Chapter 15 Utilities

15.1 INTRODUCTION AND METHODOLOGY

This chapter analyzes the Build Alternative for potential effects to utilities and service providers in the vicinity of the proposed Project area, requirements to establish connectivity, allow for distribution, and operations. The existing utility data were obtained from the Redevelopment Plan (NJMC 2013) and the *Property Disposition Request for Proposals* (HCIA 2013), referred to herein as the "HCIA RFP."

15.2 AFFECTED ENVIRONMENT

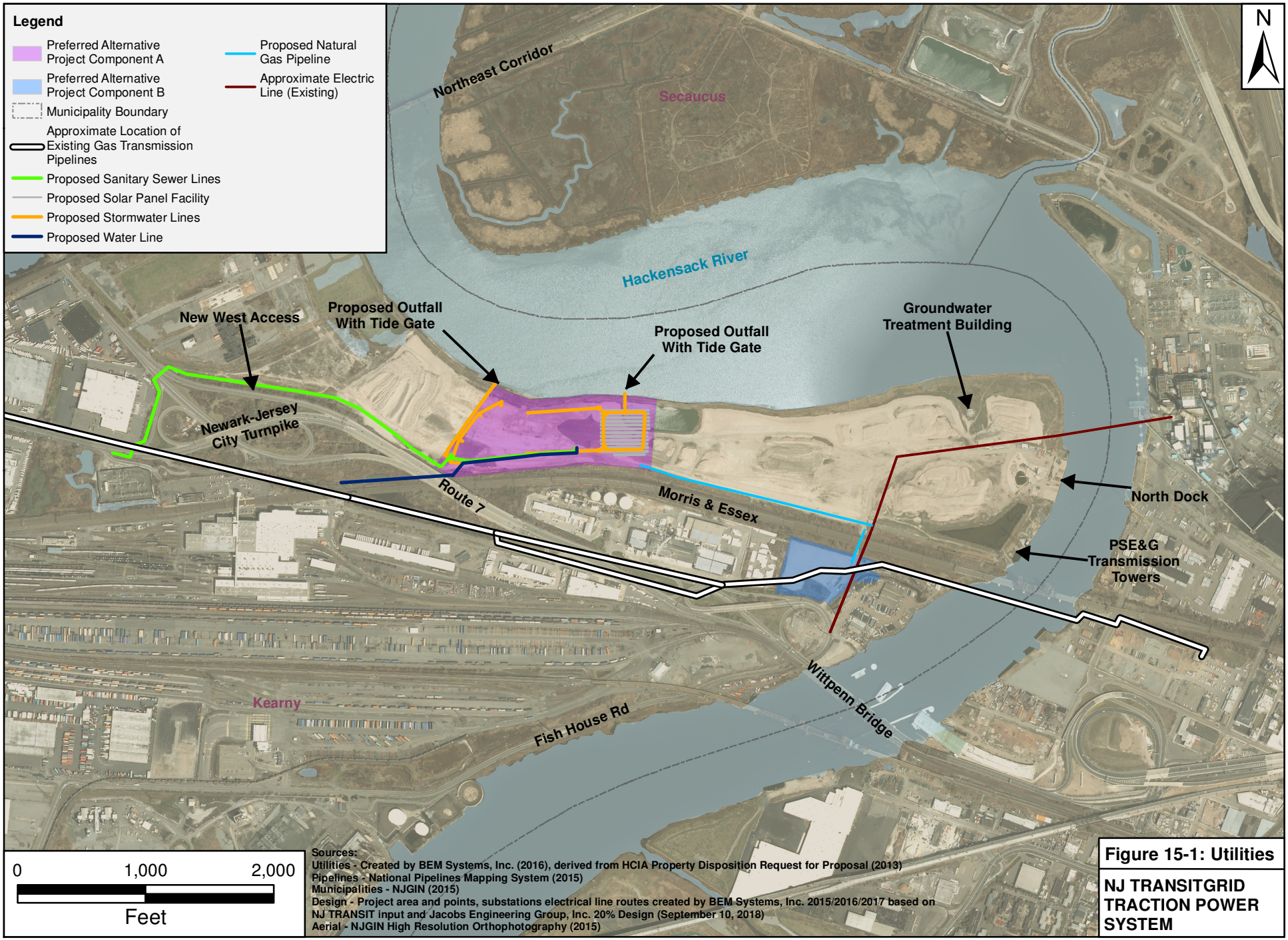
15.2.1 Gas & Electric Services

PSE&G provides electric and gas service in the proposed Project area, including to the Northeast Corridor and the Morris & Essex Line. The proposed Project would occupy only a portion of the 175-acre Koppers Koke Site (20 acres for Preferred Alternative Project Component A, and 6 acres for Preferred Alternative Project Component B). The Koppers Koke Site contains two existing electric services: a cable from the PSE&G Hudson Generating Station and a local service line. According to the HCIA RFP, the cable runs underground from the PSE&G Hudson Generating Station, beneath the Hackensack River, and supplies electricity to the groundwater treatment system on the northeast portion of the Koppers Koke Site. This cable is fully utilized and cannot be used for additional electric service to the site. A local service line was constructed to draw power from the PSE&G Kearny Generating Station, located south of the Project area, to the Great Lakes Dredge and Dock Company (GLDD) (North Dock) facility on the northeast portion of the Koppers Koke Site. This electric service is carried via wooden poles from Fish House Road. In addition, PSE&G holds a permanent easement on the Koppers Koke Site. The easement allows the right to install, maintain and operate two high voltage transmission towers. Two existing PSE&G towers are located on the southeastern corner of the Koppers Koke Site (see Figure 15-1).

Three natural gas pipelines are located on the six-acre parcel of the Koppers Koke Site south of the Morris & Essex Lines (Preferred Alternative Project Component B). Two of these pipelines are owned by PSE&G (16- and 20-inch diameter pipes) and one (12-inch diameter pipe) is owned by Williams Gas Pipeline (formerly TRANSCO). NJDOT is currently implementing the replacement of the existing Wittpenn Bridge along Route 7 which traverses the Hackensack River south of the Koppers Koke Site. As part of this project, NJDOT will relocate three existing natural gas pipelines from their current positions along Fish House Road to new locations near the middle of Preferred Alternative Project Component B.

15.2.2 Water Supply & Wastewater

The site previously had a water supply that served the Koppers Koke facility operations; however, it was removed during past demolition of the facilities. There is an existing 42-inch water main line, owned by the Town of Kearny, located southwest of Preferred Alternative Project Component A. The Kearny Water



Sources:
Utilities - Created by BEM Systems, Inc. (2016), derived from HCIA Property Disposition Request for Proposal (2013)
Pipelines - National Pipelines Mapping System (2015)
Municipalities - NJGIN (2015)
Design - Project area and points, substations electrical line routes created by BEM Systems, Inc. 2015/2016/2017 based on NJ TRANSIT input and Jacobs Engineering Group, Inc. 20% Design (September 10, 2018)
Aerial - NJGIN High Resolution Orthophotography (2015)

Figure 15-1: Utilities

NJ TRANSITGRID TRACTION POWER SYSTEM

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Department currently has an estimated spare capacity of approximately three million gallons per day (MGD).

The site contains no sanitary sewers and there are no connections to the municipal sewer system available along Route 7. The nearest pump station, operated by Kearny Municipal Utilities Authority (KMUA), is located on Newark-Jersey City Turnpike, just south of the Family Food Distributors, Inc. facility. According to the KMUA, the pump station was designed to accommodate future development, and capacity is both available and expandable at this location. KMUA transmits sanitary flow to the Passaic Valley Sewerage Commission (PVSC) from its existing facilities, according to the HCIA RFP.

15.2.3 Stormwater

Stormwater and surface drainage inputs from rain events are directed overland via existing site topography towards existing stormwater retention basins. The existing stormwater system in the Redevelopment Area relies on these retention basins, which allow adequate soil and particulate settlement for use during remedial actions at the Koppers Koke Site. Following settlement, the stormwater is discharged via overflow drainage pipes to the Hackensack River. Although this system is designed to support a previous undeveloped and remediated site, it does not provide capacity to handle 100 or 500-year storms.

15.3 PROBABLE IMPACTS OF THE PROJECT ALTERNATIVES

15.3.1 No Action Alternative

Under the No Action Alternative, the proposed Project would not be constructed and NJ TRANSIT and Amtrak would continue to be served by the existing commercial grid. Without the microgrid, commuter and intercity rail service in Amtrak's and NJ TRANSIT's core service territory would remain vulnerable to power outages and there would be a missed opportunity to increase safety and security during power outages. Under the No Action Alternative, other planned and programmed transportation improvements for which commitment and financing have been identified would take place by 2021. These include projects in NJ TRANSIT's Resilience Program, Amtrak initiatives that will affect operations on the Northeast Corridor, and HCIA plans for warehousing development on portions of the Koppers Koke property.

In the absence of the proposed Project, Amtrak has plans to completely replace and rebuild Substation No. 41. Amtrak is currently proceeding with reconstruction of certain elements of Substation No. 42, located east of the project area at the entrance to the North River Tunnels in Weehawken, NJ, including the installation of a new Control House. Under the No Action Alternative, NJ TRANSIT intends to acquire the 20-acre parcel (Preferred Alternative Project Component A) on the Koppers Koke property as well as the six-acre parcel (Preferred Alternative Project Component B) located south of the Morris & Essex Line (due to a property settlement, as described in Chapter 2, "Project Alternatives"). Under the No Action Alternative, the 20 acres that NJ TRANSIT is acquiring would likely be used for ancillary railroad purposes and the utility improvements discussed in this chapter would not be completed.

15.3.2 Build Alternative

Project Components C through G would not require any connections to municipal water, sewer or electric services and would not affect public utilities. Operation of the Main Facility would require connections to the sanitary sewer, potable water supply, natural gas pipeline, and electric service. NJ TRANSIT would install the required connections as shown on Figure 15-1. Preferred Alternative Project Component F (emergency generators at HBLR Headquarters) would also require connection to natural gas.

For the sewer connection, NJ TRANSIT would install an 8-inch sanitary sewer force main along the HCIA easement that would run parallel to the Koppers Koke Site and then travel south to connect to the KMUA sanitary sewer system along Newark-Jersey City Turnpike, as shown on Figure 15-1. Preferred Alternative Project Component A would generate minimal sanitary sewage due to the relatively few employees needed to operate the facility. An onsite treatment system would be designed to meet the relevant effluent standards for the disposal of generated industrial wastewater, including reject water from the reverse osmosis system. It is anticipated that the existing KMUA sanitary sewer system can accommodate the proposed Project and even full build-out conditions of the entire Redevelopment Area.

There is an existing municipal water supply line outside of the Koppers Koke Site that supplies water to other facilities in the area, including the MMC facility. For connection to this municipal water supply, NJ TRANSIT would install a new 12-inch water main line to connect to the existing 42-inch water main line. The new 12-inch water main line would run parallel to the Morris & Essex Line from Preferred Alternative Project Component A to the existing water supply line, connecting with the existing 42-inch line just north of the Morris & Essex Line and south of Route 7, as shown on Figure 15-1. Water usage for the microgrid's natural gas-fired turbines will require water for cooling purposes as they would be designed with water cooled equipment. Turbine cleaning for the microgrid would require deionized water which would be brought to the facility from outside sources, or generated on-site using a reverse osmosis system to purify the municipal water to industrial standards. The effluent (i.e., reject water) from the reverse osmosis system would be discharged into the sanitary sewer system. This turbine cleaning would be infrequent (e.g., two to three times annually).

The majority of water use for a combined-cycle microgrid is associated with the steam-driven turbine's cooling water load and the associated cooling tower and the water use would vary with ambient temperature. The cooling tower requires water intake to account for blowdown and evaporation. The heat recovery boilers would require water makeup due to steam system losses and blowdown for maintenance of water chemistry. At peak ambient temperature, the cooling tower and the boiler would have a water makeup rate of 850 to 1,000 gallons per minute (gpm), which corresponds to 1.4 MGD. This is expected to vary throughout the year.

Since the Kearny Water Department currently has spare capacity of approximately 3 MGD, the microgrid would be accommodated by the existing service, even under full build-out conditions (proposed warehouses) of the Redevelopment Area. A reverse osmosis system would be used to purify the incoming water to meet industrial standards.

There will be two waste water systems – sanitary and industrial. The sanitary waste water will include general plumbing fixtures, filtered backwash from the reverse osmosis (RO) system, the cooling tower blowdown and boiler blowdown. Cooling tower temperatures will be low (under 140°F) and can drain directly to the sanitary sewer. All boiler blowdown drains will go to a flash tank with aftercooler and use municipal water to cool to the temperature specified in the sewer use permit before discharge into the sanitary system.

The effluent (i.e., reject water) from the reverse osmosis system would be discharged into the sanitary sewer system. This is expected to be less than 12 gpm, or 17,280 gallons per day, for the microgrid. The effluent water discharge will require a PVSC permit for discharging water. Because the supply water is obtained from the municipal water supply, the discharge will not contain any materials above the acceptable permit thresholds for the sanitary sewer wastewater system. Industrial waste water from within the Main Facility building (machinery area and sump pumps for elevators) will pass through an oil-water separator before being discharged to the sanitary waste system. The waste water from the HRSGs will be oil free and will be cooled to temperature specified in the sewer use permit before discharge into the sanitary system. All necessary permits will be obtained by NJ TRANSIT from PVSC and all discharged water will meet the permit requirements prior to discharge.

Regardless of selected equipment, the microgrid would utilize natural gas as a primary source of fuel for its turbines and reciprocating engines. Pipeline-quality natural gas would be delivered via a new interconnection with up to two of the three existing pipelines that traverse Preferred Alternative Project Component B. The new gas line would extend a short distance from Preferred Alternative Project Component A (about 0.5 miles), running eastward along the southern border of the Redevelopment Area, within a utility easement, continuing beneath the Morris & Essex Line through the culvert at the Fish House Road entrance, and heading southward within Preferred Alternative Project Component B to connect to the existing pipelines. The volume of natural gas required for the proposed Project would not reduce the availability of natural gas for other users of the pipelines.

No stormwater from Preferred Alternative Project Component A would enter a public stormwater system. The existing stormwater basin was designed as a sediment retention basin for use during remedial actions at the Koppers Koke Site. The proposed Project would include filling in the portion of the existing sediment retention basin that falls within the 20-acre parcel that will be acquired by NJ TRANSIT. Stormwater from the majority of the 20-acre parcel would be collected via storm drains, processed through a storm water treatment structure, then discharged into the new detention basin, which would be constructed under the solar panel facility. This basin would be dry under normal conditions. The detention basin will be designed to comply with the regulations in the NJDEP Stormwater Best management Practices Manual and NJDEP Stormwater Management Rule (§7 N.J.A.C. 8) for peak flow reduction so that the post-construction peak runoff rates for the 2-, 10-, and 100-year storm events are 50, 75, and 80 percent respectively, of the pre-construction peak runoff rates. A new outfall would be constructed north of the solar panel facility/detention basin to drain water from this basin. Stormwater flows would be discharged to the Hackensack River, following sediment settlement periods and inspection of stormwater, including visually checking for sheen. A second outfall would be constructed at the northwest corner of the 20-arce parcel that would collect stormwater from the driveway west of the electrical yard, and discharge it into

the Hackensack River. Project Components B through G would not generate stormwater under normal or emergency operating conditions.

The electrical demand of Preferred Alternative Project Components A and B under the Build Alternative is expected to be negligible since the facility would be self-reliant in terms of electricity while in operation. Under normal operating conditions, the microgrid would be connected to the commercial grid but would self-generate a large portion of the required load for the Energized Assets. During emergency operating conditions (i.e., when the electrical utility grid is disrupted by weather or other events), the connection to the electrical utility grid would be severed (i.e., the microgrid would operate in island mode), to avoid energizing downed lines. The entire plant and distribution system is designed to be autonomous of the electrical grid and will run independently and continuously to support traction loads during emergency conditions. The microgrid will provide full power to the Energized Assets under emergency conditions. These assets are identified in Chapter 2, "Project Alternatives." The Build Alternative would create reinforced and reliable electrical infrastructure, to support immediate and long-term electrical needs for public transportation in the core service territory. The proposed Project is not anticipated to affect existing utility operations, either in terms of availability or pricing.

The nanogrid generators at the HBLR Headquarters (Preferred Alternative Project Component F) would operate only during emergency conditions (i.e., when the electrical utility grid is disrupted by weather or other events), and would operate in island mode, with no connection to the electrical utility grid.

Project Components C, D, E, and G would require electrical lines to be installed. This DEIS evaluated two methods for installation of electrical lines on monopoles up to 220 feet tall or installed via underground cables in duct banks that extend from the Main Facility to the Mason Substation (Preferred Alternative Project Component C), and to the new Kearny Substation (Project Component D), and the portion of Preferred Alternative Project Component E in Kearny. For Preferred Alternative Project Component E in Jersey City, this DEIS evaluated three methods for installation of electrical lines on monopoles (up to 65 feet tall), installed via underground cables in duct banks or attachment to existing infrastructure (i.e., HBLR elevated tracks and bridges). For connections to substations along the northern segment of the HBLR (portion of Preferred Alternative Project Component G) and from the nanogrid (Preferred Alternative Project Component F) to the southern segment of the HBLR (portion of Preferred Alternative Project Component G), this DEIS evaluated electrical lines installed on monopoles (up to 39 feet), installed via underground cables in duct banks and attachment to existing infrastructure (e.g., HBLR elevated tracks and bridges), where possible.

Collectively for the proposed improvements, the three design options evaluated were: 1) all electrical lines installed overhead on monopoles; 2) all electrical lines installed underground in duct banks; and 3) a combination of using overhead (monopoles) and underground (duct banks) options as well as attachment to existing infrastructure. The third design option was selected as the preferred design option based on various site-specific factors, such as access, site constraints, localized geology, areas of known contamination and documentation/survey of existing utilities (both overhead and underground). Since construction impacts to existing utilities (and potential locational conditions) could result in interruptions

to public utilities and/or transportation service delays, the project is being designed to avoid these interruptions by choosing the installation method that best minimizes impacts to existing utilities.

15.4 SUMMARY OF SIGNIFICANT ADVERSE IMPACTS AND MITIGATION MEASURES

As described above, the proposed Project is not anticipated to affect existing utility operations, either in terms of availability or pricing and there would be no significant adverse impacts on utilities or services as a result of the Build Alternative. Therefore, no mitigation is required. Prior to beginning any construction, NJ TRANSIT will contact New Jersey One Call, as required by state law, to ensure the proper utility companies locate and mark underground utilities in the project area. Additionally, coordination and agreements with local utility authorities and acquisition of sanitary sewer and water main extension/connection permits would be completed, ahead of any construction activities. The proposed Project would provide reinforced and reliable electrical infrastructure to support immediate and long-term electrical needs for public transportation in the core service territory. Existing utilities (and potential locational conflicts) are one of the site-specific conditions that will dictate whether a certain segment of electrical line will be installed via monopoles, duct banks or attached to existing NJ TRANSIT-owned infrastructure (i.e., HBLR elevated tracks). The Project is being designed to avoid all non-NJ TRANSIT utilities to avoid disruptions to private or public customers.