ditch, considered by NJDEP to be a “State Open Water”, would not be impacted by the Proposed Action.

### **(C) COASTAL RESOURCES**

(a) Would the proposed project occur in a coastal zone, or affect the use of a coastal resource, as defined by your state's Coastal Zone Management Plan (CZMP)? Explain.

Because the site of the Proposed Action is located more than 500 feet from the mean high water line and outside any regulated adjacent area, and is located outside the CAFRA Zone (New Jersey’s designated coastal zone), no impact to the coastal zone would occur under the Proposed Action.

(b) If **Yes**, is the project consistent with the State's CZMP? (If applicable, attach the sponsor's consistency certification and the state's concurrence of that certification).

Not Applicable.

(c) Is the location of the proposed project within the Coastal Barrier Resources System? (If **Yes**, and the project would receive federal funding, coordinate with the FWS and attach record of consultation).

---

No, the Proposed Action would not be located within the Coastal Barrier Resources System.

**(D) COMPATIBLE LAND USE**

(a) Would the proposed project result in other (besides noise) impacts that have land use ramifications, such as disruption of communities, relocation of residences or businesses, or impact natural resource areas? Explain.

No. The Proposed Action would be located entirely on airport property and would be compatible with surrounding land use. There would be no change in the airport's relationship with the area's existing zoning, surrounding area land use plans, and the land uses on the airport. No businesses, residences or natural resource areas would be affected by this Proposed Action.

(b) Would the proposed project be located near or create a wildlife hazard as defined in FAA Advisory Circular 150/5200-33, "Wildlife Hazards On and Near Airports"? Explain.

No. The Proposed Action would not be located near wildlife or create a wildlife hazard.

**(E) CONSTRUCTION IMPACTS**

Would construction of the proposed project increase ambient noise levels due to equipment operation; degrade local air quality due to dust, equipment exhausts and burning debris; deteriorate water quality when erosion and pollutant runoff occur; and/or disrupt off-site and local traffic patterns? Explain.

Noise

The area around the airport has an existing high background noise level due to highway traffic and aircraft operations. The noise generated during construction activities would not be discernible from the airport's normal background noise levels. There are no sensitive receptors located immediately adjacent to the proposed project site. Off-site impacts, from construction equipment and materials egress/ingress, are anticipated to be minimal and temporary.

Air Quality

Emissions and dust related to construction activity would be temporary and limited to the duration of the project. Dust would be minimized using methods contained in FAA Advisory Circular 150/5370-10F, *Standards for Specifying Construction of Airports*. In general, impacts would be typical of those from a medium-to-large scale construction project in Elizabeth or Newark.

Water Quality

Several measures would be implemented during construction that would minimize impact to water quality, such as those discussed under Item (S) Water Quality below. All actions would conform to state and federal water quality regulations. Construction contract specifications would contain the provisions of FAA Advisory Circular 150/5370-10F, *Standards for Specifying Construction of Airports*, Item P-156 *Temporary*

---

*Air and Water Pollution, Soil Erosion, and Siltation Control, and 150/5320-5C, Surface Drainage Design.*

Local Traffic Patterns

Because the Proposed Action would be located entirely on airport property, no local off-site traffic patterns would be disrupted.

**(F) SECTION 4(f) RESOURCES**

Does the proposed project have an impact on any publicly owned land from a public park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance, or an historic site of national, state, or local significance? (If **Yes**, contact FAA, contact appropriate agency and attach record of consultation).

No. The Proposed Action would be located completely within the confines of the airport and would not require the use of any public lands or historic sites.

**(G) ENDANGERED AND THREATENED SPECIES**

(a) Would the proposed project impact any federally or state-listed or proposed, endangered, or threatened species (ESA) of flora and fauna, or impact critical habitat? (Attach record of consultation with federal and state agencies as appropriate).

There are no known federally-listed species of flora or fauna known to exist in the vicinity of the Project Area. Therefore, there would be no impact to any federally-listed threatened or endangered species, or critical habitat from the Proposed Action.

(b) Would the proposed project affect species protected under the Migratory Bird Act? (If **Yes**, contact FAA).

No. The Proposed Action would likely not affect any species protected under the Migratory Bird Act. The majority of the Project Area is comprised of impervious surfaces, with a small area of disturbed mowed turf that does not provide suitable habitat for any protected species.

**(H) ENERGY SUPPLIES, NATURAL RESOURCES AND SUSTAINABLE DESIGN**

What effect would the proposed project have on energy or other natural resource consumption? (Attach record of consultations with local public utilities or suppliers if appropriate)

The Proposed Action would have no impact on public utilities, energy supply or natural resources. There would be no change to airport operations, except to increase efficiency and environmental stewardship. There is no shortage of construction material necessary for the Proposed Action in the region.

---

**(I) ENVIRONMENTAL JUSTICE**

Would the proposed project have a disproportionate impact on minority and/or low-income communities? Consider human health, social, economic, and environmental issues in your evaluation. Explain.

No. There would be no residential or business displacement, no fiscal impact, and no disproportionate impacts to low-income or minority populations.

**(J) FARMLANDS**

Does the project involve acquisition of farmland, or use of farmland, that would be converted to non-agricultural use and is protected by the Federal Farmland Protection Policy Act (FPPA)? (If **Yes**, attach record of coordination with the Natural Resources Conservation Service (NRCS), including form AD-1006.)

No. The airport is located in a heavily urbanized area. The Proposed Action would not involve farmland acquisition or conversion, or the use of any FPPA properties.

**(K) FLOODPLAINS**

(a) Would the proposed project be located in, or would it encroach upon, any 100-year floodplains, as designated by the Federal Emergency Management Agency (FEMA)?

Yes. Prior to Superstorm Sandy, FEMA was in the process of updating specific Flood Insurance Rate Maps (FIRMs). These updated maps were set to be finalized in mid-2013. After the storm however, and because these updated FIRMs were not finalized, FEMA developed interim Advisory Base Flood Elevations (ABFEs) to support post-Sandy reconstruction efforts. ABFEs provide improved flood hazard data when the information on the FIRM no longer depicts an area's true flood risk. According to ABFEs dated December 7, 2012, January 12, 2013 and January 15, 2013 the Project Area is located in Advisory Flood Hazard Zone A, which is the area subject to storm surge flooding from the 1% annual chance coastal flood (the 100-year flood). In the vicinity of the Project Area, the 1% annual advisory base flood elevation is 12 feet NAVD 88.

(b) If Yes, attach the corresponding FEMA Flood Insurance Rate Map (FIRM) and describe the measures to be taken to comply with Executive Order 11988.

Executive Order 11988 requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The Proposed Action would not result in any increase in impervious surface or changes in floodplain storage capacity and would therefore not create significant adverse impacts to the surrounding floodplain.

NJDEP's Flood Hazard Area regulations provide protection for stream buffers through riparian zone protections. The regulations limit the area of vegetation that can be disturbed for various regulated activities. Although construction of the Proposed Action would result in the temporary disturbance of approximately 1,800 square feet of mowed

---

turf located within the 50-foot riparian zone along the Peripheral Ditch, any impact is expected to be minor.

**(L) HAZARDOUS MATERIALS**

Would the proposed project involve the use of land that may contain hazardous materials or cause potential contamination from hazardous materials? (If **Yes**, attach record of consultation with appropriate agencies). Explain.

During construction, soils would be excavated for the installation of new pipeline and foundation work for new structures. If any of the soils are suspected of being contaminated through a field assessment, samples would be obtained and analyzed for the USEPA target compound list/target analyte list of parameters. Soils with elevated levels of pollutants will be disposed of off-site in accordance with Federal and State regulations. If any soil or other material removed during construction are determined to be hazardous, the material would be disposed of at an approved hazardous waste disposal facility under the PANYNJ's RCRA hazardous waste ID number.

Currently, there is an open spill case (Case No. 91-2-25-1042-04) associated with the existing Fuel Selection Area (FSA). Soil and groundwater is contaminated with 2-methylnaphthalene and several polycyclic aromatic hydrocarbons at the location. The extent of soil contamination has been delineated completely, and groundwater contaminants are currently monitored under a NJDEP-approved remedial action work plan. Under this work plan, groundwater is sampled annually to ensure contaminants are not migrating offsite. Work under the Proposed Action will not involve demolition of the existing FSA. Demolition of the FSA and remediation of subsurface soils and groundwater at this site will be done at a later date to standards dictated by the NJDEP.

**(M) HISTORIC, ARCHITECTURAL, ARCHEOLOGICAL OR CULTURAL PROPERTY**

(a) Describe any impact the proposed project might have on any properties in or eligible for inclusion in the National Register of Historic Places. (Include a record of your consultation and response with the State or Tribal Historic Preservation Officer (S/THPO)).

Research conducted at the State Historic Preservation Office (SHPO) revealed that there are no previously identified architectural resources located within the Project Area that either listed on, or eligible to be listed on, either on the National or State Registers of Historic Places.

(b) Describe any impacts to archeological resources as a result of the proposed project. (Include a record of consultation with persons or organizations with relevant expertise, including the S/THPO, if applicable).

The Project Area is situated in a former marsh. In 1928 about 68 acres were filled to a height of almost 20 feet above sea level for the initial airfield. A 1989 cultural resources survey conducted subsurface testing in two small areas proximate to the Project Area that were areas of naturally higher ground, unaffected by the prior filling of the marshland. No prehistoric or historic archaeological sites were identified during this effort and no further work was recommended. Recent research conducted at the SHPO and the New Jersey State Museum indicates that there are no eligible archaeological resources located within the Project Area.

---

**(N) INDUCED SOCIOECONOMIC IMPACTS**

Would the proposed project cause induced, or secondary, socioeconomic impacts to surrounding communities, such as change business and economic activity in a community; impact public service demands; induce shifts in population movement and growth, etc.? Explain.

The Proposed Action would induce positive secondary impacts in the region because of construction activity. These economic impacts would benefit surrounding communities during construction by increasing employment opportunities and expenditures on local services and materials. The Proposed Action would not result in property acquisition, residential relocation, division or disruption of established communities, or disruption of planned development.

**(O) LIGHT EMISSIONS AND VISUAL EFFECTS**

Would the proposed project have the potential for airport-related lighting impacts on nearby residents? Explain.

No. The Proposed Action would not result in any airport-related lighting impacts on nearby residents.

**(P) NOISE**

Will the project, when compared to the No Action alternative for the same timeframe, cause noise sensitive areas located at or above DNL 65 dB to experience a noise increase of at least DNL 1.5 dB? (Use AEM as a screening tool and INM as appropriate. See Airports Desk Reference, Chapter 17, for further guidance).

The evaluation of the Proposed Action does not require a noise analysis per FAA Order 5050.4B.

**(Q) SOCIAL IMPACTS**

Would the proposed project cause an alteration in surface traffic patterns, or cause a noticeable increase in surface traffic congestion or decrease in Level of Service?

During construction, traffic of construction vehicles on Earhart Drive and Wiley Post Road would be maintained at all times. There would be no decrease in Level of Service as a result of the Proposed Action.

**(R) SOLID WASTE**

Would the operation and/or construction of the project generate significant amounts of solid waste? If Yes, are local disposal facilities capable of handling the additional volumes of waste resulting from the project? Explain.

During construction, solid waste would be generated primarily by site clearing and structural demolition. Construction and demolition debris generated by the Proposed Action would be recycled to maximum extent possible. In New Jersey, recyclable material is defined as a source-separated material which is subject to NJDEP approval prior to receipt, storage, processing or transfer at a recycling center, and which includes source-separated, waste concrete, asphalt, brick, block, asphalt-based roofing, scrap and

---

wood waste. Disposal of these materials would be done in accordance with Union County's Solid Waste Management Plan and in compliance with the regulations of the state's *Solid Waste Management Act*. Any structural steel (e.g., from the existing FSA) has commercial value as scrap metal and would be transported to appropriate facilities according to relevant State and local regulations.

**(S) WATER QUALITY**

(a) Does the proposed project have the potential to impact water quality, including ground water, surface water bodies, and public water supply system or federal, state or tribal water quality standards? (If **Yes**, contact appropriate agency and include record of consultation).

The Proposed Action would have no adverse impact to the surface water quality at the airport, construction activity would not require any alteration to the Peripheral Ditch. The Proposed Action would not adversely impact the quantity or quality of stormwater runoff at the airport, nor would it alter the location or type of impervious surfaces. Stormwater runoff volume and velocity would not change because of the Proposed Action. Finally, there would be no impact to groundwater or wastewater as a result of the Proposed Action. EWR's current NJPDES permit will be modified to include the new outfall associated with the new CWTF and truck loading rack.

(b) Is the project to be located over a designated Sole Source Aquifer? (If **Yes**, attach record of consultation with EPA).

No, the Proposed Action will not impact any designated Sole Source Aquifers.

**(T) WETLANDS**

(a) Does the proposed project involve federal or state regulated or non-jurisdictional wetlands? (Contact USFWS or state agency if protected resources are affected) (Wetlands must be delineated using methods in the US Army Corps of Engineers 1987 Wetland Delineation Manual. Delineations must be performed by a person certified in wetlands delineation).

No. There would be no impact to wetlands. The proposed project will be outside of the wetlands area around the Peripheral ditch. Furthermore, NJDEP has classified the Peripheral Ditch as "State Open Water" with no buffer area required.

(b) If yes, does the project qualify for an Army Corps of Engineers General permit? (Document coordination with the Corps).

Not applicable.

**(U) WILD AND SCENIC RIVERS**

Would the proposed project affect a river segment that is listed in the Wild and Scenic River System or National Rivers Inventory? (If **Yes**, coordinate with the jurisdictional agency and attach record of consultation).

No. The Proposed Action would not affect any designated Wild and Scenic Rivers.

---

## **(V) CUMULATIVE IMPACTS**

Discuss impacts from past, present, and reasonably foreseeable future projects both on and off the airport. Would the proposed project produce a cumulative effect on any of the environmental impact categories above? Consider projects that are connected and may have common timing and/or location. For purposes of this Form, generally use 3 years for past projects and 5 years for future foreseeable projects.

The construction schedule of the Proposed Action, to span from March 2014 through July 2016, will overlap with the Terminal A Redevelopment Program (from 2014 to 2018). With the exception of temporary construction-related impacts, the cumulative adverse environmental impact of the Proposed Action is expected to be minimal. Extensive preventive procedures will be put into place to avoid and minimize any potential adverse impacts during construction. The Proposed Action is consistent with the overall planning mission of the Port Authority and would not result in unmitigated adverse cumulative impacts. The cumulative impacts resulting from implementation of the Proposed Action have been assessed against other projects on the airport. The cumulative impacts analysis presented in this document includes a review of available environmental documents for other projects at the airport.

Newark Liberty International Airport, like any other airport in the country, requires regular maintenance and modernization. The Port Authority has and will continue to undertake an array of improvements at the airport to maintain and improve the safe and efficient movement of aircraft and travelers. As is evident from a review of the projects listed below, each has demonstrated independent utility and can go forward without regard to any or all of the other listed actions being adopted. Each is proceeding separately and has or will go forward based on its own merits. The Proposed Action has also demonstrated its independent utility. The projects listed below represent the Port Authority's most recent steps to maintain and to improve the Airport's functionality and to enhance level of service.

The following is a summary of ongoing or recently completed projects and projects anticipated in the foreseeable future.

### **Past Actions**

Between 2005 and 2009 there were seven development or improvement projects undertaken at the airport, all of which were categorically excluded from the requirement to prepare an EA or an EIS (Projects eligible for a Categorical Exclusion are actions that, under normal circumstances, are not considered major federal actions and that have no measurable impacts on the environment). These projects were:

- Port Street and Brewster Road Improvements Phase 1
- Construction of Multi-Fuel Station and Carwash
- Rehabilitation of Taxiway A and Sections of Taxiways K, M, Q and PA
- Rehabilitation of Taxiways CC, P, W, Z and S
- Widening of Taxiway Fillets
- Installation of Ground Based Augmentation System Navigational Aid

- 
- Upgrade of Runways 22R, 22L and 4L Navigation Aids

### **Ongoing Actions**

Following ongoing actions have all been categorically excluded.

- Enlargement and Modernization of Terminal B
- Port Street and Brewster Road Improvements, Phase 2
- United Airlines Maintenance Hangar Terminal C In-Line Baggage Handling System
- Signature Flight Support FBO Terminal Improvements
- Rehabilitation of Taxiways A, B, D, & PA
- Bollard Protection at Terminal Frontages
- Runway 22R Multiple Entrance Taxiways Construction
- Runway 4R-22L Rehabilitation and Improvements
- United Airlines Widebody Hangar and Taxiway S Construction

### **Reasonably Foreseeable Future Projects**

The following actions are planned to be undertaken between 2013 and 2023. With the exception of the Terminal A Redevelopment Program, the projects identified below are anticipated to be categorically excluded from the requirement to prepare an EA or an EIS.

Environmental Assessment will be prepared and submitted for the following project in near future:

- Terminal A Redevelopment Program – The construction of a new Terminal A and associated improvements

Following future projects have been determined to be categorically excluded from the requirement to prepare an EA or an ESA pursuant to FAA Order 1050.1E:

- Runway 4L-22R Rehabilitation and Improvements
- Runway 11/29 Safety Area Improvements - EMAS Installation
- Replacement of Guard Posts E-2 and D
- Taxiway P Rehabilitation and Improvements
- Terminal B Electrical Distribution and Substation Improvements

Following projects are anticipated to be categorically excluded in near future:

- Demolition of Buildings 14, 95 and 332 – This proposed project entails the demolition of Buildings 14, 95, and 332, all located in the airport's North Area, to create a site for future use by cargo tenants
- Rehabilitation of Terminal C Departures, Airport Exit to Rt. 1&9 S. Exit Ramp and Miscellaneous Roadways

---

Given the history of intense urbanization that has occurred in the region, and because no potentially significant adverse impacts have been linked to the Proposed Action in this Short-Form EA, it is unlikely that the incremental impact of the Proposed Action would cause or contribute to a significant adverse impact on the environment when added to future projects or actions involving the airport. If the Proposed Action is approved and implemented, it would be incumbent on NEPA analyses undertaken for future projects to look back on this Short-Form EA as a past project and to reevaluate the potential for cumulative impacts.

## **7. PERMITS**

List all required permits for the proposed project. Has coordination with the appropriate agency commenced and what is the expected time frame of receiving a permit?

The following permits and approvals would be required prior to initiating construction.

- NJDEP Flood Hazard Area Permit
- NJPDES Construction Dewatering Discharges General Permit
- NJDEP Construction Activity Stormwater General Permit NJG0088323
- Discharge to Surface Water Permit, Category B4B (General Groundwater Petroleum Product Cleanup) – to be issued by NJDEP
- Modification of EWR’s existing NJDPES permit to include new discharge source (truck loading rack and oil/water separator discharge)
- Somerset-Union County Soil Erosion & Sediment Control Plan Certification
- Air Pollution Control Preconstruction Permit – Air Quality – to be issued by NJDEP for construction and operation of two (2) new storage tanks and fuel loading rack
- Discharge Prevention Containment and Countermeasure (DPCC) Plan – Existing plan, prepared and maintained by Allied Aviation, will be revised to include the newly constructed truck loading rack and two new aboveground storage tanks. The DPCC plan is not a permit, but is a plan regulated by NJDEP (i.e. NJDEP will need to approve the plan after all modifications are completed due to the Proposed Action)
- Spill Prevention Control and Countermeasures (SPCC) plan – Required for the installation of the aboveground reclaim tank associated with the CWTF per Federal regulations. Allied Aviation, as the operator of truck loading rack and CWTF, will prepare and maintain the SPCC plan.

It is anticipated that all of the above permits would be obtained in a timely fashion with no difficulty before the start of construction.

*NOTE: Even though the airport sponsor has/shall obtain one or more permits from the appropriate federal, state, and/or local agencies for the proposed project, initiation of construction of the project shall NOT commence until FAA has issued its environmental determination.*

## **8. MITIGATION**

Describe those mitigation measures to be taken to avoid creation of significant impacts to a particular resource as a result of the proposed project, and include a discussion of any impacts that cannot be mitigated.

---

The Port Authority is committed to implementing the Proposed Action in accordance with all Federal, State and local environmental laws, regulations, policies, and permit requirements applicable to the project. In addition, to reduce adverse environmental impacts associated with Port Authority projects and actions, the Port Authority is committed to having each contractor perform the work in accordance with the following recent and relevant standards and guidelines:

- PANYNJ *Sustainable Design Guidelines (AI 45-2)*
  - *Sustainable Building Guidelines*
  - *Sustainable Infrastructure Guidelines*
- PANYNJ *Newark Liberty International Airport Best Management Practices Plan*
- Item 156 of FAA Advisory Circular (AC) 150/5070-10A, *Standards for Specifying Construction of Airports*
- PANYNJ *Spill Prevention Control and Countermeasures Plan for Facilities at Newark Liberty International Airport*

The project's construction documents would include language and details on dust and sedimentation control. Implementation of the Proposed Action may also require the removal and remediation of some hazardous materials from subsurface areas. These materials would be properly disposed of, reclaimed, or recycled in accordance with all federal, state and local requirements.

## **9. PUBLIC INVOLVEMENT**

Describe the public review process and any comments received.

To satisfy FAA requirements for public involvement, a Notice of Availability (NOA) will be published in the Star-Ledger, as appropriate to solicit public comment. The Draft EA will be available for review at the airport's Administration Building at 1 Conrad Road, Newark, NJ; the Authority's headquarters office at 225 Park Avenue South in New York, NY; and at the FAA's Airport District Office at 600 Old Country Road in Garden City, NY. A copy of the document will also be available for review on the Authority's website. The comment period will be 14 calendar days from the date of publication of the NOA. Any comments received will be addressed.

To ensure that interested parties are informed, an additional notice would be published in the Star Ledger notifying the public of any FAA decision in regard to this Environmental Assessment.

## **10. LIST OF ATTACHMENTS**

- Attachment A: Project Drawings
- Attachment B: Air Quality Analysis
- Attachment C: FEMA Flood Maps (FIRM)
- Attachment D: Airport Layout Plan

- 
- Attachment E: Letter to NJDEP Requesting Concurrence for Installation of Single Walled Piping in the South Fuel Farm.



---

## INSTRUCTIONS

**NOTE: This form was prepared by FAA Eastern Region Airports Division and is intended for use with proposed projects in this region only.**

**Introduction:** This Short Environmental Assessment (EA), is based upon the guidance in Federal Aviation Administration (FAA) Orders 5050.4B – *NEPA Implementing Instructions for Airport Actions* and 1050.1E – *Environmental Impacts: Policies and Procedures*, and the *Environmental Desk Reference for Airport Actions*, which incorporate the Council on Environmental Quality's (CEQ) regulations for implementing NEPA, as well as US Department of Transportation environmental regulations, and many other federal statutes and regulations designed to protect the Nation's natural, historic, cultural, and archeological resources, etc. The information provided by sponsors and their consultants through the use of this form enables the FAA ADO offices to evaluate compliance with NEPA and the applicable special purpose laws.

**Use:** This Form is intended to be used when a project cannot be categorically excluded (CATEX) from a formal environmental assessment, but when the environmental impacts of the proposed project are expected to be insignificant and a detailed EA would not be appropriate. Accordingly, this Form is intended to meet the intent of a short EA while satisfying the regulatory requirements of an EA. Proper completion of the Form would allow the FAA to determine whether the proposed airport development project can be processed with a short EA, or whether a more detailed EA or EIS must be prepared.

**If you have any questions on whether use of this form is appropriate for your project, or what information to provide, we recommend that you contact the environmental specialist in your local ADO.**

This Form is to be used in conjunction with applicable Orders, laws, and guidance documents, and in consultation with the appropriate resource agencies. Sponsors and their consultants should review the requirements of special purpose laws (See 5050.4B, Table 1-1 for a summary of applicable laws). Sufficient documentation is necessary to enable the FAA to assure compliance with all applicable environmental requirements. Accordingly, any required consultations, findings or determinations by federal and state agencies, or tribal governments, are to be coordinated, and completed if necessary, prior to submitting this form to FAA for review. Coordination with Tribal governments must be conducted through the FAA. We encourage sponsors to begin coordination with these entities as early as possible to provide for sufficient review time. Complete information will help FAA expedite its review. **Please note: When requesting discretionary funding for an airport project, the appropriate environmental documentation should be submitted to the local Airports District Office by April 30<sup>th</sup> of the year preceding the year funding is requested.**

**Availability:** *An electronic version of this Short Form EA is available on-line at <http://www.faa.gov/airports/eastern/environmental/media/C10.DOC>. Other sources of environmental information including guidance and regulatory documents are available on-line at [http://www.faa.gov/airports\\_airtraffic/airports/environmental](http://www.faa.gov/airports_airtraffic/airports/environmental).*

---

# **Attachment A**

## **Figures**

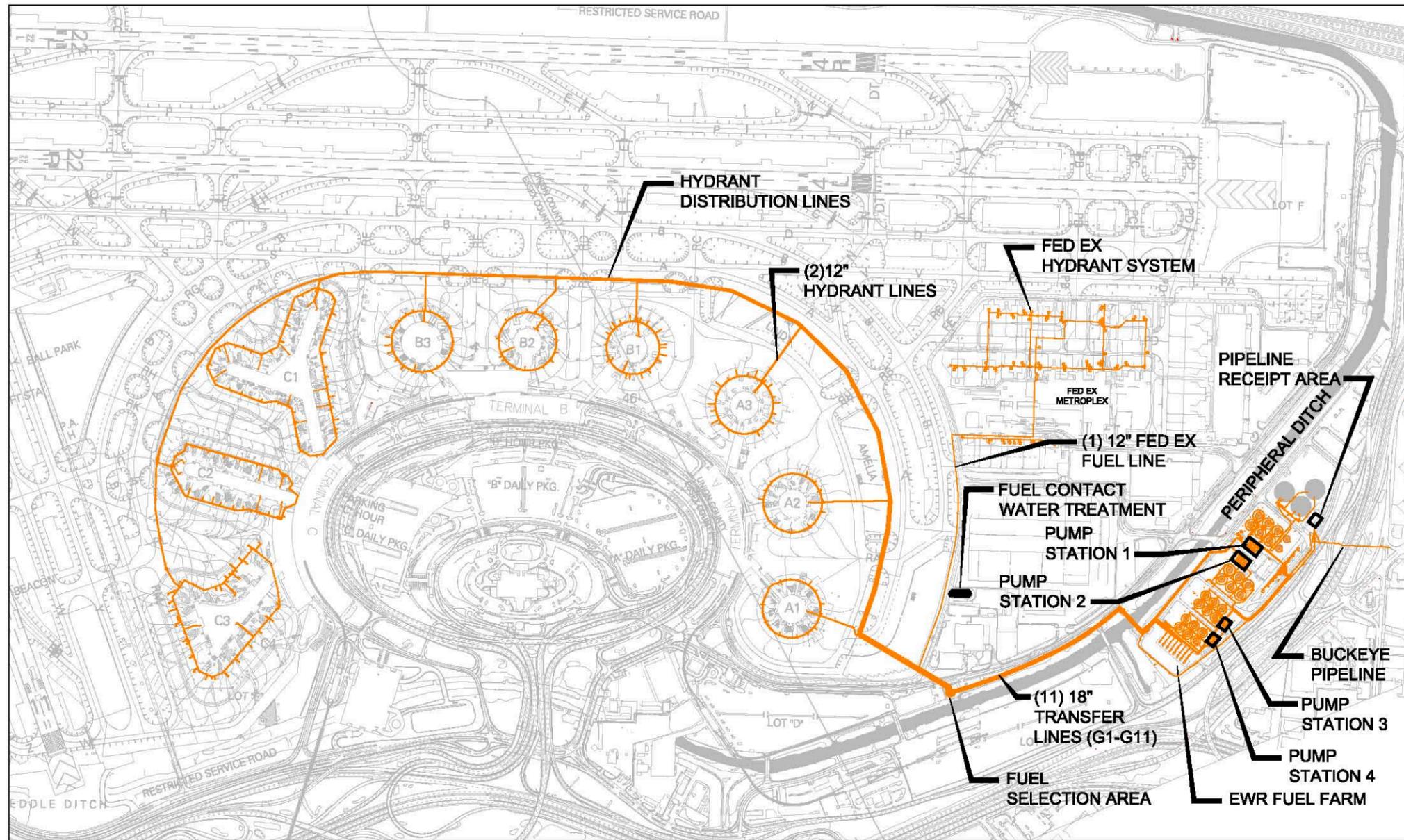
---

---

FIGURE 1: EXISTING FUEL SYSTEM

---

COPYRIGHT © NOTICE: THIS DOCUMENT IS THE PROPERTY OF ARGUS CONSULTING, INC. AND IS NOT TO BE PRODUCED OR COPIED IN WHOLE OR IN PART. IT IS ONLY TO BE USED FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN AND IS NOT TO BE USED FOR ANY OTHER PURPOSE OR ANY OTHER PROJECT. IT MUST BE RETURNED UPON REQUEST.



**EWR FUEL SYSTEM & AIRFIELD LABELS**



**ARGUS CONSULTING, INC.**  
 1300 NW Jefferson Court, Suite 100  
 Blue Springs, MO 64015  
 816.228.7500 FAX 816.228.7535  
 www.argusconsulting.com



DRAWING NAME: **EXISTING EWR FUEL SYSTEM EXTENTS**

CLIENT: **PANYNJ**

PROJECTING: **11070.00**

DWG. NO.: **F100**

PROJECT: **EWR - STAGE 1 REPORT**

DATE: **10/22/10**

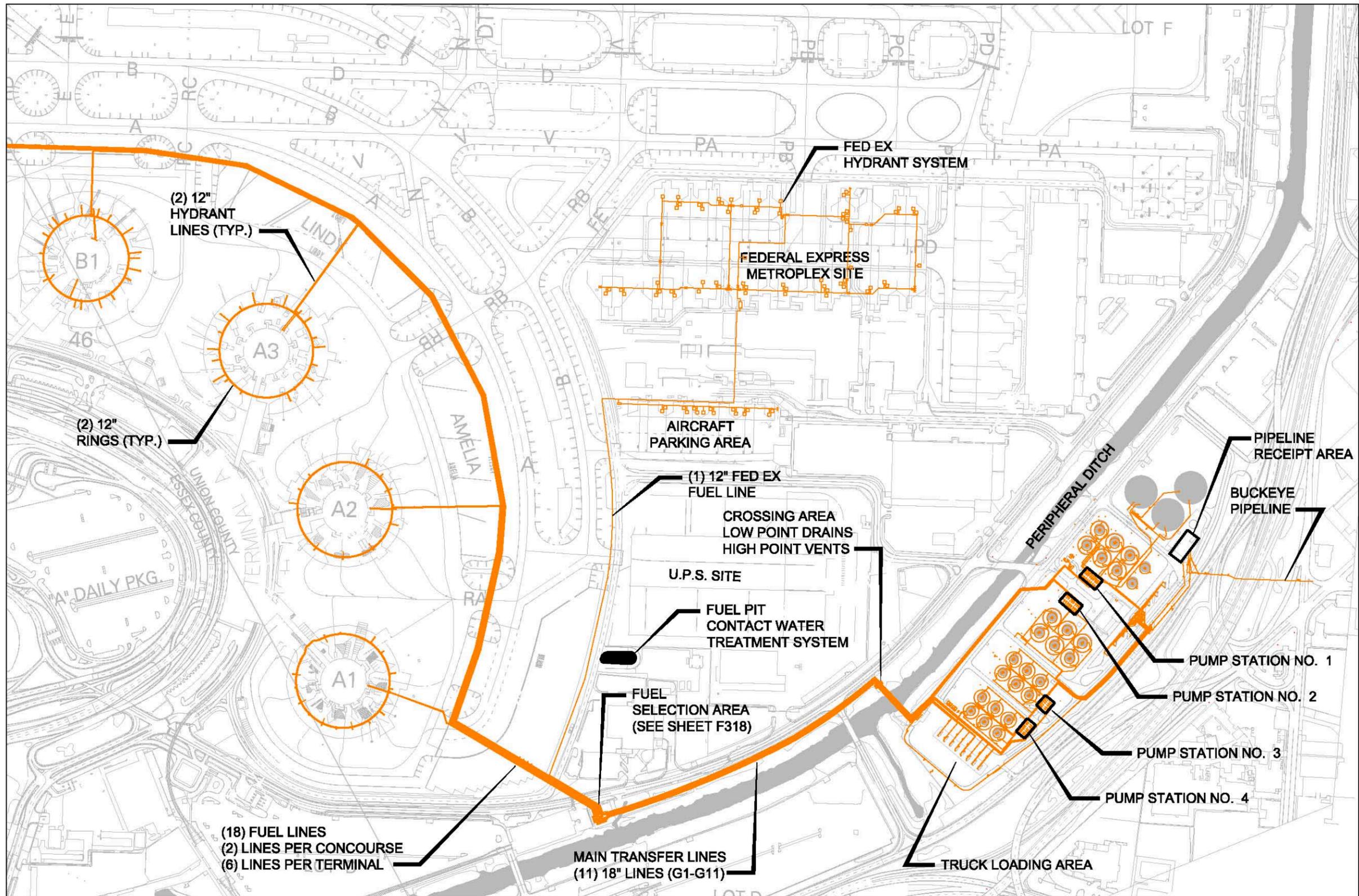


---

FIGURE 2: EXISTING FUEL SYSTEM (ZOOM-IN ON TERMINAL A AREA)

---

COPYRIGHT © NOTICE: THIS DOCUMENT IS THE PROPERTY OF ARGUS CONSULTING, INC. AND IS NOT TO BE PRODUCED OR COPIED IN WHOLE OR IN PART. IT IS ONLY TO BE USED FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN AND IS NOT TO BE USED FOR ANY OTHER PURPOSE OR ANY OTHER PROJECT. IT MUST BE RETURNED UPON REQUEST.



**EXISTING TERMINAL A AREA**



**ARGUS CONSULTING, INC.**

1300 NW Jefferson Court, Suite 100  
 Blue Springs, MO 64015  
 816.228.7500 FAX 816.228.7535  
 www.argusconsulting.com



ENGINEERING | PLANNING | MANAGEMENT

DRAWING NAME: EXISTING TERMINAL A AREA - FUEL SYSTEM EXTENTS

CLIENT: PANYNU

PROJECTING: 11070.00

DATE: 10/22/10

PROJECT: EWR - STAGE 1 REPORT

DWG. NO.: F111



---

FIGURE 3: PROJECT LOCATION KEY PLAN

---

**THE PORT AUTHORITY  
OF NY & NJ**

HATCH MOTT MACDONALD, LLC.

KIN CHOW  
N.J. Professional Engineer # 24GE03356700  
& Certificate of Authorization # 24GA28016600

**50% SUBMISSION**  
11/30/2012

No.	Date	Revision	Approved

ENGINEERING DEPARTMENT

**NEWARK LIBERTY  
INTERNATIONAL  
AIRPORT**

MECHANICAL

Title  
**FUEL SYSTEM MODIFICATIONS**

**AIRPORT FUELING  
MODIFICATIONS  
KEY PLAN**

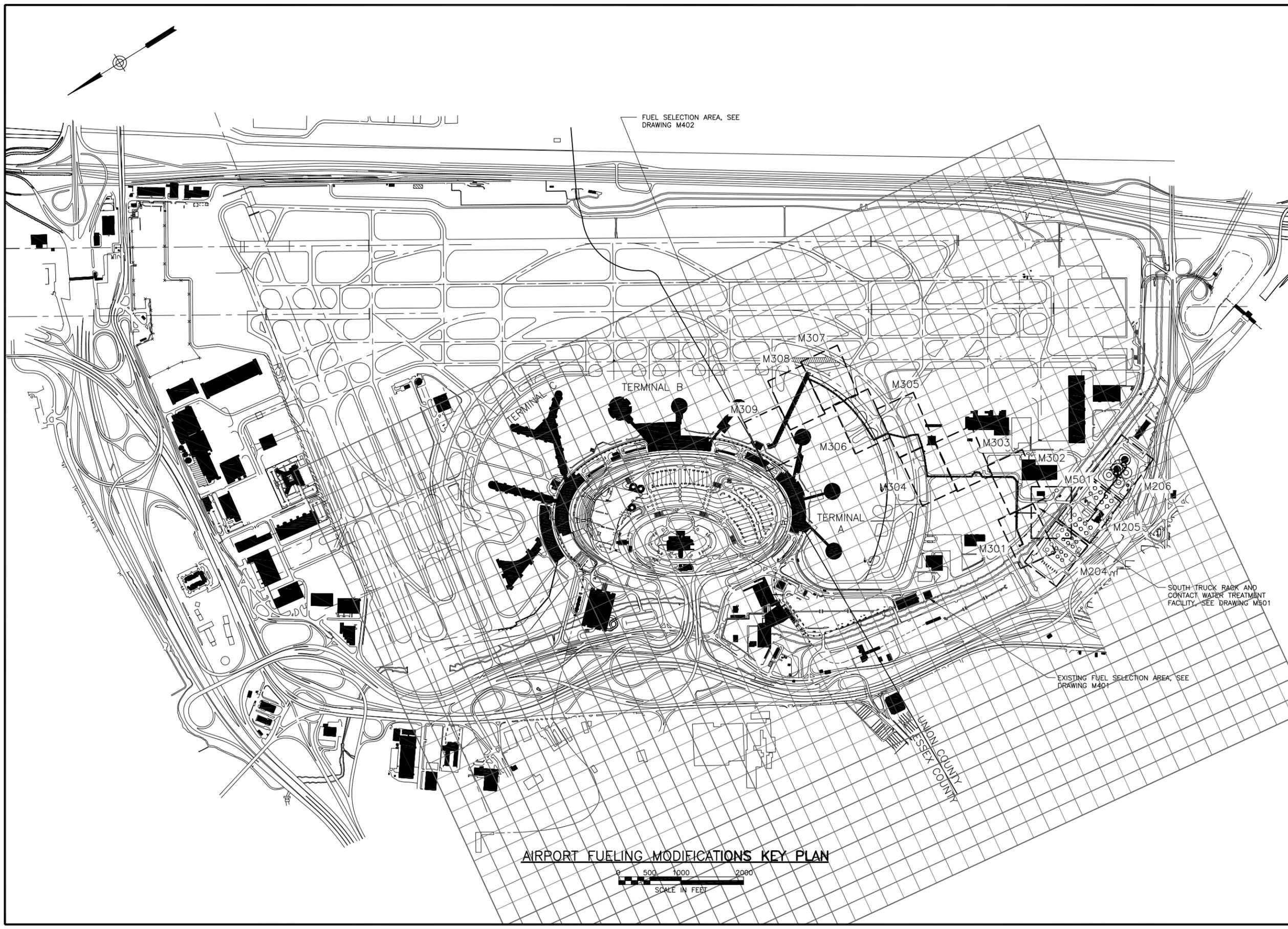
This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent. All recipients of Contract documents, including bidders and those who do not bid and their prospective subcontractors and suppliers who may receive all or a part of the Contract documents or copies thereof, shall make every effort to ensure the secure and appropriate disposal of the Contract documents to prevent further disclosure of the information contained in the documents. Secure and appropriate disposal includes methods of document destruction such as shredding or arrangements with refuse handlers that ensure that third persons will not have access to the documents' contents either before, during, or after disposal. Documents may also be returned for disposal purposes to the Contract Desk on the 3rd Floor, 3 Gateway Center, Newark, NJ 07102 or the office of the Director of Procurement, Two Montgomery Street, 3rd Floor, Jersey City, NJ 07302. It is a violation of law for any person to offer a document in any way, unless acting under the direction of a licensed professional engineer or registered architect. If this document bearing the seal of an engineer/architect is altered, the altering engineer/architect shall affix to the document their seal and the notation "altered by" followed by their signature and the date of such alteration, and a specific description of the alteration.

**K.CHOW**      **A.VROEGINDEW**      **J.RECCO**  
Designed by      Drawn by      Checked by

Date      11/30/2012

Contract Number      **EWR - 154.183**

Drawing Number      **M109**  
PID# 12316000



**AIRPORT FUELING MODIFICATIONS KEY PLAN**

0 500 1000 2000  
SCALE IN FEET

---

FIGURE 4: PROPOSED FUEL PIPE ROUTING (NEW)

---



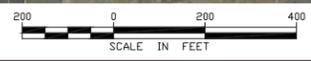
No.	Date	Revision	Approved

ENGINEERING DEPARTMENT			
NEWARK LIBERTY INTERNATIONAL AIRPORT			

Title  
FUEL SYSTEM MODIFICATIONS

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent. All recipients of Contract documents, including bidders and those who do not bid and their prospective subcontractors and suppliers who may receive all or a part of the Contract documents or copies thereof, shall make every effort to ensure the secure and appropriate disposal of the Contract documents to prevent further disclosure of the information contained in the documents. Secure and appropriate disposal includes methods of document destruction such as shredding or arrangements with refuse handlers that ensure that third persons will not have access to the documents' contents either before, during, or after disposal. Documents may also be returned for disposal purposes to the Contract Desk on the 3rd Floor, 3 Gateway Center, Newark, NJ 07102 or the office of the Director of Procurement, Two Montgomery Street, 3rd Floor, Jersey City, NJ 07302. It is a violation of law for any person to alter a document in any way, unless acting under the direction of a licensed professional engineer or registered architect. If this document bearing the seal of an engineer/architect is altered, the altering engineer/architect shall affix to the document their seal and the notation "altered by" followed by their signature and the date of such alteration, and a specific description of the alteration.

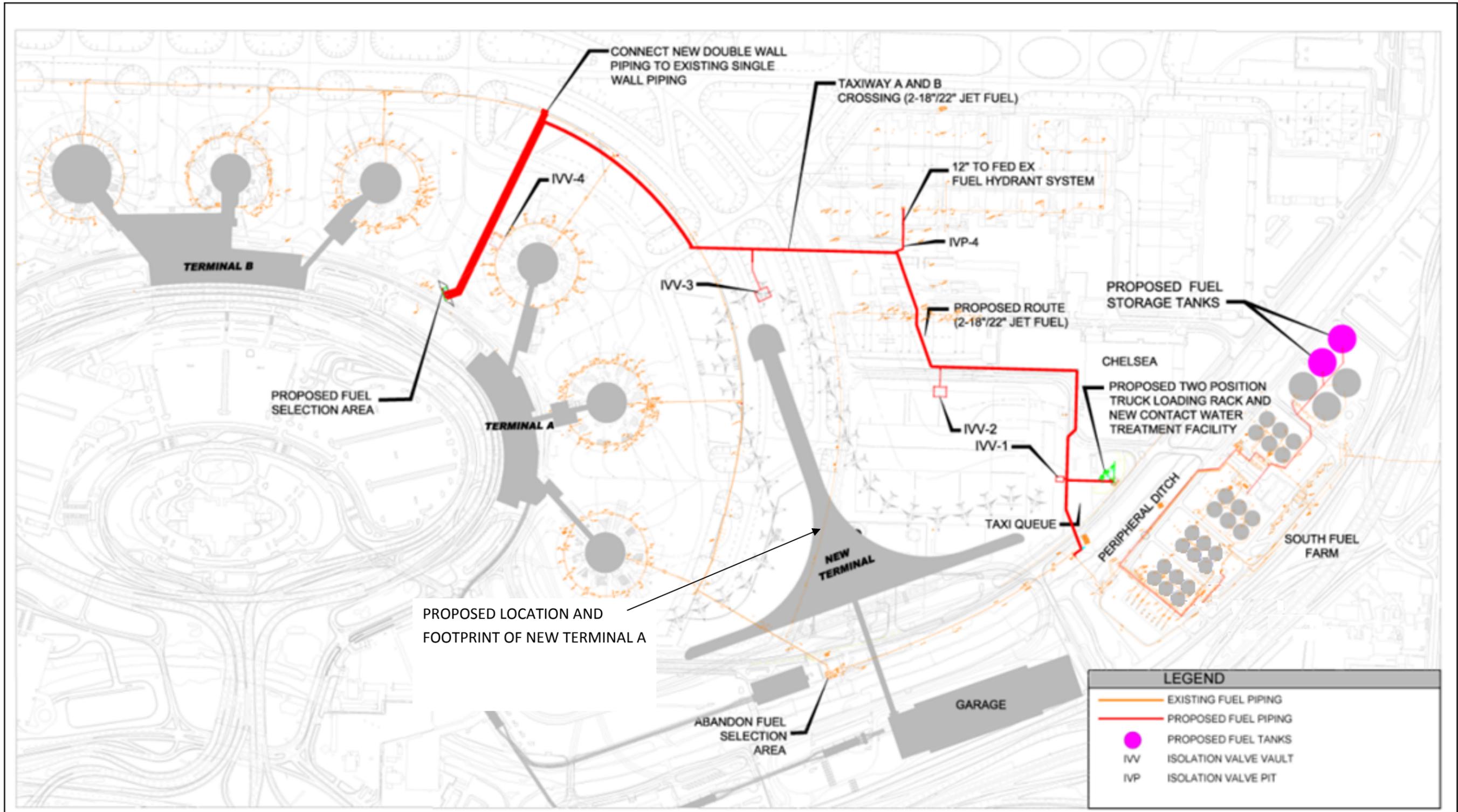
Designed by	Drawn by	Checked by
Date	MM/DD/YYYY	
Contract Number	EWR-154.183	
Drawing Number	PID# 12316000	



---

FIGURE 5: LOCATION OF PROJECT ELEMENTS IN RELATION TO PROPOSED LOCATION FOR NEW TERMINAL A

**FIGURE 5: Location of Project Elements**



---

**Attachment B**  
**Air Quality Analysis**

---

---

## **ATTACHMENT B**

### **GENERAL CONFORMITY RULE AND AIR EMISSIONS ANALYSIS**

#### **B.1 Clean Air Conformity**

The 1990 amendments to the Clean Air Act (CAA) require federal agencies to ensure that their actions conform to the appropriate State Implementation Plan (SIP) in a nonattainment area. The SIP provides for implementation, maintenance, and enforcement of the National Ambient Air Quality Standards (NAAQS); it includes emission limitations and control measures to attain and maintain the NAAQS. Conformity to a SIP, as defined in the CAA, means conformity to a SIP's purpose of reducing the severity and number of violations of the NAAQS to achieve attainment of the standards. The federal agency responsible for a proposed action is required to determine if its action conforms to the applicable SIP.

The US Environmental Protection Agency (USEPA) has developed two sets of conformity regulations; federal actions are differentiated into transportation projects and non-transportation-related projects:

- Transportation projects, which are governed by the “transportation conformity” regulations (40 C.F.R. §§ 51, 93), effective on December 27, 1993 and revised on August 15, 1997.
- Non-transportation projects, including those in an airport that require approval from the Federal Aviation Administration (FAA), which are governed by the “general conformity” regulations (40 C.F.R. §§ 6, 51, 93) described in the final rule for *Determining Conformity of General Federal Actions to State or Federal Implementation Plans* published in the *Federal Register* on November 30, 1993. The general conformity rule became effective January 31, 1994 and was revised on March 24, 2010.

This general conformity applicability analysis has been prepared for the Proposed Action of modifying and upgrading the aviation fueling system at Newark Liberty International Airport.

#### **B.2 General Conformity**

##### **B.2.1 Attainment and Nonattainment Areas**

The General Conformity Rule applies to federal actions occurring in air basins designated as nonattainment for the NAAQS or in attainment areas subject to maintenance plans (maintenance areas). Federal actions occurring in air basins that are in attainment with the NAAQS are not subject to the Conformity Rule.

A criterion pollutant is a pollutant for which an air quality standard has been established under the CAA. The designation of nonattainment is based on exceedances or violations of the air quality standard. A Maintenance Plan establishes measures to control emissions to ensure the air quality standard is maintained in areas that have been re-designated as attainment from a previous nonattainment status.

Under the requirements of the CAA, USEPA established NAAQS for six criteria pollutants: carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), inhalable particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), and lead (Pb).

Areas that meet the NAAQS for a criterion pollutant are designated as being in “attainment;” an area where a pollutant level exceeds the corresponding NAAQS is designated as being in “nonattainment.” O<sub>3</sub>

---

nonattainment areas are subcategorized based on the severity of their pollution problem (marginal, moderate, serious, severe, or extreme). PM<sub>10</sub> and CO nonattainment areas are classified as moderate or serious. When insufficient data exist to determine an area's attainment status, it is designated as unclassifiable (or in attainment).

The Proposed Action would take place at Newark Liberty International Airport, which lies within Essex and Union Counties, an area that is currently designated as a nonattainment area for PM<sub>2.5</sub>, a moderate nonattainment area for 8-hour O<sub>3</sub>, a maintenance area (former nonattainment area) for CO, and an attainment area for the other criteria pollutants. O<sub>3</sub> is principally formed from nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs) through chemical reactions in the atmosphere. SO<sub>2</sub> is considered a precursor of PM<sub>2.5</sub>.

### B.2.2 De Minimis Emissions Levels

To focus general conformity requirements on those federal actions with the potential to have significant air quality impacts, threshold (*de minimis*) rates of emissions were established in the Final Rule. A formal conformity determination is required when the annual net total of direct and indirect emissions from a federal action occurring in a nonattainment or maintenance area for a criterion pollutant would equal or exceed the annual *de minimis* level for that pollutant. Table B-1 lists the *de minimis* levels for each pollutant.

**Table B-1: De Minimis Emission Levels for Criteria Air Pollutants**

Pollutant	Nonattainment Designation	Tons/Year
Ozone*	Serious	50
	Severe	25
	Extreme	10
	Other nonattainment or maintenance areas outside ozone transport region	100
	Marginal and moderate nonattainment areas inside ozone transport region	50/100**
Carbon Monoxide	All	100
Sulfur Dioxide	All	100
Lead	All	25
Nitrogen Dioxide	All	100
Particulate Matter ≤ 10 microns	Moderate	100
	Serious	70
Particulate Matter ≤ 2.5 microns***	All	100

**Notes:** \* Applies to ozone precursors – volatile organic compounds (VOC) and nitrogen oxides (NO<sub>x</sub>)

\*\* VOC/NO<sub>x</sub>

\*\*\* Applies to PM<sub>2.5</sub> and its precursors.

For O<sub>3</sub> nonattainment areas, USEPA's conformity rules establish *de minimis* emission levels for both O<sub>3</sub> precursors, VOC and NO<sub>x</sub>, on the presumption that VOC and NO<sub>x</sub> reductions will contribute to reductions in O<sub>3</sub> formation. Since the Project Area is located in an O<sub>3</sub> moderate nonattainment area in an O<sub>3</sub> transport region, the *de minimis* levels of 100 tons per year (tpy) of NO<sub>x</sub> and 50 tpy of VOC apply.

---

For PM<sub>2.5</sub> nonattainment areas, USEPA's conformity rules establish *de minimis* emission levels for both PM<sub>2.5</sub> and its precursor, SO<sub>2</sub>. Although the Project Area is currently designated as in attainment for SO<sub>2</sub>, SO<sub>2</sub> was considered in the analysis as a precursor of PM<sub>2.5</sub>. The *de minimis* level of 100 tpy applies to both PM<sub>2.5</sub> and SO<sub>2</sub>. For CO maintenance areas, 100 tpy is the *de minimis* level.

### **B.2.3 Analysis**

This CAA General Conformity Rule (GCR) analysis was conducted according to the guidance contained in 40 C.F.R. §§ 6, 51, 93, *Determining Conformity of Federal Actions to State or Federal Implementation Plans* (USEPA, November 30, 1993 and March 24, 2010).

The analysis was performed to determine whether a formal conformity analysis would be required. Pursuant to the GCR, all reasonably foreseeable emissions (both direct and indirect) associated with the implementation of the project were quantified and compared to the applicable annual *de minimis* levels to determine potential air quality impacts.

The conformity analysis for a federal action examines the impacts of the direct and indirect net emissions from mobile and stationary sources. Direct emissions are emissions of a criterion pollutant or its precursors that are caused or initiated by a federal action and occur at the same time and place as the action. Indirect emissions, occurring later in time and/or further removed in distance from the action itself, must be included in the determination if both of the following apply:

- The federal agency can practicably control the emissions and has continuing program responsibility to maintain control.
- The emissions caused by the federal action are reasonably foreseeable.

Increased direct and indirect NO<sub>x</sub>, VOC, PM<sub>2.5</sub>, CO, and SO<sub>2</sub> emissions would result from the following potential demolition and construction activities:

- Use of diesel and gas-powered demolition and construction equipment.
- Movement of trucks containing construction and removed materials.
- Commuting of construction workers and PA inspectors.

## **B.3 Emissions Estimate**

The GCR requires that potential emissions generated by any project-related activity and/or increased operational activities be determined on an annual basis and compared to the annual *de minimis* levels for those pollutants (or their precursors) for which the area is classified as nonattainment or maintenance. Emissions attributable to activities related to the proposed project were analyzed for NO<sub>x</sub>, VOC, PM<sub>2.5</sub>, CO, and SO<sub>2</sub>.

### **B.3.1 Proposed Activities Resource Data Estimates**

Estimates as to construction crew and equipment requirements and productivity are based on data presented in

- *2003 RSMeans Facilities Construction Cost Data*, R.S. Means Co., Inc., 2002
  - *2011 RSMeans Facilities Construction Cost Data*, R.S. Means Co., Inc., 2010
-

---

The assumptions used in predicting construction activity data are based on the draft “*Project Description*” document. The proposed work includes:

- The below-grade installation of 12,450 feet of 18-inch trunk fuel line and 16,950 feet of 14-inch distribution line. Existing piping replaced by the new installation would be decommissioned and abandoned in place.
- The construction of a new fuel selection area on a 30-foot x 70-foot containment pad, covered with a canopy and surrounded by security fencing.
- A new truck loading rack and contact water treatment facility (CWTF). The truck rack would have two truck loading positions and the CWTF would have three truck parking positions, three 10,000-gallon double-walled holding tanks, a 1,500-gallon reclaim tank and a 4,000-gallon oil-water separator. Based on 6-foot tank heights, the holding tanks, overflow tank and oil-water separator would require about 1,200 square feet (sf) of space. Based on five truck parking positions (two for the loading rack, three for the CWTF) and a 1,000-sf footprint per truck parking position, the total footprint of the loading ramp/CWTF is therefore approximately 6,200 sf.
- Two 2-million gallon Jet A storage tanks would be constructed at the existing tank farm. Total of five new buried pipe segments would be installed in the South Fuel Farm: a 580 LF segment of 30-inch diameter piping, a 215 LF segment of 30-inch diameter piping, a 75 LF segment of 20-inch diameter piping, a 50 LF segment of 18-inch diameter piping, and a 450 LF segment of 12-inch diameter piping. One new aboveground pipe segment would also be installed consisting of 290 LF segment of 20-inch diameter. The planned work in the fuel farm would also include five new buried piping manifolds, of less than 10 ft in length each, connected to the existing single-wall buried pipelines.

The construction components considered include:

*Component No. 1 – Underground Fuel Piping:* A total of 12,450 feet of 18-inch trunk fuel line and 16,950 feet of 14-inch distribution line would be installed. Demolition of existing pavement, trenching, backfill and installation of new pavement is required. The new pipeline would be installed predominantly within the airfield and it would be installed at a minimum depth of 3 feet below subgrade, the airfield pavement section consists of 6 inches of crushed aggregate, 11 inches of bituminous base course and 3 inches of surface course (i.e., a 20-inch pavement section overlies a 36-inch deep trench in the subgrade for a total excavation depth of 56 inches). Based on excavation width of 5 feet, the total surface footprint of pipeline installation work is approximately 147,000 square feet. The construction elements for this component would include:

- Pavement demolition
- Demolished pavement hauling
- Sub-grade excavation
- Pipeline decommissioning
- Pipeline installation
- Backfill
- Crushed aggregate
- Airfield pavement

*Component No. 2 – Fuel Selection Area:* A 30-ft by 70-ft concrete containment pad with canopy over the fuel distribution manifold will be constructed. Total surface area is 2,100 sf. The construction elements include:

- Pavement demolition
  - Demolished pavement hauling
  - Gravel placement
-

- 
- Adding rebar
  - Pumping concrete
  - Security fencing installation
  - Canopy installation
  - Installation of selection manifold

*Component No. 3 – Truck Rack and CWTF:* A 6,200 sf paved area will be constructed airside to provide a fuel truck loading area and a replacement CWTF. The construction elements include:

- Pavement demolition
- Demolished pavement hauling
- Gravel placement
- Adding rebar
- Pumping concrete
- Installation of piping
- Installation of 3 above-ground 10,000-gallon double-wall tanks, and a 1,500-gallon double-wall tank and a 4,000-gallon oil-water separator
- Installation of piping for the CWTF

*Component No. 4 – Fuel Tanks:* Includes construction of two 2-million gallon above ground storage tanks. Assuming a tank height of 40 feet, the corresponding tank diameter is 92 feet. Diameter will be rounded up to 95 feet to allow additional freeboard. The total footprint of each tank is therefore 7,088 sf, or 14,176 sf total. There would be an excavation to a depth of 20 feet for the foundation of each tank. The construction elements include:

- Excavating
- Grading
- Concrete work
- Tank installation
- Upgrades to existing pump manifold

### **B.3.2 Equipment Operations and Emissions**

The quantity and type of construction equipment necessary were determined based on the activities necessary to implement the proposed action as described above. All equipment was assumed to be diesel-powered unless otherwise noted. Pieces of equipment to be used include, but are not limited to:

- Cranes (30- and 50-foot booms)
  - Front-End Loaders
  - 12-cubic yard Dump Trucks
  - Arc-Weld Trucks
  - Pavers
  - Concrete pumps
  - Graders
  - Rollers
  - X-Ray Testing Vehicle
-

- 
- PA Inspection vehicles

Estimates of equipment emissions were based on the estimated hours of usage and emission factors for each motorized source for the project. Although the entire construction activities are planned to occur over several years, the activity inputs were developed conservatively assuming all demolition and construction action would be compressed over one year. Emission factors for NO<sub>x</sub>, VOC, CO, CO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and SO<sub>2</sub> related to heavy-duty diesel equipment were obtained from the *NONROAD* emission factor model (USEPA, 2008).

The USEPA recommends the following formula to calculate hourly emissions from non-road engine sources including cranes, front end loaders, etc.:

$$M_i = N \times HP \times LF \times EF_i$$

where:

M<sub>i</sub> = mass of emissions of ith pollutants during inventory period;

N = source population (units);

HP = average rated horsepower;

LF = typical load factor; and

EF<sub>i</sub> = average emissions of ith pollutant per unit of use (e.g., grams per horsepower-hour).

Typical load factor values were obtained from the *NONROAD Model Emission Factor Worksheet* (USEPA, 2008).

### **B.3.3 Construction Vehicle Operations and Emissions**

Truck and commuting vehicle operations to and from the airport would result in indirect emissions. However, the only activities that are subject to the general conformity determination are vehicle operations within the airport. Motor vehicle operations are assumed and summarized as follows:

- Construction trucks would travel at an average speed of 25 miles per hour (mph) on site, for a total estimated on-airport run time of two hours per working day; and
- Each worker or inspector's commuter vehicle would take a 20-minute round trip to commute within the airport at an average speed of 25 mph.

Emission factors for motor vehicles were calculated for both trucks (modeled as heavy duty diesel vehicles) and commuter vehicles (modeled as light duty gasoline vehicles) using USEPA *MOVES* (in association with national default input parameters for Union County), a mobile source emission factor model developed by USEPA for the appropriate seasons applicable to each pollutant. These emission factors were then multiplied by the vehicle operational hours to determine motor vehicle emissions.

### **B.4 Compliance Analysis**

Based on this analysis of NO<sub>x</sub>, VOC, CO, PM<sub>2.5</sub>, PM<sub>10</sub> and SO<sub>2</sub> emissions performed in conjunction with the Final Rule of *Determining Conformity of Federal Actions to State or Federal Implementation Plans*, (USEPA, November 30, 1993 and March 24, 2010), the proposed action would not require a formal conformity determination. The conservative results, assuming the total emissions predicted from demolition and construction activities, would occur only within one year although they are planned to occur between 2014 through 2016. As shown in **Table B-2**, the results show no exceedances of the applicable *de minimis* criteria of 100 tpy for NO<sub>x</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and CO, and 50 tpy of VOC. Therefore, the Proposed Action would have minimal air quality impacts and would not require a formal conformity determination.

---

---

**Table B-2: Total Construction Emissions**

<b>Emissions (tons)</b>					
<b>Type</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>PM2.5</b>	<b>SO<sub>2</sub></b>
Non-Road Equipment Emission	0.56	8.41	2.05	0.28	0.34
On-Road Vehicle Emission	0.10	1.15	1.55	0.09	0.01
<b>Total Emission</b>	<b>0.66</b>	<b>9.56</b>	<b>3.60</b>	<b>0.37</b>	<b>0.34</b>
<i>Annual De Minimis Level</i>	<i>50</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>

---

## REFERENCES

Federal Aviation Administration, September 2004, *Air Quality Procedures for Civilian Airports & Air Force Bases*.

R.S. Means Co., 2002, *2003 R.S. Means Facilities Construction Cost Data*.

R.S. Means Co., 2010, *2011 R.S. Means Facilities Construction Cost Data*.

US Environmental Protection Agency (USEPA), November 30, 1993, 40 C.F.R. §§ 6, 51, 93, *Determining Conformity of Federal Actions to State or Federal Implementation Plans, Federal Register*.

USEPA, March 24, 2010, 40 C.F.R. §§ 51, 93, *Revision to the General Conformity Rule*.

USEPA, July 17, 200, 40 C.F.R. §§ 51, 93, *PM2.5 De Minimis Emission Levels for General Conformity Applicability, Federal Register*.

USEPA, June 2012, *Motor Vehicle Emission Simulator (MOVES) User Guide for MOVES2010b*.

USEPA, December 31, 2008, *Nonroad Model Emission Factor Worksheet*.

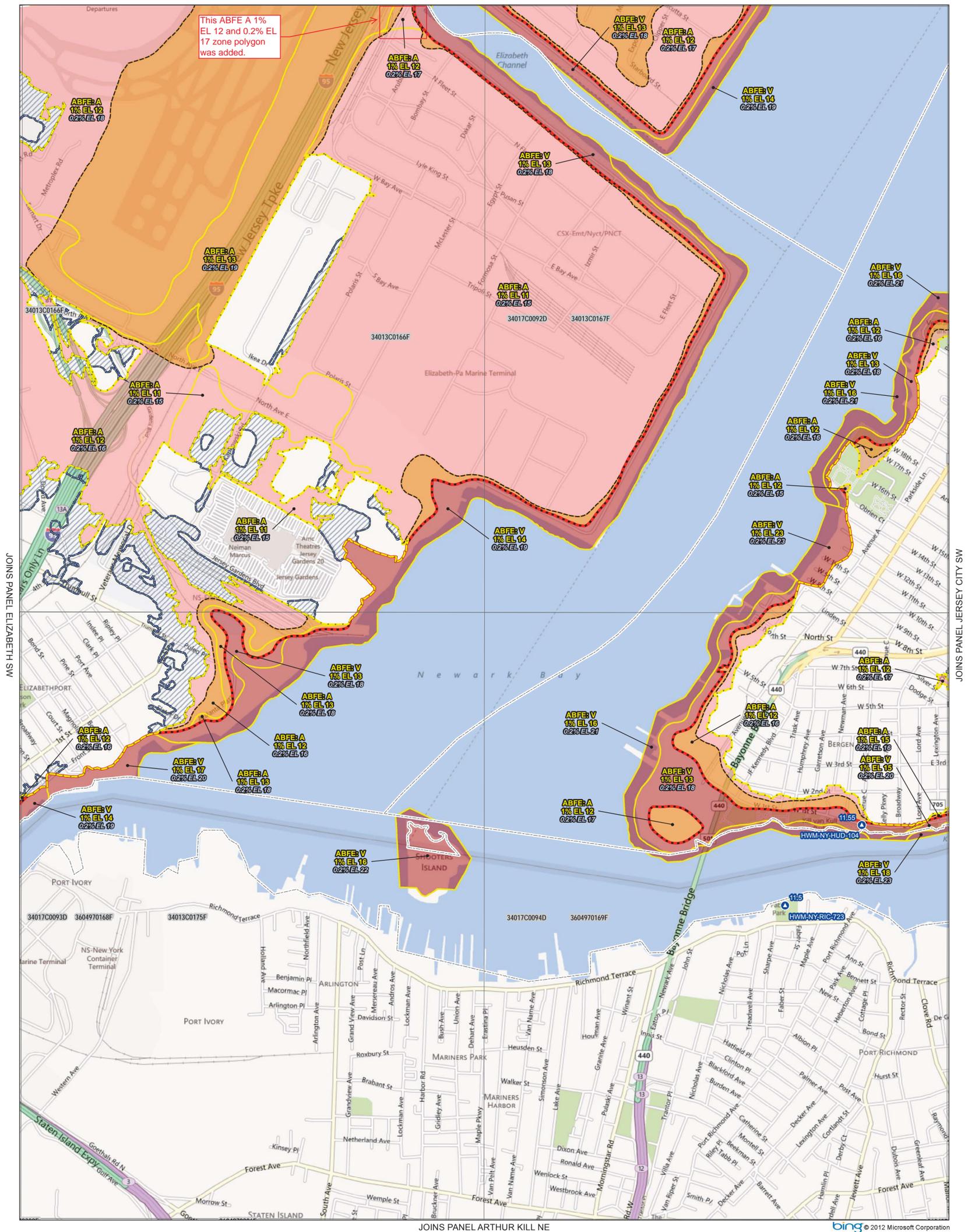
---

---

**Attachment C**  
**FEMA Base Flood Elevation Maps**

---

JOINS PANEL ELIZABETH NE



JOINS PANEL ARTHUR KILL NE

### ADVISORY BASE FLOOD ELEVATIONS

This map shows Advisory Base Flood Elevations (ABFEs) developed by FEMA. Use the QR code to the right, or navigate to <http://www.region2coastal.com/> for more information on how they were determined.

These ABFEs can serve as a guide to understanding current coastal flood hazard risk and the elevations that communities should build to in order to protect themselves from future flood events. As part of the long term recovery effort, the ABFEs are a tool for Federal, State, and local officials, building officials, builders and architects, insurance professionals, and property owners to make informed decisions during rebuilding and to mitigate losses from future flood events, safeguard lives, and protect the private and public investment in rebuilding.

**NOTES**

<sup>1</sup> Measured in feet relative to the North American Vertical Datum of 1988 (NAVD88). To convert from NAVD88 to the National Geodetic Vertical Datum of 1929, add the following county-wide value(s): City of New York (1.1 ft), Essex (1 ft), Union (1.0 ft), and Hudson (1.1 ft)

<sup>2</sup> Each whole-foot 1% annual chance Advisory Base Flood Elevation shown applies to all properties located in the mapped zone, with zone boundaries outlined in yellow.

<sup>3</sup> Each whole-foot 0.2% annual chance Advisory Base Flood Elevation shown applies to all properties located in the mapped zone, with zone boundaries outlined in yellow.

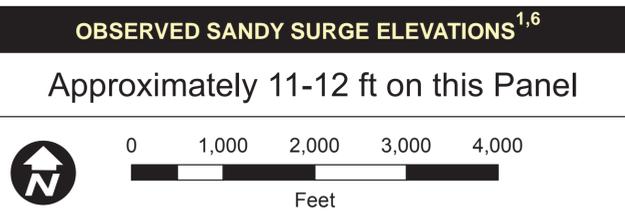
<sup>4</sup> Depicts the extent of the "Coastal A Zone" or area of moderate wave action where wave heights are between 1.5 and 3 feet. The FEMA Coastal Construction Manual, American Society of Civil Engineers, and the 2012 International Residential Building Code recommend Zone VE construction practices in this area.

<sup>5</sup> Depicts the extent of the Coastal Barrier Resources Act (CBRA). CBRA System Units are shown on this map to advise users where Federal funding is unavailable for repairing or rebuilding substantially damaged structures. For official delineations of the CBRA, please refer to the U.S. Fish and Wildlife Service at <http://www.fws.gov/cbra/>

**Data Sources:**

<sup>6</sup> Sandy Surge Elevations: U.S. Geological Survey Rapid Deployment Gauges and High Water Marks (Provisional data retrieved on 11/27/2012). Current data can be found at: <http://water.usgs.gov/floods/events/2012/sandy/>; Base Map: Bing Maps Road; Stillwater Elevations: Preliminary Coastal FEMA Flood Insurance Study Update for New York City and New Jersey, 2012; Storm Track: NOAA National Weather Service

The elevations shown on this map are considered best available data until issuance of updated Flood Insurance Rate Maps.

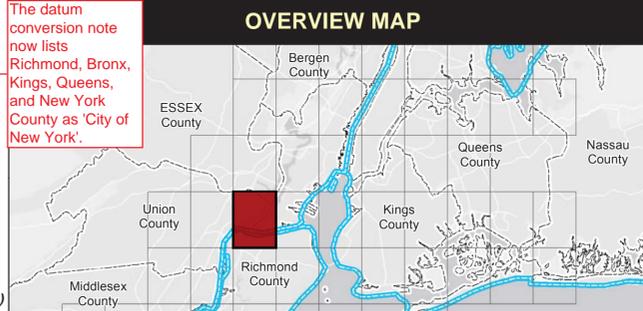


### USAGE

### LEGEND

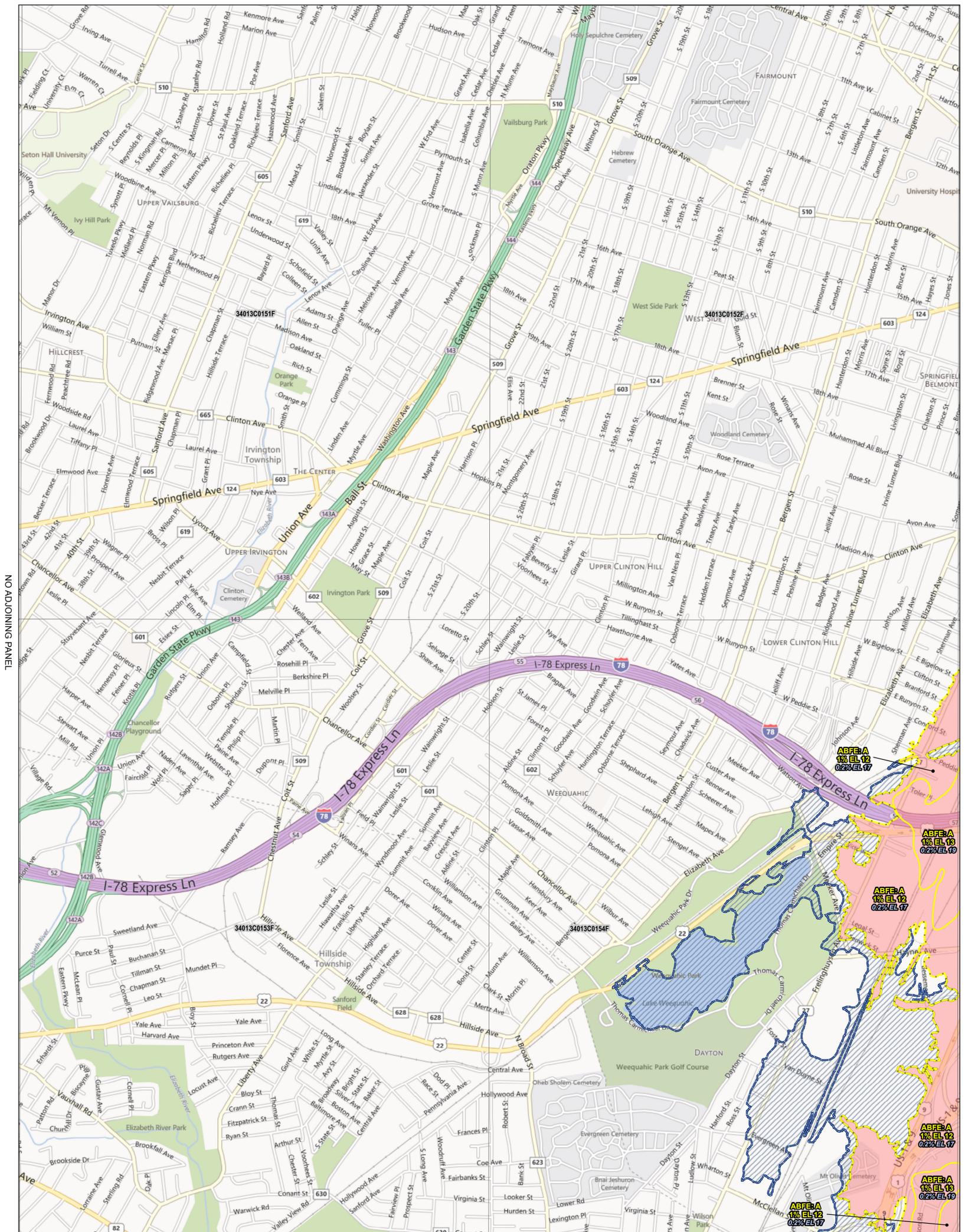
- Flood Advisory Related Data**
- Advisory Base Flood Elevation Zone (ABFE)<sup>2</sup>
  - 1% Advisory Base Flood Elevation, feet<sup>1,2</sup>
  - 0.2% Advisory Base Flood Elevation, feet<sup>1,3</sup>
  - Advisory Flood Hazard Zone V
  - Area of Moderate Wave Action
  - Advisory Flood Hazard Zone A
  - Advisory Limit of the 1% Annual Chance Flood Hazard Area<sup>4</sup>
  - Advisory Limit of the 0.2% Annual Chance Flood Hazard Area<sup>4</sup>
  - Advisory Shaded Zone X
  - Effective FIRM Panel Boundary
- Hurricane Sandy Related Data**
- Provisional Hurricane Sandy Surge Elevation<sup>1,6</sup>
- Geographic Boundaries**
- CBRA<sup>5</sup>
  - County

### OVERVIEW MAP



**MAPS FOR ADVISORY PURPOSES ONLY - NOT FOR INSURANCE RATING PURPOSES**  
For insurance rating purposes refer to the effective Flood Insurance Rate Map (FIRM), available from your local floodplain administrator or the FEMA Map Service Center (<http://msc.fema.gov>)

NO ADJOINING PANEL



NO ADJOINING PANEL

JOINS PANEL ELIZABETH NE

JOINS PANEL ELIZABETH SW

bing © 2012 Microsoft Corporation

### ADVISORY BASE FLOOD ELEVATIONS

This map shows Advisory Base Flood Elevations (ABFEs) developed by FEMA. Use the QR code to the right, or navigate to <http://www.region2coastal.com/> for more information on how they were determined.

These ABFEs can serve as a guide to understanding current coastal flood hazard risk and the elevations that communities should build to in order to protect themselves from future flood events. As part of the long term recovery effort, the ABFEs are a tool for Federal, State, and local officials, building officials, builders and architects, insurance professionals, and property owners to make informed decisions during rebuilding and to mitigate losses from future flood events, safeguard lives, and protect the private and public investment in rebuilding.

**NOTES**

<sup>1</sup> Measured in feet relative to the North American Vertical Datum of 1988 (NAVD88). To convert from NAVD88 to the National Geodetic Vertical Datum of 1929, add the following county-wide value(s): Essex (1 ft), and Union (1.0 ft)

<sup>2</sup> Each whole-foot 1% annual chance Advisory Base Flood Elevation shown applies to all properties located in the mapped zone, with zone boundaries outlined in yellow.

<sup>3</sup> Each whole-foot 0.2% annual chance Advisory Base Flood Elevation shown applies to all properties located in the mapped zone, with zone boundaries outlined in yellow.

<sup>4</sup> Depicts the extent of the "Coastal A Zone" or area of moderate wave action where wave heights are between 1.5 and 3 feet. The FEMA Coastal Construction Manual, American Society of Civil Engineers, and the 2012 International Residential Building Code recommend Zone VE construction practices in this area.

<sup>5</sup> Depicts the extent of the Coastal Barrier Resources Act (CBRA). CBRA System Units are shown on this map to advise users where Federal funding is unavailable for repairing or rebuilding substantially damaged structures. For official delineations of the CBRA, please refer to the U.S. Fish and Wildlife Service at <http://www.fws.gov/cbra/>

**Data Sources:**

<sup>6</sup> Sandy Surge Elevations: U.S. Geological Survey Rapid Deployment Gauges and High Water Marks (Provisional data retrieved on 11/27/2012). Current data can be found at: <http://water.usgs.gov/floods/events/2012/sandy/>; Base Map: Bing Maps Road; Stillwater Elevations: Preliminary Coastal FEMA Flood Insurance Study Update for New York City and New Jersey, 2012; Storm Track: NOAA National Weather Service

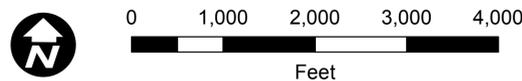
**MAPS FOR ADVISORY PURPOSES ONLY - NOT FOR INSURANCE RATING PURPOSES**  
For insurance rating purposes refer to the effective Flood Insurance Rate Map (FIRM), available from your local floodplain administrator or the FEMA Map Service Center (<http://msc.fema.gov>)

### USAGE

The elevations shown on this map are considered best available data until issuance of updated Flood Insurance Rate Maps.

### OBSERVED SANDY SURGE ELEVATIONS<sup>1,6</sup>

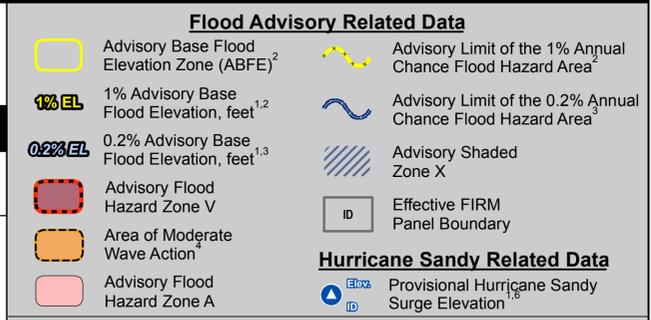
No data available for this panel



**LEGEND**

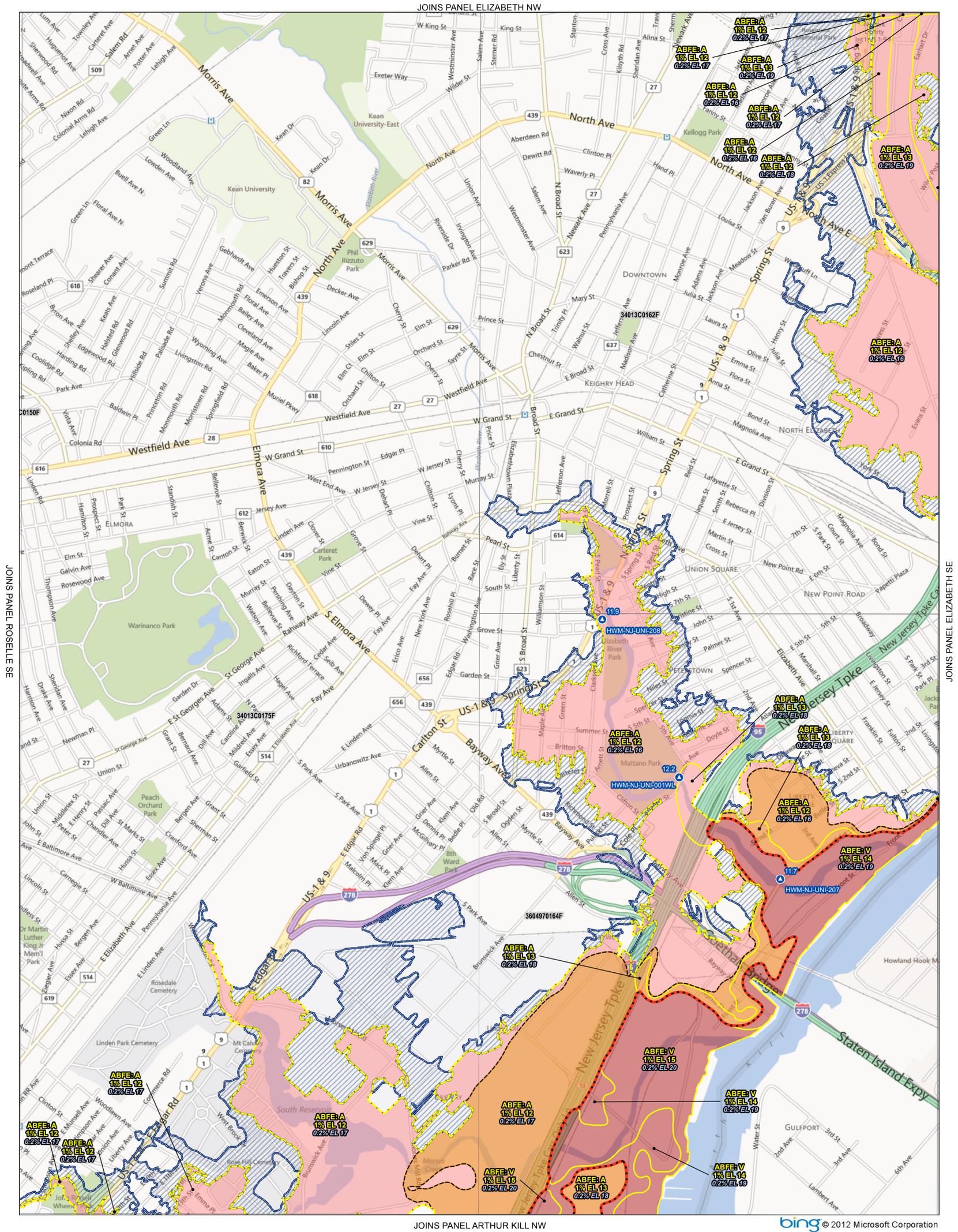
- Advisory Base Flood Elevation Zone (ABFE)<sup>2</sup>
- 1% EL<sup>1,2</sup>
- 0.2% EL<sup>1,3</sup>
- Advisory Flood Hazard Zone V
- Area of Moderate Wave Action<sup>4</sup>
- Advisory Flood Hazard Zone A
- Advisory Limit of the 1% Annual Chance Flood Hazard Area<sup>5</sup>
- Advisory Limit of the 0.2% Annual Chance Flood Hazard Area<sup>5</sup>
- Advisory Shaded Zone X
- Effective FIRM Panel Boundary
- Hurricane Sandy Related Data
- Provisional Hurricane Sandy Surge Elevation<sup>6</sup>

### LEGEND



### Geographic Boundaries





#### ADVISORY BASE FLOOD ELEVATIONS

This map shows Advisory Base Flood Elevations (ABFEs) developed by FEMA. Use the QR code to the right, or navigate to <http://www.region2coastal.com/> for more information on how they were determined.

These ABFEs can serve as a guide to understanding current coastal flood hazard risk and the elevations that communities should build to in order to protect themselves from future flood events. As part of the long term recovery effort, the ABFEs are a tool for Federal, State, and local officials, building officials, builders and architects, insurance professionals, and property owners to make informed decisions during rebuilding and to mitigate losses from future flood events, safeguard lives, and protect the private and public investment in rebuilding.

**NOTES**

<sup>1</sup> Measured in feet relative to the North American Vertical Datum of 1988 (NAVD88). To convert from NAVD88 to the National Geodetic Vertical Datum of 1929, add the following county-wide value(s): Union (1.0 ft), Essex (1 ft), and Richmond (1.1 ft)

<sup>2</sup> Each whole-foot 1% annual chance Advisory Base Flood Elevation shown applies to all properties located in the mapped zone, with zone boundaries outlined in yellow.

<sup>3</sup> Each whole-foot 0.2% annual chance Advisory Base Flood Elevation shown applies to all properties located in the mapped zone, with zone boundaries outlined in yellow.

<sup>4</sup> Depicts the extent of the "Coastal A Zone" or area of moderate wave action where wave heights are between 1.5 and 3 feet. The FEMA Coastal Construction Manual, American Society of Civil Engineers, and the 2012 International Residential Building Code recommend Zone VE construction practices in this area.

<sup>5</sup> Depicts the extent of the Coastal Barrier Resources Act (CBRA). CBRA System Units are shown on this map to advise users where Federal funding is unavailable for repairing or rebuilding substantially damaged structures. For official delineations of the CBRA, please refer to the U.S. Fish and Wildlife Service at <http://www.fws.gov/cbra/>

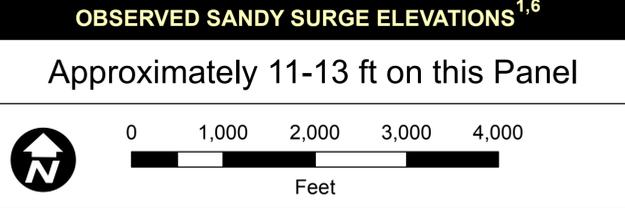
**Data Sources:**

<sup>6</sup> Sandy Surge Elevations: U.S. Geological Survey Rapid Deployment Gauges and High Water Marks (Provisional data retrieved on 11/27/2012). Current data can be found at: <http://water.usgs.gov/floods/events/2012/sandy/>; Base Map: Bing Maps Road; Stillwater Elevations: Preliminary Coastal FEMA Flood Insurance Study Update for New York City and New Jersey, 2012; Storm Track: NOAA National Weather Service

**MAPS FOR ADVISORY PURPOSES ONLY - NOT FOR INSURANCE RATING PURPOSES**  
For insurance rating purposes refer to the effective Flood Insurance Rate Map (FIRM), available from your local floodplain administrator or the FEMA Map Service Center (<http://msc.fema.gov>)

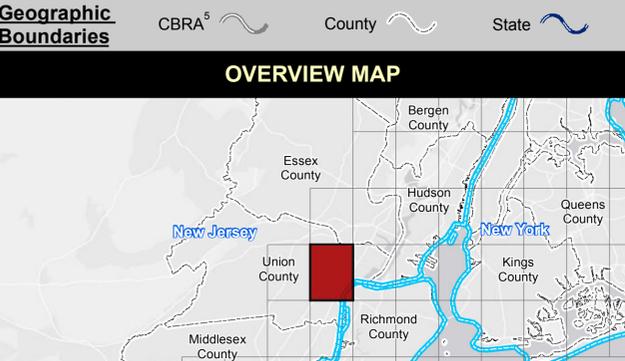
#### USAGE

The elevations shown on this map are considered best available data until issuance of updated Flood Insurance Rate Maps.



#### LEGEND

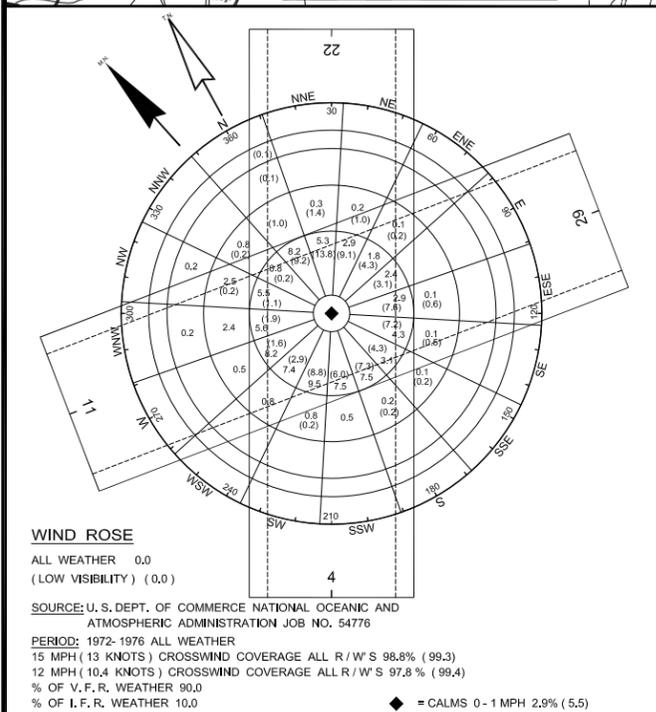
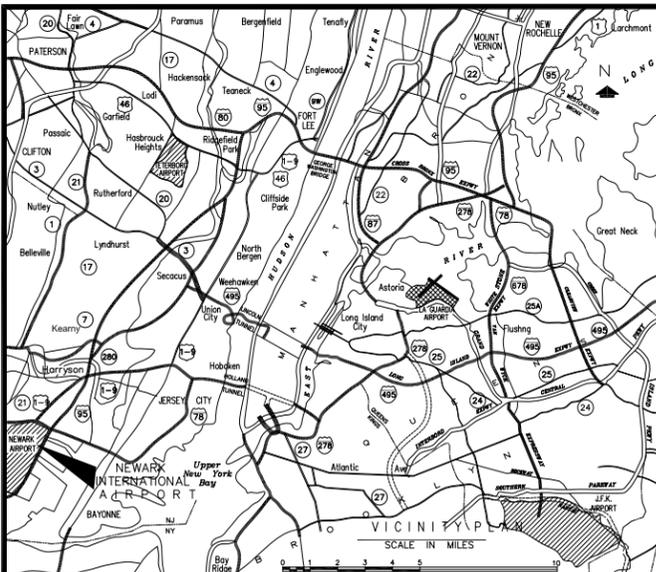
- |  |   |
|--|---|
| Advisory Base Flood Elevation Zone (ABFE) <sup>2</sup> | Advisory Limit of the 1% Annual Chance Flood Hazard Area <sup>2</sup>   |
| 1% EL <sup>1,2</sup>                                   | Advisory Limit of the 0.2% Annual Chance Flood Hazard Area <sup>2</sup> |
| 0.2% EL <sup>1,3</sup>                                 | Advisory Shaded Zone X  |
| Advisory Flood Hazard Zone V                           | Effective FIRM Panel Boundary   |
| Area of Moderate Wave Action                           | <b>Hurricane Sandy Related Data</b>                                     |
| Advisory Flood Hazard Zone A                           | Provisional Hurricane Sandy Surge Elevation <sup>1,6</sup>              |
| <b>Geographic Boundaries</b>                           | CBRA <sup>5</sup>   |
|  | County  |
|  | State   |



---

# **Attachment D Airport Layout Plan**

---

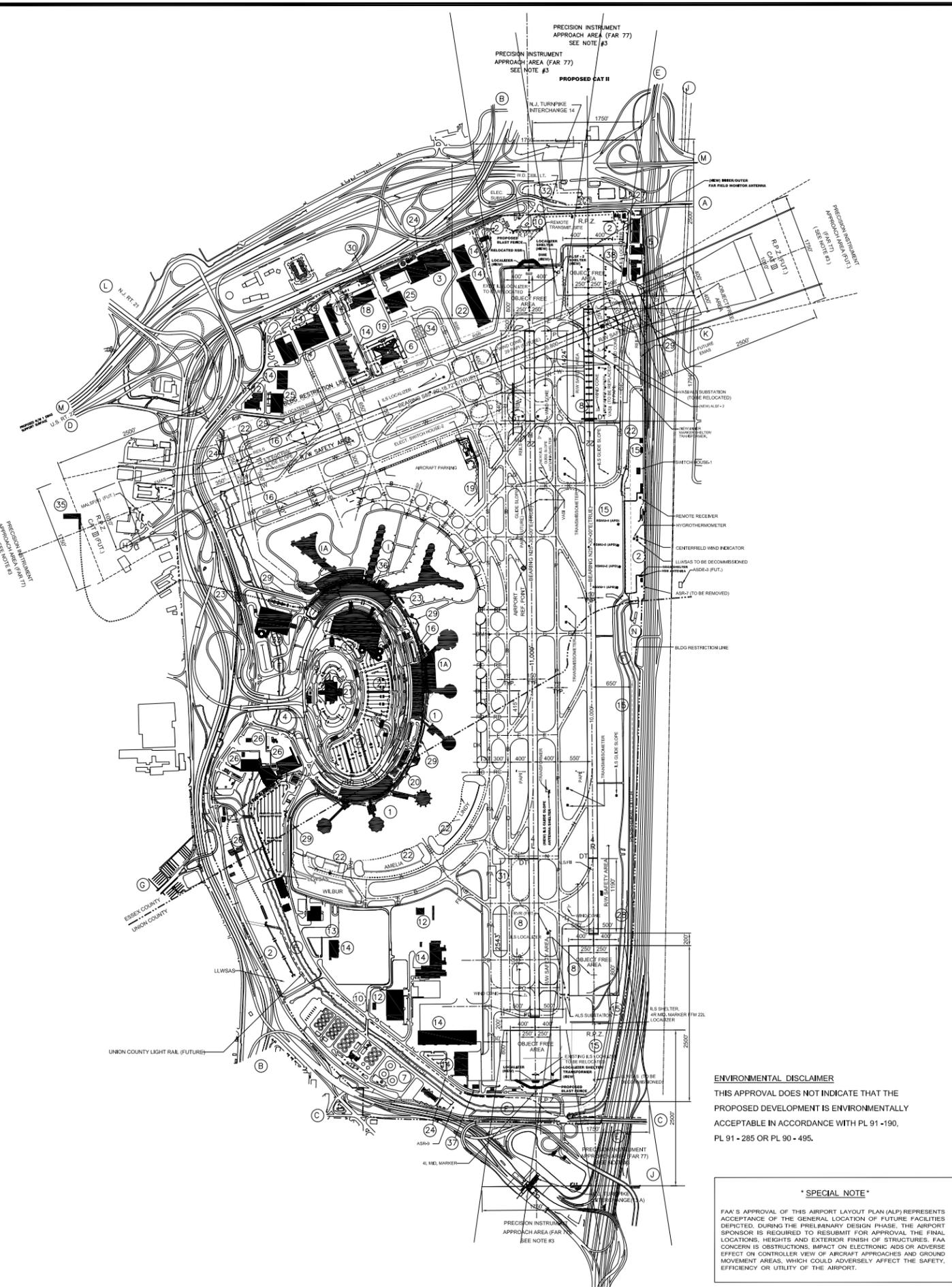


**AIRPORT DATA**  
 AIRPORT ELEVATION - 18.3'  
 AIRPORT REFERENCE POINT (A.R.P.) COORDINATES - LAT. 40 41' 31.805" LONG. 74 10' 07.951"  
 NORMAL MAX. TEMP. OF HOTTEST MONTH - 85.6 F  
 RUNWAY END ELEVATIONS & COORDINATES:  
 4L - 11.3' LAT.-40 40' 31.3716" LONG.-74 10' 46.0209" 4R - 11.5' LAT.-40 40' 39.2984" LONG.-74 10' 27.2915"  
 22L - 10.3' LAT.-40 42' 08.2439" LONG.-74 09' 30.7306" 22R - 10.6' LAT.-40 42' 09.2091" LONG.-74 09' 43.8255"  
 11 - 18.3' LAT.-40 42' 10.0955" LONG.-74 10' 50.5467" 29 - 10.3' LAT.-40 42' 04.2544" LONG.-74 09' 22.5943"

RUNWAY DATA	R/W 4L-22R	R/W 4R-22L	R/W 11-29
R/W LANDING LENGTH	8,457' / 9,576'	8,810' / 8,206'	6,800' / 6,502'
EFF. R/W GRADIENT IN %	0	0	.1
% WIND COVERAGE	92.8	92.8	96.6
INSTRUMENT R/W	YES	YES	YES
APPROACH SLOPES	50:1	50:1	50:1
LIGHTING	HIGH INT. EDGE CTRNL. TDZ-4L-22R	HIGH INT. EDGE CTRNL. TDZ-4R-22L	EDGE - HIGH INT. CTRNL.
MARKING	PRECISION INSTRUMENT		
PAVEMENT STRENGTH	210,000 # D + 498,000 # FT +		
NAVIGATIONAL AIDS	PAPI-3' ILS REIL MALSR	PAPI-3' ILS REIL ALSIF-2	PAPI-3' ILS REIL MALSR

\* D-DUAL WHEEL, DT-DUAL TANDEM, DT/CL-DT WITH CTRNL GEAR, DDT-DOUBLE DT, TT-TRIPLE TANDEM  
 \*\* ADDITIONAL AIDS: TOWER, FSS, WEATHER, VOR, ASR, RVR, ASDI, TAXIWAY LIGHTING-CENTERLINE OR EDGE, WIND CONES, LOW LEVEL WIND SHEAR ALERT SYSTEM

**NOTES:**  
 1. ALL ELEVATIONS SHOWN ARE IN FEET ABOVE MEAN SEA LEVEL AT SANDY HOOK, N. J. AS ESTABLISHED BY THE NATIONAL OCEAN SURVEY  
 2. P. A. DATUM NEWARK INTERNATIONAL AIRPORT ELEV. 300.00' IS MEAN HIGH WATER AT THE BATTERY WHICH IS EQUAL TO 2.65' ABOVE M.S.L. AT SANDY HOOK  
 3. FOR ACTUAL APPROACH CONDITIONS SEE CURRENT EWR OBSTRUCTION CHART (OC) 285.  
 4. GROOVES: R/W 4R-22R, R/W 4R-22L, R/W 11-29  
 5. CFR ACCESS AT R/W END PROVIDED ON GROUND STABILIZED BY EROSION PAVEMENT EXCEPT WHERE C.F.R. ROAD IS SHOWN  
 6. LATITUDE & LONGITUDE DATA REFER TO NORTH AMERICAN DATUM 1983-(NAD-1983)



**INDEX:**

- A. PORT STREET
- B. U.S. RT. 1-9
- C. NORTH AVENUE
- D. U.S. RT. 22
- E. NEW JERSEY TURNPIKE
- F. PERIPHERAL DITCH
- G. Mc CLELLAN STREET
- H. HAYNES AVENUE
- J. CONRAIL - NEWARK AND ELIZABETH BRANCH
- K. PORT NEWARK
- L. N.J. RT. 21
- M. RT. 1-78
- N. CITY OF NEWARK PUMP STATION SITE
- P. N.J. RT. 81

**LEGEND:**

- AIRPORT BOUNDARY LINE
- - - - - FUTURE CONSTRUCTION
- ▨ UNDER CONSTRUCTION
- ▩ TO BE DEMOLISHED
- D. T. DISPLACED THRESHOLD
- H HELIPAD
- LIGHT RAIL STATION
- ..... MONORAIL
- R.P.Z. RUNWAY PROTECTION ZONE
- - - - - UNION COUNTY LIGHT RAIL (UNDER STUDY)
- - - - - SECURITY FENCE

**HIGHWAYS & ROADWAYS:**

- ==== EXISTING
- ▨ UNDER CONSTRUCTION
- - - - - FUTURE

1. PASSENGER TERMINAL
- 1A. INTERNATIONAL FACILITY
2. AUTO PARKING (PUBLIC)
3. AIRCRAFT MAINT. BASE FACILITIES
4. CONTROL TOWER
5. AIRPORT SERVICE & MAINTENANCE AREA
6. EMERGENCY EQUIPMENT GARAGE (CFR BLDG.)
7. FUEL STORAGE AREA
8. APPROACH LIGHTING SYSTEM
9. NAVIGATION AIDS & WEATHER FACILITIES
10. AUTO SERVICE STATION
12. ANCILLARY BUILDINGS
13. U. S. P. S. FACILITY
14. CARGO FACILITIES
15. PATROL ROAD
16. RESTRICTED SERVICE ROADS
17. PUBLIC SERVICE ROADS
18. G.A. FACILITIES
19. P.A. ADMINISTRATION BUILDING
20. HEATING & REFRIG. PLANT
21. HOTEL
22. AIRCRAFT PARKING
23. MONORAIL
24. BREWSTER ROAD
25. HANGAR
26. RENTAL CAR AREAS
27. MEDICAL BUILDING
28. C.F.R. ACCESS ROAD
29. BLAST FENCE
30. OFFICE BUILDING (P.A.)
31. SECONDARY DE - ICING AREA
32. IMPOUND LOT
33. GARAGE
34. DE - ICING FACILITY (INFRARED)
35. NORTHEAST CORRIDOR (NEC) STATION
36. RAMP CONTROL TOWER
37. SUB STATION #3
38. CENTRAL AUTOMOTIVE (CAD) STORAGE BUILDING

NO.	DATE	BY	REVISION	DESCRIPTION
HJM.M.XU	12	02/03/90	T.S.M.	PEN & INK CHANGES: INSTALLATION OF NEW RUNWAY 22L INNER MARKER, SHELTER, INNER/OUTER FAR FIELD MONITOR ANTENNA, ALSIF-2. APPROACH 22L - PROPOSED CAT IIIBL RELOCATION OF RUNWAY 22R LOCALIZER and SHELTER, ILS GLIDE SLOPE and SHELTER, TRANSFORMER, BLAST FENCE. RELOCATION OF RUNWAY 4L LOCALIZER and SHELTER, DME ILS GLIDE SLOPE and SHELTER, TRANSFORMER, BLAST FENCE.
HJM.M.XU	11	10/25/85	T.S.M.	RELOCATION OF RUNWAY 4L LOCALIZER and SHELTER, DME ILS GLIDE SLOPE and SHELTER, TRANSFORMER, BLAST FENCE. APPROACH 4L - PROPOSED CAT II GBAS (GROUND BASED AUGMENTATION SYSTEM). RUNWAY 22R - MULTIPLE TAXIWAY ENTRANCE IMPROVEMENTS. DEMOLISH INFRARED DECKING STRUCTURE. PROPOSED CONTINENTAL HANGAR. EMAS at RUNWAY 11 OVERRUN.
Z.DEGULLA	10	10/25/84	T.S.M.	PEN & INK CHANGES: WIDEN TAXIWAY FILETS, EXPANSION OF TERM. B B2 & B3 CONNECTORS WIDENING, PROPOSED R/W 29-11 BOTH ENDS EMAS, UPDATED TAXIWAYS "B", "RM", "Y", "W", "N", "O", "P", "A" & "V", TERMINAL "B" ROADWAY IMPROVEMENTS, SECURITY FENCE AT PERIPHERAL DITCH.
Z.DEGULLA	9	08/04/84	T.S.M.	PEN & INK CHANGES - B-1 CONNECTOR WIDENING
Z.DEGULLA	8	01/22/83	M.A.B.	PEN & INK CHANGES, "W", "U", "A" & "B" DECOM. "W" "ZB", SUBS.#3, CASB.
Z.DEGULLA	7	08/15/82	T.S.M.	PEN & INK CHANGES SUBMISSION.
	6	12/19/80	T.S.M.	CONSTRUCTION DEVT., CONDITION UPDATED UP TO 12/80 - PROPOSED UNION COUNTY LIGHT RAIL.
		10/06/80	H.M.X.	OTA, PROPOSED GARAGE PARKING LOTS AND DECKING FACILITY
	5	04/14/89	D.G.	TERMINAL "C", PROPOSED CUTS ALONG TW "A"
M.GOLEMS	4	03/03/89	D.G.	TERMINAL "C"-T, APRON, LOT "E" GARAGE.
M.GOLEMS	3	10/17/88	D.G.	MODIFY NAVIGATIONAL AIDS & LEGEND
M.GOLEMS	2	9/17/88	D.G.	TERMINAL "C" - GARAGE BUILDING TERMINAL "A" MARINE CLUB
M.GOLEMS	1	6-15-88	D.G.	RELOCATED NAVIGATIONAL AIDS, R/W & TW EXTENSIONS, MODIFY PARKING LOTS "O" & "T" - SHOWN FUTURE BUILDINGS, REVISED AIRPORT DATA.

**ENVIRONMENTAL DISCLAIMER**  
 THIS APPROVAL DOES NOT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH PL 91-190, PL 91-285 OR PL 90-495.

**\* SPECIAL NOTE \***  
 FAA'S APPROVAL OF THIS AIRPORT LAYOUT PLAN (ALP) REPRESENTS ACCEPTANCE OF THE GENERAL LOCATION OF FUTURE FACILITIES DEPICTED. DURING THE PRELIMINARY DESIGN PHASE, THE AIRPORT SPONSOR IS REQUIRED TO RESUBMIT FOR APPROVAL THE FINAL LOCATIONS, HEIGHTS AND EXTERIOR FINISH OF STRUCTURES. FAA CONCERN IS OBSTRUCTIONS, IMPACT ON ELECTRONIC AIDS OR ADVERSE EFFECT ON CONTROLLER VIEW OF AIRCRAFT APPROACHES AND GROUND MOVEMENT AREAS, WHICH COULD ADVERSELY AFFECT THE SAFETY, EFFICIENCY OR UTILITY OF THE AIRPORT.

THE PORT AUTHORITY  
 OF NEW YORK AND NEW JERSEY  
 ORIGINAL SIGNED BY WILLIAM DECOTA  
 APPROVED FOR ROBERT KELLY  
 DIRECTOR OF AVIATION  
 DATE JAN. 06, 1998

FEDERAL AVIATION ADMINISTRATION  
 APPROVED ORIGINAL SIGNED BY PHILIP BRITO  
 CHIEF AIRPORT DISTRICT OFFICE  
 DATE JAN. 07, 1998

THE PORT AUTHORITY  
 OF NEW YORK AND NEW JERSEY  
 AVIATION DEPARTMENT  
 AVIATION PLANNING DIVISION  
 NEWARK LIBERTY INTERNATIONAL AIRPORT  
 AIRPORT LAYOUT PLAN

---

**Attachment E**  
**NJDEP Letter – Seeking Concurrence for**  
**Installation of Single Walled Piping in South**  
**Fuel Farm**

---

**THE PORT AUTHORITY OF NY & NJ**

February 14, 2013

Ms. Audrey S. Dorofy  
Chemical Safety Engineer  
Bureau of Release Prevention  
New Jersey Department of Environmental Protection  
Station Plaza 4  
22 South Clinton Avenue, 3<sup>rd</sup> Floor  
Trenton, NJ 08625

Dear Ms. Dorofy:

The aviation fuel bulk storage facility at the South Fuel Farm, as well as the associated aircraft hydrant fueling system, at Newark Liberty International Airport (EWR) are owned by the Port Authority of New York and New Jersey (Port Authority). The South Fuel Farm serves as bulk storage for Aviation Jet Fuel (Jet A). This bulk fuel storage facility and hydrant system, EPA Facility ID No. NJD981481807, is subject to New Jersey Department of Environmental Protection (NJ DEP) regulations regarding the "Discharge of Hazardous Substances" (N.J.A.C. 7:1E). The existing single wall buried pipelines within this facility are being inspected, repaired and maintained under a program developed in accordance with API 570 as allowed by N.J.A.C. 7:1E-2.4(c)2.

Over the next three years, the Port Authority intends to modernize the storage facility and associated aircraft hydrant system at EWR. Modifications to the system include the addition of new buried fuel lines in several locations within the South Fuel Farm area. N.J.A.C. 7:1E-2.4(b) requires new buried piping installations to have a state-of-the-art leak detection device and be double-walled or have secondary containment or diversion systems. However, the NJ DEP also recognizes that there are design differences between major facilities and that appropriate methods of discharge prevention are necessarily site-specific, and as allowed under N.J.A.C. 7:1E1.11(e), the owner or operator of a major facility may substitute an alternate method if he or she can demonstrate to the satisfaction of the Department that such alternate method will provide protection against discharges at least equivalent to the method it is intended to replace.

As shown on the attached sketch SK-1, "South Fuel Farm Piping Installation Plan," there are five new buried pipe segments planned for installation in the South Fuel Farm: a 580 foot segment of 30-inch diameter piping, a 215 foot segment of 30-inch diameter piping, a 75 foot segment of 20-inch diameter piping, a 50 foot segment of 18-inch diameter piping and a 450 foot segment of 12-inch diameter piping. We propose that these new buried fuel pipe segments be of single-wall construction based upon the following aspects of new pipe installations, which provide an equivalent level of protection against fuel discharges:

*Newark Liberty International Airport  
1 Conrad Road, Building #1, Newark, NJ 07114  
T: 973 961 6000*

1. The 30-inch, 20-inch and 18-inch diameter pipe segments are subject to pump suction conditions. This implies that these pipes are subject to negative pressures when the fuel distribution pumps are operating and to the static head pressure of stored fuel within the connected fuel storage tanks, which never exceeds 17 psi, when the fueling pumps are not in operation.
2. The 12-inch diameter piping segment is an extension of an existing tank fill line. Although this line is subject to pump discharge pressure when in operation, the maximum operating design pressure is 20 psi.
3. All piping installed will be new 0.375-inch nominal wall thickness carbon steel pipe conforming to ASTM A53, Grade B and is designed for a maximum pressure of 275 psi. Given that the new pipe segments are subject to only negative or low pressure conditions, the piping design for these segments far exceed what is necessary and the likelihood of any failures from over-pressure conditions is extremely low. In addition, if there are any excess pressures developed in the pipelines due to thermal expansion of fuel, pressure relief valve systems relieving back to the atmospheric fuel storage tanks, will be installed to ensure pressures do not exceed design conditions.
4. The new piping will be protected from corrosion with a 20-mils thick factory applied fusion-bonded epoxy external coating and an 8-mils thick factory applied epoxy internal coating. All coatings will be 100% factory holiday tested and, as an additional quality control measure, the exterior pipe coating will again be 100% holiday tested in the field prior to the pipe being lowered into trenches.
5. All joints in buried piping will be welded. The buried piping will not contain any buried flanges, valves or threaded connections. 100% of all welded joints in the piping will undergo radiographic inspection.
6. As additional quality control, all installed piping will be subject to pneumatic and hydrostatic pressure tests.
7. The new piping will be further protected from corrosion by an impressed current cathodic protection system where quarterly checks for proper operation of the rectifiers and annual testing of the entire cathodic protection system are conducted.
8. Since the new piping will be connected into the fuel farm's network of existing single wall piping, such piping will be inspected, maintained and repaired in accordance with the fuel farm's current API 570 program. This program identifies the in-service inspection and condition-monitoring that is required to determine piping integrity. The program allows for internal and external pipe inspections, thickness measurement inspections and cathodic protection surveys amongst other inspections to be employed to determine piping integrity. The API 570 program is an industry standard for the determination of piping integrity acceptable to the NJ DEP.

Please be advised that the planned work in the fuel farm will also include five new buried piping manifolds, of less than 10 foot in length each, connected to the existing single-wall buried pipelines. We propose that these segments of piping be constructed of single-wall pipe to the specifications identified above. While these pipe manifolds will be subject to

fuel pump discharge pressures, such piping will have all welds radiographically inspected, be internally and external epoxy coated, be cathodically protected and be monitored by the existing state-of-the art Vista HT-100 volumetric type leak detection system. These segments of piping are shown on attached sketches SK-2, "North Manifold Area at South Fuel Farm – Piping Installation Plan" and SK-3, "North Manifold System and G-3 and G-4 Installation Plans."

Given that the majority of the new fuel piping will be subject to negative to low pressure operating conditions with the piping designed to have a maximum operating pressure of 275 psi, and with several layers of corrosion protection and rigorous quality control during pipe installation, we respectfully request your office consider granting allowance of single wall piping technology as described above as a suitable alternate to double wall piping technology.

If you have any questions or comments regarding this letter, please feel free to contact Robert Roussel at the following address: The Port Authority of New York and New Jersey, Two Gateway Center, Engineering – 14<sup>th</sup> Floor, Newark, New Jersey 07102 - Telephone No. (973) 565-7642. Thank you so very much for your help in this matter.

Sincerely,

  
Virginia J. Trubek, Manager  
Physical Plant & Redevelopment  
New Jersey Airports

Enclosure

CC: E. Knoesel, Port Authority of NY & NJ  
F. Eilinger, Port Authority of NY & NJ  
R. Roussel, Port Authority of NY & NJ  
T. Chan, Port Authority of NY & NJ  
D. Kogan, Port Authority of NY & NJ  
B. Walch, Port Authority of NY & NJ  
K. Chang, Port Authority of NY & NJ  
R. McCormack, Allied Aviation  
S. Guarino, Allied Aviation