Ravenswood Energy Storage Project

Expanded Environmental Assessment

Applicant:
Ravenswood Development, LLC

February 2019

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Chapter 1: Introduction

Ravenswood Development, LLC is proposing to construct, own and operate an energy storage facility at the existing Ravenswood Generating Station in Long Island City, Queens, New York (see **Figure 1**). The Ravenswood Energy Storage Project (Project) will have a capacity of up to approximately 316 megawatts (MW). As explained below, the Project is proposed to support development in discrete phases to ensure that the Project is in a position to respond to evolving conditions and initiatives in the energy storage supply market.

Ravenswood Development, LLC is uniquely positioned to deliver a battery project that can succeed in New York. First, the Project's feasibility is supported by LS Power's (the owner of Ravenswood Development, LLC) history of developing successful energy storage facilities in California. Secondly, the Project will be located at an existing power generating facility that is located on industrially-zoned property with easy access to the New York City transmission and distribution grid. The property has adequate space for installing the battery project with the redevelopment of the area currently occupied by old combustion turbines that have reached the end of their useful life. This is in contrast to most cases where space and access come at a premium. The Project will also be located within the heart of the New York City load center and can best take advantage of a battery resource's unique characteristics for providing grid reliability support and ancillary services.

A subsidiary of Ravenswood Holdings, LLC (d.b.a. Helix Ravenswood, LLC), referred to as EnergyStorageCo and now Ravenswood Development, LLC, petitioned the New York State Board on Electric Generation Siting and the Environment (Siting Board) for a Declaratory Ruling that the Project is not subject to Article 10 of the Public Service Law (Case Number 18-F-0204). In a letter dated June 22, 2018, the General Counsel to the Siting Board stated that based on prior Siting Board rulings, the Project is not subject to Article 10. However, the Project will be required to petition the New York State Public Service Commission (NYSPSC) for Certificate of Public Convenience and Necessity issued pursuant to Section 68 of the Public Service Law. Issuance of the Public Service Law Section 68 Certificate is a 'discretionary action' and as such, the Project will be subject to the State Environmental Quality Review Act (SEQRA). Ravenswood Development, LLC will separately seek long term financing approval pursuant to Section 69 of the Public Service Law.

A. PROJECT NEED AND BENEFIT

The proposed energy storage facility would be able to provide peak capacity, energy and ancillary services and enhance grid reliability in New York City. This Project builds on New York Governor Andrew Cuomo's New York Energy Storage Roadmap announced on June 21, 2018, which identifies the need for rapid expansion of New York's energy storage capabilities, as well as the goals and strategy of the Governor's broader Reforming the Energy Vision (REV) for a more modern energy system in New York. The Project supports the state's REV goal of 1,500 MW of energy storage in New York by 2025, and the Governor's goal of 3,000 MW of

energy storage by 2030 announced as part of the New York 2019 State of the State. The project is also well positioned to respond to the NYPSC's "Order Establishing Energy Storage Goal and Deployment Policy" issued on December 13th, 2018. The Energy Storage Order incentivizes the development of energy storage in the state and requires the State's utility companies to procure a minimum of 300 MWs of energy storage though a competitive RFP in 2019.

The Project is also consistent with New York City's energy policies and goals. Through its OneNYC initiative, the City of New York is seeking to become the most resilient, equitable and sustainable city in the world. OneNYC includes an aggressive goal of reducing its greenhouse gas (GHG) emissions 80 percent by 2050 (80×50), compared to 2005 levels[1]. In 2016, the City published a Roadmap to achieve the 80×50 goal, targeting strategies for the buildings, energy, waste, and transportation sectors. For example, the Department of Citywide Administrative Services is "deploying energy storage technologies to help the City increase the resiliency of critical infrastructure." By replacing existing fossil fuel peaker units with a state-of-the-art energy storage facility, the Ravenswood Development Project represents a significant private sector contribution to achieving the City's 80-50 goal.

As such, the Project will help forward these state energy objectives, improve the reliability and stability of the grid in New York City and have a positive impact on the environment. The proposed Project will not cause or result in any direct emissions to ambient air or process discharges to any surrounding waterbodies, nor will it require any water for operation or result in any sanitary discharges. The Project will take advantage of existing electric grid infrastructure on and/or adjacent to the Project Site and will ultimately improve the reliability of the New York City electric grid through the construction of a new, modern Gas Insulated Substation (GIS). Finally, given the proposed size of the Project and existing development at the Ravenswood Generating Station, the proposed energy storage facilities will not result in any significant visual or other impacts.

B. PROJECT OVERVIEW

The Project will be located on an approximately seven-acre portion of the existing Ravenswood Generating Station site (Project Site) located along the East River in Long Island City, in Queens, New York as indicated in the aerial photo provided as **Figure 2**. The Project will be located on the northeastern portion of New York City Block 357, Lot 1, which is currently owned by the Helix Ravenswood, LLC, an affiliate of Ravenswood Development, LLC. Ravenswood Development, LLC will enter into an agreement with Helix Ravenswood, LLC to permit it to develop the portion of the lot for the Project.

The Project will require the decommissioning and demolition of up to 16 existing, gas-fired combustion turbines and associated equipment currently on the Project Site (Gas Turbine [GT] 04, 05, 06, 07, 08, 09, 10, 11, 2-1, 2-2, 2-3, 2-4, 3-1, 3-2, 3-3, and 3-4) that are approximately 50 years in age. Of these units, GT 04, 05, 06, 07, 08, 09, 2-1, 2-2, 2-3, 2-4, 3-1, 3-2, 3-3, and 3-4 are currently not in service, and GT 10 and 11 are currently in service, but are not in regular use. The Project will replace up to 316 MW of these existing combustion turbines' capacity on the New York Electric System. The Project will also require the demolition of an existing office building, the removal of a temporary storage facility, and the relocation of certain existing

[1] See https://onenyc.cityofnewyork.us/goals/80x50/

structures (e.g., fuel line, fire hydrants).. The decommissioning and demolition will be performed in accordance with applicable laws and regulations.

Access to and from the Site will be controlled at the existing Ravenswood Generating Station entrance security gate, or its security shipping entrance. The security gate is staffed 24 hours per day, 7 days per week, 365 days per year. Live video surveillance of the entrance, perimeter and discrete sensitive areas are monitored by control room staff.

With the exception of a few coniferous landscape trees within the proposed area of development, the Project will not require removal of vegetation. Following demolition of the combustion turbines and buildings referenced above, ground disturbance will be limited to bringing in clean fill to raise the buildings out of the 100-year floodplain, foundation work and the installation of underground electrical cables and equipment.

The initial Project design consists of three battery buildings. Each battery building will house lithium-ion batteries installed in racks and will connect to outdoor, bi-directional, skid-mounted battery inverters in a weatherproof enclosure via cable trays or underground conduits inside the buildings, and cable trays, underground conduit or buried cable outside. The Project will be designed and constructed to comply with applicable federal, state, and local codes and requirements. The buildings will be outfitted with fire suppression equipment to meet or exceed applicable fire safety codes and standards.

The battery facility will utilize existing personnel at the Ravenswood Generating Station and will be operated from the Station.

The battery facility will connect to a new 345 kilovolt (kV) and/or 138 kV GIS substation to be licensed, constructed, owned, and operated by Consolidated Edison Company of New York, Inc. (Con Edison) within the existing Ravenswood Generating Station. The new substation is anticipated to be located adjacent to the proposed battery storage development and will tap existing transmission lines passing underneath the Project Site and Vernon Boulevard from the nearby Rainey Substation operated by Con Edison.

Following demolition of the existing structures, the Project is anticipated to be constructed in three phases with each battery building constructed in a separate phase as follows:

- Phase 1: Southeast Building – up to 129 MW
- Phase 2: North Building – up to 98 MW
- Phase 3: Southwest Building – up to 89 MW

Notably, the footprint of the first phase – the Southeast Building – does not encompass the area where GT 10 and 11 are located. Thus, the Project's phased development can be appropriately coordinated with the removal of the GTs. In addition, as a result of potential changes to the NYISO's Capacity Market Rules for Energy Storage Resources, Ravenswood Development, LLC is evaluating several options for the number of batteries to be installed at the facility, up to a maximum capacity of eight hours of energy storage.

Two interconnection requests have been filed for the Project with the New York Independent System Operator (NYISO) pursuant to the NYISO's Large Generator Interconnection Procedures. One request for up to 129 MW (corresponding to Phase 1) has been approved by the NYISO Transmission Planning Advisory Subcommittee (TPAS) for System Reliability

Impact Study (SRIS) review. A second request for up to 187 MW (corresponding with Phases 2 and 3) is pending approval by TPAS. Ravenswood Development, LLC anticipates entering the 129 MW request into the 2019 Class Year Facilities Study. These requests can accommodate the interconnection of all three phases of the Project.

The proposed commercial operation date for the first phase of the Project is in March 2021. The proposed commercial operation dates for the second and third phases of the Project have not yet been determined.

C. REQUIRED AGENCY ACTIONS, PERMITS AND APPROVALS

The Project as proposed requires Federal, State and local discretionary and ministerial permits and approvals as summarized in **Table 1**. The Project may require compliance with other Federal, State and local programs that are addressed throughout this document.

Table 1
Summary of Discretionary and Ministerial Permits and Approvals and Involved Agencies

Agency		Permit/Approval	Agency Action
Federal	U.S. Fish and Wildlife Service (USFWS)	Section 7: Threatened and Endangered Species Review and Consultation	Consultation letter to determine if Federally-regulated species or their habitats are potentially present onsite
State	New York State Public Service Commission (NYSPSC)	Section 68 Certificate of Public Convenience and Necessity, Section 69 financing approval and lightened regulation confirmation	Approval to construct and finance an electric facility
		SEQRA Lead Agency Review and Determination	NYSPSC may seek Lead Agency status; conduct coordinated review with all Involved Agencies including NYSDEC, NYCDCP and Interested Parties; and issue SEQRA Determination
	New York Independent Service Operator (NYISO)	Large Generator Interconnection Procedures (LGIP)	Interconnection approval
	New York State Department of Environmental Conservation (NYSDEC)	NYSDEC, Natural Heritage Program (NYNHP) Threatened and Endangered Species Inventory Review	Consultation to determine if State-listed species or their habitats are potentially present onsite.
		NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity	Approval for coverage under GP-0-15-002
		Individual Industrial SPDES Permit Modification	Modification to Ravenswood's existing Industrial SPDES Permit (NY0005193)

Table 1
Summary of Discretionary and Ministerial Permits and Approvals and Involved Agencies

Agency		Permit/Approval	Agency Action
	New York State Office of Parks, Recreation and Historic Preservation (OPRHP)	Section 106 Cultural and Historic Resources / The New York State Historic Preservation Act of 1980 Review and Consultation and Section 14.09 the Parks, Recreation and Historic Preservation Law, which was enacted by the New York State Historic Preservation Act of 1980 (Chapter 354 of the Laws of 1980) – "Determination of No Effect"	Consultation to determine whether cultural and/or historic resources are potentially present on site
Local	New York City Department of City Planning (NYCDCP)	New York City Waterfront Revitalization Plan (WRP) Consistency Review	Determination of consistency with WRP
	New York City Department of Buildings (NYCDOB)	Excavation and Demolition Permit(s)	For removal of existing gas-fired combustion turbines and associated equipment
		Construction Permit(s) and related design plan reviews	Site-specific design review and approval for installation of battery storage equipment
	New York City Department of Sanitation (DSNY)	Fill Material Operations Permit	Required for projects that include landfilling, grading, land improvements or changing existing property grades through the addition of fill material
	New York City Fire Department (FDNY)	Letter of No Objection	Technology Management and Hazmat Operations review of proposed battery storage equipment

D. ORGANIZATION OF EXPANDED ENVIRONMENTAL ASSESSMENT

This Expanded Environmental Assessment (Expanded EA) evaluates the Project's potential environmental impacts in accordance with the requirements of SEQRA and its implementing regulations (6 NYCRR Part 617). The analysis addresses the potential areas of impact, including land use, zoning and community facilities, cultural resources, visual resources, socioeconomics and environmental justice, traffic, air quality, noise, infrastructure, natural resources, cumulative impacts, and alternatives. The Project's completed Long Environmental Assessment Form (EAF) is provided in Appendix A.

This Expanded EA is organized as follows:

- Section 1.0 presents background information and a Project Overview; a statement of the Project's purpose and need; and a summary of the required federal, State and local agency permits and approvals.
- Section 2.0 provides a detailed Project description; a schedule for the Project; a description of safety and security measures; and a summary of the decommissioning plan for the Project.
- Section 3.0 provides a description of the existing environment and an assessment of the potential Project impacts during both construction and operation.
- Section 4.0 provides a cumulative impact analysis for the Project.

Chapter 2: Project Description

A. SITE DESCRIPTION

The Project will be located on an approximately seven-acre portion of the existing Ravenswood Generating Station site (Project Site) located along the East River in Long Island City, in Queens, New York as indicated in the aerial photo provided as Figure 2. The Project will be located on the northeastern portion of New York City Block 357, Lot 1, which is currently owned by the Helix Ravenswood, LLC, an affiliate of Ravenswood Development, LLC. Ravenswood Development, LLC will enter into an agreement with Helix Ravenswood, LLC to permit it to develop the portion of the lot for the energy storage Project.

B. FACILITY OVERVIEW

The initial Project design consists of three battery buildings. Each battery building will house lithium-ion batteries installed in racks which will connect to outdoor, bi-directional, skid-mounted battery inverters in a weatherproof enclosure via cable trays or underground conduit inside the buildings, and cable trays, underground conduit or buried cables outside. The Project will include enough batteries to supply up to a maximum of eight hours of storage capacity and will be able to charge and discharge at up to 316 MW of power. Each battery module will be a sealed, finished, Underwriters Laboratories (UL) listed product installed as a component in the battery racks. The battery racks will contain integrated safety systems to actively monitor electrical current, voltage, and temperature to optimize performance, mitigate potential failures, and prevent upset. There will be no venting or release from the individual cells, cell packs, or casings and the batteries will not be opened for use, maintenance, or other purposes. The Project will be designed and constructed to comply with applicable federal, state, and local codes and requirements. The buildings will be outfitted with fire suppression equipment to meet or exceed applicable fire safety codes and standards.

The initial design consists of 136 inverters that will be connected in pairs to 68 generator step-up transformers, which will all connect to two larger plant step-up transformers via underground cables and two switchgears. The two plant step-up transformers will connect to a new 345 kilovolt (kV) and/or 138 kV gas insulated substation (GIS substation) to be licensed, constructed, owned, and operated by Consolidated Edison Company of New York, Inc. (Con Edison) within the existing Ravenswood Generating Station. The new substation is anticipated to be located adjacent to the proposed battery storage development and will tap existing transmission lines passing underneath the Project Site and Vernon Boulevard from the nearby Rainey Substation operated by Con Edison.

The Project will not require any water for operation other than that required to operate the fire suppression system and –depending on final design-the HVAC equipment.

C. DEMOLITION OF EXISTING STRUCTURES

As shown on the Site Plan Drawings in **Appendix B** (Sheet C1.01), the Project will require the demolition and/or relocation of existing structures to accommodate the new facility. The Project will require the decommissioning and demolition of 16 existing, gas-fired combustion turbines and associated equipment currently on the Project Site (Gas Turbine [GT] 04, 05, 06, 07, 08, 09, 10, 11, 2-1, 2-2, 2-3, 2-4, 3-1, 3-2, 3-3, and 3-4) that are approximately 50 years in age. Of these units, GT 04, 05, 06, 07, 08, 09, 2-1, 2-2, 2-3, 2-4, 3-1, 3-2, 3-3, and 3-4 are currently not in service, and GT 10 and 11 are currently in service, but are not used infrequently. The Project will replace up to 316 MW of these existing combustion turbines' capacity on the New York Electric System.

The Project will also require the demolition of an existing office building, the removal of a temporary storage facility and the relocation of several structure as reflected on Sheet C1.01 in **Appendix B**.

The decommissioning and demolition will be performed in accordance with applicable laws and regulations.

D. CONSTRUCTION

Construction activities at the Facility will generally follow the following sequence:

Erosion and Sediment Control Installation: Erosion and sediment controls will be installed in accordance with approved plans.

Clearing: With the exception of a few landscape trees located within the proposed area of development, no removal of vegetation will be required for the construction of the Project.

Demolition and/or Relocation of Equipment: The decommissioning and demolition or relocation of existing structures will be performed in accordance with applicable laws and regulations.

Grading: Grading will be necessary in portions of the Project Site, primarily on the western portion of the Site and around the existing oil tank. In addition, a retaining wall and clean fill will be used to establish a level base for the building foundations and raise the buildings above the 100-year floodplain.

Foundations: Upon the demolition of the existing combustion turbines and completion of grading/fill activities, the Facility's concrete foundations will be installed.

Underground Installation of Utilities: The Facility will require the installation of underground electrical connections.

Building Construction: Once all concrete foundations are installed and cured, the battery buildings will be constructed on the cured concrete foundations. This equipment will be secured to the foundations and additional ancillary equipment, such as the inverters, transformers and roof-top HVAC units will be installed.

Battery Installation: Following the completion of the battery buildings, the battery racks will be installed. In addition, the fire protection system will be installed.

Stormwater Management: Stormwater management and erosion control measures will be implemented as reflected on the Project's Stormwater Management Plan and Site Plan.

During construction, an average of 100 to 120 workers will be on Site at during the peak construction periods. An appropriate on-site parking plan will be developed adjacent to the Project Site within the Ravenswood Generating Station to accommodate the construction workforce.

Construction activities on the Project are anticipated to occur primarily between the hours of 7:00 AM and 6:00 PM, Monday through Friday. To the extent, overnight, weekend or holiday construction work is required, Ravenswood Development (or its contractor) will secure prior authorization consistent with the City Code. Overnight, weekend or holiday construction hours may also be required for utility-related activities that interface with the ConEd transmission and distribution facilities. If this occurs, Ravenswood Development will coordinate with ConEd and comply with its existing operating protocols. Following demolition of the existing structures, the Project is anticipated to be constructed in three phases with each battery building constructed in a separate phase as follows:

- Phase 1: Southeast Building – up to 129 MW
- Phase 2: North Building – up to 98 MW
- Phase 3: Southwest Building – up to 89 MW

The footprint of the Phase 1 Building (e.g., the Southeast Building) does not encompass the area where GT 10 and 11 are located. Thus, the Project's phased development can be appropriately coordinated with the removal of the GTs.

The proposed commercial operation date for the first phase of the Project is in March 2021. The proposed commercial operation dates for the second and third phases of the Project have not yet been determined.

E. OPERATIONS AND MAINTENANCE

The Project Site will utilize existing personnel at the Ravenswood Generating Station for maintenance activities during operation. The Project will be monitored and operated 24 hours per day, 7 days per week, 365 days per year. A Relay and Communications system will be provided in the Project buildings for automated monitoring and management of the batteries to ensure design performance and system life. Unanticipated process conditions will automatically adjust appropriately and provide immediate indication to the service technicians who will then make appropriate adjustments to return the equipment to normal operational conditions or dispatch remote service technicians as needed.

Typical maintenance requirements are performed during normal operations with service technicians coming to inspect all equipment, replace/clean batteries cells as necessary.

F. SAFETY AND SECURITY

A comprehensive security plan will be developed and implemented during both construction and facility operation. The security plan will be provided to the New York City Police Department and Fire Department of New York (FDNY) for review.

Access to the Site will be restricted to plant personnel, authorized construction contractor crews and/or City/regulatory agency representatives. The Project is located within the secure Ravenswood Generating Station and its existing perimeter, security fence. Access to and from the Site will be controlled at the existing Ravenswood Generating Station entrance security gate,

or its security shipping entrance. The security gate is staffed 24 hours per day, 7 days per week, 365 days per year. Live video surveillance of the entrance, perimeter and discrete sensitive areas are monitored by control room staff. The video surveillance is digitally recorded and stored for several days. Normal plant lighting, consistent with the City's exterior lighting requirements, and emergency temporary lighting will be provided throughout the facility.

G. FIRE PROTECTION

An Emergency Action and Safety Plan will be developed prior to facility operation and will be provided to the FDNY for review and coordination.

A complete fire detection, protection and suppression system, designed in general accordance with applicable state and local codes and recommended practices, including the New York City Building Code, New York City Fire Code and the New York State Building Codes, will be installed. The Project will have an active, remote monitoring system with controls including an alarm systems that would shut the system down in the event of a fire. In addition, each building will have a fire suppression system, including smoke detectors and sprinkler systems and additional fire hydrants are proposed at the Project Site for use by the FDNY.

H. DECOMMISSIONING

At the time the facility reaches the end of its useful life (anticipated to be 30 years), or, alternatively, electric generation has ceased or been abandoned for more than one (1) year, the facility will be repurposed or decommissioned.

Repurposing will entail the use of the battery buildings, but removal of all spent battery units and associated electrical equipment no longer necessary to support the repurposed use. Battery modules will be removed from the battery racks and returned to the manufacturer or their approved recycling partner(s) for dismantling, material processing and recovery.

Decommissioning of the facility will proceed in reverse order of construction and commissioning of the facility such that the land area can be reutilized. Decommissioning will be accomplished with the objective of maximizing the recycling of materials and minimizing the amount of waste to be disposed. As indicated above, battery modules will be removed from the battery racks and returned to the manufacturer or their approved recycling partner(s) for dismantling, material processing and recovery. Site equipment will be disconnected from all utilities. Underground conduit and piping will be cut and capped below grade and abandoned in place, or entirely removed. Any concrete foundations that will not be reused for other purposes will be removed and then transported off-site and recycled or disposed of appropriately. The Site will be restored to a condition comparable or improved to that which existed prior to completion of the Project.

Chapter 3: Environmental Setting

A. LAND USE AND ZONING

This section describes existing land uses and zoning at the Project Site as well as the area surrounding the Project.

LAND USE

EXISTING SITE CONDITIONS

The Project will be located on an approximately seven-acre portion of the existing Ravenswood Generating Station (Project Site) located along the East River in Long Island City, in Queens, New York. The Ravenswood Generating Station (Station) is located at 38-54 Vernon Boulevard. The Station covers approximately 27.40 acres.

As illustrated in **Figure 3**, the Project Site is bordered by the Roosevelt Island Bridge Access and Con Edison's Rainey Substation to the north, Vernon Boulevard to the east, the main Ravenswood Generating Station to the south, and the East River to the west. Con Edison's Vernon Substation is adjacent to the Ravenswood Generating Station property to the south.

Land uses within the quarter-mile study area include medium and high intensity developed land uses, open water, emergent herbaceous wetlands and developed open space (see **Figure 3**).

ASSESSMENT OF POTENTIAL LAND USE IMPACTS

The Project is compatible with existing land uses within the quarter-mile radius study area, as well as the general surrounding area. In order to be compatible with an existing land use, a project will need to avoid or minimize impairments to that land use, including avoiding adverse effects with regard to air quality, water resources, noise, traffic and transportation, visual resources, community facilities and natural resources. In addition, a project must not render existing land uses non-viable. The Project will occupy a small footprint of the existing Ravenswood Generating Station and will not inhibit the use of the Station. Further, as stated throughout this Expanded EA, the Project will have minimal environmental impact due to the clean technology as well as the location within the Station in an area currently occupied by electric generating facilities, most of which are no longer in service. As such, the Project can be viewed as a continuance of the Site's existing land use, which has co-existed with existing, adjacent and nearby land uses. Accordingly, the Project will not result in significant adverse impacts to land use.

CONSISTENCY WITH LOCAL LAND USE PLANS

NYC Waterfront Revitalization Plan

The Federal Coastal Zone Management Act (CZMA) of 1972 was enacted to support and protect the distinctive character of the waterfront and to set forth standard policies for reviewing proposed development projects along coastlines. The program responded to City, State, and Federal concerns about the deterioration and inappropriate use of the waterfront. The CZMA emphasizes the primacy of State decision-making regarding the coastal zone. In accordance with the CZMA, New York State adopted its own Coastal Management Program (CMP), designed to balance economic development and preservation by promoting waterfront revitalization and water-dependent uses. At the same time, it was designed to protect fish, wildlife, open space, scenic areas, farmland, and public access to the shoreline in order to minimize adverse changes to ecological systems, erosion, and flood hazards. The New York State CMP provides for local implementation when a municipality adopts a local waterfront revitalization program (WRP), as is the case in New York City.

The New York City WRP is the City's principal coastal zone management tool, originally adopted in 1982 and approved by the New York State Department of State (NYSDOS) for inclusion in the New York State CMP. The WRP establishes the City's policies for the development and use of the waterfront and provides a framework for evaluating activities proposed within the Coastal Zone. Revisions to the WRP were approved by the New York City Council on October 30, 2013. The revisions are intended to reflect policy elements included in the New York City Department of City Planning's (DCP) 2011 *Vision 2020: New York City Comprehensive Waterfront Plan*, including incorporation of climate change and sea level rise considerations to increase the resiliency of the waterfront area, promotion of waterfront industrial development and both commercial and recreational water-borne activities, increased restoration of ecologically significant areas, and design of best practices for waterfront open spaces. The changes were recently approved by NYSDOS and the United States Department of Commerce.

As the Project is located within the City's Coastal Zone Boundary, it is subject to review for consistency with the policies of the WRP. The Project's documentation of consistency with the WRP is provided in **Appendix D**.

ZONING

The Project Site, and overall Ravenswood Generating Station property, is zoned for industrial or heavy manufacturing purposes (M3-1 district) under the New York City Zoning Resolution. M3 districts are designated for areas with heavy industries that generate noise, traffic or pollutants. Typical uses include power plants, solid waste transfer facilities and recycling plants, and fuel supply depots.

The zoning districts within the immediate area of the Site include: M1-1 and M1-3 to the east, Park to the south; R7-2 to the west (on Roosevelt Island) and M1-1 to the north (see **Figure 4**).

The following subsections demonstrate the Project's compliance with the applicable standards set forth in the New York City Zoning Resolution, Article IV: Manufacturing District Regulations. As applicable, a summary of the standard is provided in *italicized type* followed by the Applicant's responses in regular type.

CONSISTENCY WITH NEW YORK CITY ZONING RESOLUTION – ARTICLE IV MANUFACTURING DISTRICT REGULATIONS

Consistency with §42-10 Uses Permitted As-of-Right

This section of the Zoning Resolution identifies uses that are allowed within the manufacturing zoning districts without special permit, or 'Uses Permitted As-of-Right'.

Response:

While not specifically identified, the Project - an energy storage facility, falls under Use Group 17 (Electric Substation/Utility) or Use Group 18 (Electric Power) as identified in Appendix A of the Zoning Resolution. Electric utility substations (Use Group 17) and electric power generating plants (Use Group 18) are both Uses Permitted As-of-Right within the M3 district.

Consistency with §42-20 Performance Standards

Within M3 districts, uses with potential nuisance effects are required to conform to minimum performance standards established by §42-20 of Article IV, Manufacturing Districts, of the zoning code. Such performance standards include noise, vibration, smoke and emissions, dust, toxic matter, fire and explosive hazards, and humidity, heat, and glare, etc.

§42-21 Performance Standards Regulating Noise

In all Manufacturing Districts, the sound pressure level resulting from any activity, whether open or enclosed, shall not exceed, at any point on or beyond any lot line, the maximum permitted decibel levels for the designated octave band for the district indicated set forth in the table in §42-123.

Response:

The Project will comply with the applicable performance standards for noise. For a detailed discussion of potential noise impacts of the proposed energy storage facility, see Section G. – Noise.

§42-22 Performance Standards Regulating Vibrations

In all Manufacturing Districts, no activity shall cause or create a steady state vibration at any point on any lot line with a displacement in excess of the permitted steady state vibration displacement for the frequencies as set forth in the table in §42-223.

In all Manufacturing Districts, no activity shall cause or create an impact vibration, at any point on any lot line, with a displacement in excess of the permitted impact vibration displacement for the frequencies as set forth in the table in §42-224 for the district indicated.

Whenever an M2 or M3 District adjoins a Residence District, the steady state and impact vibration displacement, measured at the district boundary, shall not exceed the maximum permitted for an M1 District for the frequencies as set forth in the tables in §42-223 (Maximum permitted steady state vibration displacement) or §42-224 (Maximum permitted impact vibration displacement).

Response:

The Project, an energy storage facility, will not produce vibrations. As such, the Project will comply with this performance standard.

§42-23 Performance Standards Regulating Smoke, Dust and Other Particulate Matter

In all Manufacturing Districts, the density of emission of smoke during normal operations shall not exceed Standard Smoke Chart number# 2, and the quantity of smoke shall not exceed a maximum of 10 smoke units per hour per stack in M1 Districts, 20 such units in M2 Districts, and 30 such units in M3 Districts.

In M2 or M3 Districts, the maximum permitted emission for such minimum-size plants shall be 0.60 in M2 Districts and 0.70 in M3 Districts, and for such maximum-size plants shall be 0.16 in M2 Districts and 0.18 in M3 Districts. All intermediate values shall be determined from a straight line plotted on log graph paper.

In all Manufacturing Districts, all storage areas, yards, service roads, or other untreated open areas within the boundaries of a zoning lot shall be improved with appropriate landscaping or paving, or treated by oiling or any other means as specified in rules and regulations adopted by the Department of Environmental Protection, so that dust or other types of air pollution borne by the wind from such sources shall be minimized.

In addition to the performance standards of regulating smoke and other particulate matter, the emission of such matter shall be so controlled in manner and quantity of emission as not to be detrimental to or endanger the public health, safety, comfort, or other aspects of the general welfare, or cause damage or injury to property.

Response:

The Project, an energy storage facility, will not produce smoke, dust or other particulate matter. As reflected on the Site Plan Drawings in **Appendix B**, upon completion of construction of all phases, the site will be restored with decorative landscape stone and/or standard pavement to minimize the potential for dust. As such, the Project will comply with this performance standard.

§42-24 Performance Standards Regulating Odorous Matter

In M3 Districts, the emission of odorous matter in such quantities as to produce a public nuisance or hazard at or beyond lot lines is prohibited.

Response:

The Project, an energy storage facility, will not produce odors. As such, the Project will comply with this performance standard.

§42-25 Performance Standards Regulating Toxic Noxious Matter

In all Manufacturing Districts, the emission of toxic or noxious matter into the atmosphere shall be in accordance with limits established by the Department of Environmental Protection. In addition to such emission limits, the emission of such matter shall be so controlled that no concentration at or beyond lot lines shall be detrimental to or endanger the public health, safety, comfort, and other aspects of the general welfare, or cause damage or injury to property.

Response:

The Project, an energy storage facility, will not produce toxic noxious matter. As such, the Project will comply with this performance standard.

§42-26 Performance Standards Regulating Radiation Hazards

In M3 Districts no limits as to such permitted quantities shall apply.

Response:

The Project, an energy storage facility, will not produce radiation hazards. As such, the Project will comply with this performance standard.

§42-27 Performance Standards Regulating Fire and Explosive Hazards
In all Manufacturing Districts, Class I materials or products may be stored, manufactured, or utilized in manufacturing processes or other production.

Response:

The Project, an energy storage facility, will not store fire or explosive hazardous materials. The batteries can be classified as a Class I material which is permitted in manufacturing zones. As discussed in Chapter 2, the Project will be designed and constructed to comply with applicable federal, state, and local codes and requirements. The buildings will be outfitted with fire suppression equipment to meet or exceed applicable fire safety codes and standards. As such, the Project will comply with this performance standard.

§42-28 Performance Standards Regulating Humidity, Heat or Glare

When an M3 District adjoins any other district, any activity producing excessive humidity in the form of steam or moist air, or producing intense heat or glare, shall be carried out in such a manner as not to be perceptible at or beyond the district boundary.

Response:

The Project, an energy storage facility, will not produce humidity or intense heat or glare. As such, the Project will comply with this performance standard.

Consistency with Article IV: Manufacturing District Regulations, Chapter 3 – Bulk Regulations

§43-10 Flood Area Regulations

In the M3-1 Zoning District, the maximum floor area ratio shall not exceed 2.00.

Response:

The Project Site is approximately 299,461 square feet. As reflected on the Site Plan Drawings in **Appendix B**, the Project will have a total floor area of 118,103 square feet or a floor area ratio (FAR) of 0.39. Therefore, the Project will have a maximum FAR less than 2.0. As such, the Project will comply with this requirement.

§43-20 Yard Regulations

§43-25 Minimum Required Side Yard

In all districts, no side yards are required. However, if an open area extending along a side lot line is provided, it shall be at least eight feet wide.

Response:

The Project is not required to provide a side yard. As such, the Project will comply with this requirement.

§43-26 Minimum Required Rear Yard

In all districts, a rear yard with a depth of not less than 20 feet shall be provided at every rear lot line on any zoning lot except as otherwise provided in Sections 43-27 (Special Provisions for Shallow Interior Lots), 43-28 (Special Provisions for Through Lots) or 43-31 (Other Special Provisions for Rear Yards). Rear yards shall also be provided along portions of side lot lines as set forth in Section 43-261 (Beyond one hundred feet of a street line).

Response:

As reflected on the Site Plan Drawings in **Appendix B**, the Project will provide a 25-foot setback from the rear yard for buildings. As such, the Project will comply with this requirement.

§43-40 Height and Setback Regulations
§43-43 Maximum Height of Front Wall and Required Front Setback
In all districts, if the front wall or any other portion of a building or other structure is located at the street line or within the initial setback distance as set forth in the table in §43-43, the height of such front wall or other portion of a building or other structure, except as otherwise set forth in this Section, shall not exceed the maximum height above curb level set forth in the table in §43-43. Above such maximum height and beyond the initial setback distance, the building or other structure shall not penetrate the sky exposure plane set forth in the table in §43-43.

Table 2
M-3 Height and Initial Setback Requirements

Initial Setback Distance for Wide Street (feet)[1]	Maximum Height of Front Wall, or other Portion of a Building or other structure within the Initial Setback Distance	Height Above Street Line	Slope over Zoning Lot for Wide Street (expressed as a ratio of vertical distance to horizontal distance)[1]	
			Vertical Distance	Horizontal Distance
15	60 feet or 4 stories, whichever is less	60	5.6	1

Notes: [1] A "wide street" is any street 75 feet or more in width (§12-10 Definitions). 36th Avenue and north/south service roads are 127' wide and Vernon Avenue is 75' wide.
Sources: NYC Zoning Resolution, Article IV, Chapter 3 §43-43.

Response:

As reflected on the Site Plan Drawings in **Appendix B**, the Project's buildings will be setback a distance of 15.5 feet and will be 60 feet in height. As such, the Project will comply with this requirement.

Consistency with Article IV: Manufacturing District Regulations, Chapter 4 – Accessory Off-Street Parking and Locating Regulations

§44-20 Permitted Accessory Off-Street Parking Spaces for Manufacturing, Commercial or Community Facility Uses
Manufacturing or semi-industrial uses. Uses in Use Group 17B, 17D, 18A or 18C, or in PRC F in Use Group 11 or 16, and with a minimum of either 7,500 square feet of floor area or 15 employees. 1 per 1,000 square feet of floor area, or 1 per 3 employees, whichever will require a larger number of spaces - M1-1 M1-2 M1-3 M2-1 M2-2 M3-1.

Response:

The Project will be able to utilize existing personnel at the Ravenswood Generating Station, as such. Therefore, no parking beyond what is already provided at the Ravenswood Generating Station is required.

§44-20 Permitted Accessory Off-Street Loading Berths
In all districts, First 8,000 square feet of floor area - None

Next 17,000 square feet of floor area - 1 required berth Next 15,000 square feet of floor area - 1 required berth Next 20,000 square feet of floor area - 1 required berth.

Each additional 80,000 square feet of floor area or fraction thereof - 1 required berth.

Response:

The Project will be able to utilize existing personnel at the Ravenswood Generating Station, as such. Therefore, off-street loading is not required.

CONSISTENCY WITH NEW YORK CITY ZONING RESOLUTION – ARTICLE VI, CHAPTER 2 SPECIAL REGULATIONS APPLYING IN WATERFRONT AREAS

The provisions of this Chapter establish special regulations which are designed to guide development along the City's waterfront and in so doing promote and protect public health, safety and general welfare. As a portion of the Project Site is located within the waterfront area, an evaluation of the Project's compliance with the applicable sections of this Chapter is provided.

Consistency with §62-30 Special Bulk Regulations

§62-32 Maximum Floor Area Ratios on Waterfront Blocks
§62-326 Buildings in Manufacturing Districts
In Manufacturing Districts, for any zoning lot, the maximum floor area ratio shall be in accordance with the applicable district regulations, except that no floor area bonuses shall be permitted.

Response:

As documented above, the Project's FAR is compliant with the requirements of the M3-1 Zoning District. As such, the Project will comply with the applicable district regulations.

§62-33 Special Yard Regulations on Waterfront Blocks
Yard regulations for zoning lots shall be governed by the provisions of this Section. For developments containing WD uses or, in C8 or Manufacturing Districts, developments comprised predominantly of uses in Use Groups 16, 17 or 18, or for developments on zoning lots that are not waterfront zoning lots, yards shall be provided in accordance with the applicable district regulations. For all other developments, yards shall be provided in accordance with the provisions of Sections 62-331 (Front yards and side yards) and 62-332 (Rear yards and waterfront yards), except that no yard regulations shall be applicable on pier# or floating structures nor may piers or floating structures be used to satisfy any yard requirements.

Response:

The Project consists of a use in Use Group 17 or 18 within the M3 Zoning District. As such, the Project is exempt from these requirements. As documented above, the project will comply with the yard requirements of the site's underlying M3-1 zoning district.

§62-34 Height and Setback Regulations on Waterfront Blocks
Height and setback regulations for zoning lots within waterfront blocks shall be governed by the provisions of this Section. However, airports, heliports, seaplane bases and, in C8 or Manufacturing Districts, developments comprised predominantly of WD uses or uses in Use Group 16, 17 or 18 shall be exempt from the requirements of this Section.

Response:

The Project consists of a use in Use Group 17 or 18 within the M3 Zoning District. As such, the Project is exempt from these requirements. As documented above, the project will comply with the height and setback requirements of the site's underlying M3-1 zoning district.

Consistency with §62-40 Special Parking and Loading Requirements

§62-42 Regulations for Accessory Non-Residential Parking Facilities
The applicable district regulations pertaining to permitted or required off-street parking facilities accessory to non-residential uses shall apply to all developments on waterfront blocks except as modified in this Section or in Section 62-45.

Response:

The Project will be able to utilize existing personnel at the Ravenswood Generating Station, as such. Therefore, off-street parking is not required.

§62-46 Regulations for Accessory Non-Residential Parking Facilities
The applicable district regulations pertaining to permitted or required accessory off-street loading facilities shall apply to all developments, except as modified in this Section.

Response:

The Project will be able to utilize existing personnel at the Ravenswood Generating Station, as such, off-street loading is not required.

Consistency with §62-50 General Requirements for Visual Corridors and Waterfront Public Access

All zoning lots developed within waterfront blocks shall be subject to the provisions of this Section and Section 62-81 (Certifications by the Chairperson of the City Planning Commission).

Response:

As identified in §62-51 and §62-52, developments in Manufacturing Districts comprised of uses in Use Groups 17 or 18, are exempt from the requirements to provide visual corridors and public access to the waterfront. As such, the Project is exempt from these requirements.

CONSISTENCY WITH NEW YORK CITY ZONING RESOLUTION – ARTICLE VI, CHAPTER 4 SPECIAL REGULATIONS APPLYING IN FLOOD HAZARD AREAS

The provisions of this Chapter establish special regulations which are designed to encourage flood-resilient building practices for new and existing buildings and in so doing promote and

protect public health, safety and general welfare. As a portion of the Project Site is located within the flood zone, an evaluation of the Project's compliance with the applicable sections of this Chapter is provided.

Consistency with §64-30 Special Bulk Regulations

§64-31 Special Flood Area Regulations
§64-321 Level of Required Yards
Underlying yard regulations shall be modified to allow yards to be higher than curb level but in no event higher than flood-resistant construction elevation. In addition, the following regulations shall apply: in C7 and C8 Districts and in Manufacturing Districts, yards shall be permitted to a maximum grade equal to flood-resistant construction elevation. However, for portions of zoning lots where Sections 33-29 and 43-30 (SPECIAL PROVISIONS APPLYING ALONG DISTRICT BOUNDARIES) apply, yards are permitted above curb level only pursuant to paragraph (a) of this Section.

Response:

The Project will not result in the yard to be higher than curb level. As such, the Project is in compliance with this requirement.

§64-322 Permitted Obstructions in required yards, courts and open space
For all buildings, except single- and two-family residences, accessory mechanical equipment shall be a permitted obstruction in rear yards and rear yard equivalents, provided that such equipment is:

(1) located above flood-resistant construction elevation;

(2) enclosed within a building, or portion thereof, or within a structure that provides screening of such mechanical equipment on all sides by walls consisting of at least 50 percent opaque materials;

(5) in Commercial or Manufacturing Districts, limited to a height of 23 feet above flood-resistant construction elevation.

Response:

The Project's accessory equipment (e.g., inverters and transformers) will be located within an enclosure and will not be located within the rear yard. As such, the Project is in compliance with this requirement.

§64-33 Special Height and Setback Regulations
§64-336 Alternative height measurement in Commercial and Manufacturing Districts
In the districts indicated, as an alternative to Section 64-131, for all buildings other than residential buildings and buildings containing predominantly Use Group 16, 17 or 18 uses, where street walls are within 50 feet of a street line and flood-resistant construction elevation is between five and 12 feet above curb level, building height may be measured from a reference plane 12 feet above curb level, and any minimum base height requirements may be measured from curb level. Where the provisions of this Section are utilized, the standards of Section 64-642 (Transparency requirements for buildings utilizing alternative height measurement) shall be met.

Response:

As documented above, the Project consists of a use in Use Group 17 or 18 within the M3 Zoning District. As such, the Project will comply with the applicable district regulations.

Consistency with §64-60 Design Requirements

> *§64-64 Design Requirements for Non-residential and Mixed Buildings in Commercial and Manufacturing Districts*
> *§64-641 Transparency Requirements*
> *In the districts indicated, the provisions of this Section shall apply to all buildings, other than:*
>
> *(b) in C8 Districts and Manufacturing Districts, other than Special Mixed Use Districts, buildings containing predominantly Use Group 16, 17 or 18 uses.*

Response:

As documented above, the Project consists of a use in Use Group 17 or 18 within the M3 Zoning District. As such, the Project is exempt from these requirements.

> *§64-65 Screening Requirements for Parking Within or Below Buildings*
> *The provisions of this Section shall apply to all buildings, other than:*
>
> *(b) in C8 Districts and Manufacturing Districts, other than Special Mixed Use Districts, buildings containing predominantly Use Group 16, 17 or 18 uses.*

Response:

As documented above, the Project consists of a use in Use Group 17 or 18 within the M3 Zoning District. As such, the Project is exempt from these requirements.

B. COMMUNITY FACILITIES AND SERVICES

This section considers the potential of the Project to affect community facilities and services on or near the Project Site. Community facilities are public or publicly-funded facilities, such as schools, hospitals, libraries, day care centers, etc. An impact generally occurs when a project either physically displaces or alters a community facility, or causes a change in population that could affect essential community services, such as the police or fire departments.

EXISTING CONDITIONS

Emergency services for the Project area are provided by the New York City Police Department (NYPD), Police Precinct 114 and the Fire Department of New York (FDNY), Fire Department L116.

The Project Site is located within New York City School District #30.

A list of the community facilities located within the quarter-mile study area are shown in **Figure 5** and listed in **Table 3**.

Table 3
Community Facilities within Study Area

Resource Type	Resource ID[1]	Name
Park	1	Grandpa Al Lewis Playground
	2	Spirit Playground
	3	Rainey Park
Church	4	St. Frances Cabrini Church
	5	Chapel of the Good Shepard
	6	Friendship Baptist Church
	7	Greater Trinity Baptist Church
	8	Pentecostal Christian
	9	Hour Children Inc.
	10	St. Ritas Roman Catholic Church
	11	Adath Isreal Center
	12	Queens Plaza Kingdom Hall
Fire Station	13	FDNY Special Operations Command
	14	FDNY Engine 260
School	15	PS 76 William Hallet
	16	PS 111 Jacob Blackwell
	17	PS/IS 217 Roosevelt Island

Notes: [1] As referenced on Figure 5.

ASSESSMENT OF POTENTIAL IMPACTS

The Project will not result in the displacement of community facilities during either construction or operation. An average of 100 to 120 workers, which can be accommodated within the Ravenswood Generating Station, will be required during peak construction period. During operation, the Project will be able to utilize existing personnel at the Ravenswood Generating Station, as such, the required workforce will have minimal impact on the number of people in the community using community facilities or services.

C. CULTURAL RESOURCES

This section identifies the applicable laws, policies, and regulations as related to the protection of archaeological and historic recourses. A summary of the existing setting of known cultural resources is provided as well as an evaluation of the Project's potential impacts to known resources.

APPLICABLE LAWS, POLICIES, AND REGULATIONS

A cultural resources review was conducted in accordance with the New York State Historic Preservation Office (SHPO) Environmental Review Program, which includes the following:

- Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended through 2000
- Section 14.09 the Parks, Recreation and Historic Preservation Law, which was enacted by the New York State Historic Preservation Act of 1980 (Chapter 354 of the Laws of 1980)

- State Environmental Quality Review Act (SEQRA) regulations (6 NYCRR Part 617)

In New York State, the Office of Parks, Recreation and Historic Preservation (OPRHP) serves as the SHPO. Under Section 14.09 of the Parks, Recreation and Historic Preservation Law, the New York SHPO's role in the review process is to ensure that impacts on eligible or listed properties are considered and avoided or mitigated during the project planning process. In addition, the SHPO advises local communities on local preservation environmental reviews, upon request, under the provisions of SEQRA (OPRHP, 2015).

EXISTING CONDITIONS

Background research of the Project Site and environs using the National Park Service, National Register of Historic Places (NPS, NRHP) and the OPRHP's Cultural Resource Information System (CRIS) website found no National Register-listed or State Register-listed historic sites on the Project Site.

Within the quarter-mile study area, there is one NRHP-listed building within the quarter-mile study area – the Chapel of the Good Shepard located on Roosevelt Island to the west of the Project Site (see **Figure 6**). In addition, the Project Site is located adjacent to the Harbor Park NYS Heritage Area.

ASSESSMENT OF POTENTIAL IMPACTS

The construction of the Project will be located within approximately seven acres of the previously disturbed northeastern portion of the Ravenswood Generating Station. The Project requires the demolition of 16 existing, gas-fired combustion turbines and associated equipment currently located in the area to be developed for battery storage.

As there are no archaeological or historic resources listed (or eligible to be listed) on the State Register or NRHP for the Project property, and the Project impacts will be limited to the property, the Project will not result in impacts to cultural resources. As per their letter dated December 4, 2018, the New York OPRHP has confirmed that the Project will have no impact on archaeological and/or historic resources listed in or eligible for the NYS and NRHP (**Appendix C**).

As the Project will not entail work within the East River, the Project will not have an adverse impact on the Harbor Park NYS Heritage Area.

D. VISUAL RESOURCES

This section considers the potential of the Project to affect visual resources on or near the Project Site.

EXISTING CONDITIONS - REGIONAL AND LOCAL LANDSCAPE

The Project will be located on approximately seven acres within the existing Ravenswood Generating Station. As described in "Land Uses", the Project Site is bordered by the Roosevelt Island Bridge Access to the north and Con Edison's Rainey Substation to the north, Vernon Boulevard to the east, the main Ravenswood Generating Station to the south, and the East River to the west. Con Edison's Vernon Substation is adjacent to the Ravenswood Generating Station property to the south (see **Figure 2**).

Landforms. Elevations within the property range from approximately 8 feet (ft.) above mean sea level (MSL) along the East River to approximately 20 ft. MSL along Vernon Boulevard.

Travel Corridors. The major thoroughfares in the Project area include the Grand Central Parkway (I-278), State Route 25 via the Queensboro Bridge and the FDR Drive in Manhattan.

Water Resources. The Project Site is located along the East River.

Land Use Patterns. The land uses within a quarter-mile of the Project Site are dominated by existing developed land uses (high and medium intensity).

State, County, and Local Parks/Management Areas. As reflected in **Table 3** above, there are several parks within the study area.

Historic Resources. A review of available databases was conducted to identify historic resources, including, Geographic Information System (GIS) data for NRHP from the National Park Service as well as OPRHP's CRIS. As identified above in "Cultural Resources", there is one NRHP-listed site within the quarter-mile study area.

NYSDEC VISUAL POLICY RESOURCE INVENTORY

The NYSDEC issued a Program Policy on July 31, 2000 entitled "*Assessing and Mitigating Visual Impacts*." This document defines State regulatory concerns and provides the framework for evaluating visual and aesthetic impacts generated from proposed development. This NYSDEC policy also defines important technical concepts and methods for compliance with SEQRA with respect to environmental aesthetics. With this policy, NYSDEC asserts that the state's interest with respect to aesthetic resources is to protect those resources whose scenic character has been recognized through national or state designations. Aesthetic resources reviewed include:

1) *A property on or eligible for inclusion in the National or State Register of Historic Places* [16 U.S.C. §470a et seq., Parks, Recreation and Historic Preservation Law Section 14.07]. There is one property listed on the NRHP within the study area.

2) *State Parks* [Parks, Recreation and Historic Preservation Law Section 3.09]. There are no state parks located within the study area.

3) *Urban Cultural Parks* [Parks, Recreation and Historic Preservation Law Section 35.15]. The State Heritage Areas program has replaced the urban cultural parks program. The Harbor Park NYS Heritage Areas is located within the study area.

4) *The State Forest Preserve* [NYS Constitution Article XIV]. The state forest preserve is limited to the Adirondack and Catskill Parks, and some portions of the counties where these two parks are located. There are no such lands within the study area.

5) *National Wildlife Refuges* [16 U.S.C. 668dd], *and State Game Refuges* [ECL 11 2105]. There are no National Wildlife Refuges (NWF) or State Game Refuges (SGR) located within the study area.

6) *National Natural Landmarks* [36 CFR Part 62]. There are no National Natural Landmarks (NNL) located within the study area.

7) *The National Park System* [16 U.S.C. 1c]. There are no national parks located within the study area.

8) *Rivers designated as National or State Wild, Scenic or Recreational* [16 U.S.C. Chapter 28, ECL 15 2701 et seq.]. There are no rivers designated as National or State Wild, Scenic or Recreational located within the study area.

9) *A site, area, lake, reservoir or highway designated or eligible for designation as scenic* [ECL Article 49]. Areas subject to Article 49 designation include Scenic Byways (now under the purview of the New York State Department of Transportation [NYSDOT]), parkways designated by the Office of Parks, Recreation and Historic Preservation (OPRHP), and other areas designated by NYSDEC. According to NYSDOT, there are no designated scenic byways or scenic roads in the study area.

10) *Scenic Areas of Statewide Significance* [Article 42 of Executive Law]. There are no Scenic Areas of Statewide Significance (SASS) located within the study area.

11) *A state or federally designated interstate or inter county foot trail, or one proposed for designation* [16 U.S.C. Chapter 27 or equivalent]. There are no trails within the study area.

12) *Adirondack Park Scenic Vistas*. The Project is not located in the Adirondack State Park.

13) *State Nature and Historic Preserve Areas*. There are no preserves located within the study area.

14) *Palisades Park*. The Project is not located in the Palisades Park.

15) *Bond Act Properties* purchased under Exceptional Scenic Beauty category. There are no properties under this designation located within the study area.

An inventory of additional visual resources including scenic easements, public parks and recreation areas, scenic overlooks, other environmentally sensitive community lands and general areas of public access is also considered within the context of the NYSDEC Policy.

Figure 7 shows the location of the identified visual resources within the quarter-mile study area.

ASSESSMENT OF POTENTIAL IMPACTS

The Project is not anticipated to have adverse visual impacts to surrounding areas. As the Project is located within the existing Ravenswood Generating Station, visual impacts to sensitive resources will be limited. The Site's sloping grade towards the East River and the presence of the existing brick security wall will limit visibility at street level from Vernon Boulevard and areas to the east. The Site's slope and 36th Street transition to the Roosevelt Island Bridge will limit visibility from the north. Considering removal of existing combustion turbines and associated equipment, views from the East River and Roosevelt Island will experience an incremental change, but are not anticipated to be out of character with views of the overall Ravenswood Generating Station structures. Views will be compatible with the existing Station components, including the Station's existing stacks at: 499 ft. (Unit 10), 499 ft. (Unit 20), 499 ft. (Unit 30), and 400-ft. (Unit 40) in height. Lighting will be kept to a minimum and will be associated with building entries and where required by code.

E. SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

This Section evaluates the existing demographics and economic status (i.e., income levels) of the Project area and assesses social and economic effects associated with the Project during construction and operation.

The Project Site is located in Queens County, New York. In the 2010 Census, Queens County had a population of 2,230,722 and the estimated 2017 population is 2,358,582. Queens County has a higher population density compared to the New York State average (20,553.6 persons per square mile versus 411.2 persons per square mile). Queens County has a lower median household income compared to New York State ($62,008 versus $62,765). The unemployment rate in Queens County is higher than New York State (6.9% versus 6.8%) as is the civilian workforce (64.1% versus 63.1%) while the number of persons living in poverty is less in Queens County than in New York State (12.2% versus 14.1%) (see **Table 4**).

Table 4
Existing Economic Conditions

State, County	Population (2010)[1]	Population (2017)[1]	Population Density (Persons/ square mile)[1]	Median Household Income[1]	Unemployment Rate[2]	Civilian Labor Force (percent)[1]	Persons in Poverty (percent)[1]
New York State	19,378,102	19,849,39	411.2	$62,765	6.8%	63.1%	14.1%
Queens County	2,230,722	2,358,582	20,553.6	$62,008	6.9%	64.1%	12.2%

Sources: [1] U.S Census Bureau Quick Facts. https://www.census.gov/quickfacts/fact/table/US/PST045218
[2] U.S. Census Bureau, 2017. 2013-2017 American Community Survey 5-Year Estimates. https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml

Queens County has a higher minority population as compared to New York State (see **Table 5**).

Table 5
Ethnic Comparisons

State, County	White alone (percent)	Black or African American (percent)	American Indian and Alaska Native alone (percent)	Asian alone (percent)	Native Hawaiian and Other Pacific Islanders alone (percent)	Two or More Races (percent)	Hispanic or Latino (percent)
New York State	69.9%	17.7%	1.0%	9.1%	0.1%	2.5%	19.2%
Queens County	47.9%	20.5%	1.3%	27.1%	0.2%	2.9%	28.0%

Sources: [1] U.S Census Bureau Quick Facts. https://www.census.gov/quickfacts/fact/table/US/PST045218

The Project Site falls within Queens Census Block Group 37-1008. Based on 2010 Census Data, the total population of this Census Block Group is 0.

POTENTIAL ENVIRONMENTAL JUSTICE AREAS

The NYSDEC identifies Potential Environmental Justice (Potential EJ) Areas, based on the 2000 U.S. Census block groups, which had populations that met or exceeded at least one of the following statistical thresholds:

- At least 51.1% of the population in an urban area reported themselves to be members of minority groups; or
- At least 33.8% of the population in a rural area reported themselves to be members of minority groups; or
- At least 23.59% of the population in an urban or rural area had household incomes below the federal poverty level

According to the NYSDEC Potential EJ Mapping by County, the Project Site is located within a Potential EJ Area (see **Figure 8**). **Table 6** identifies the NYSDEC Potential EJ Areas within the quarter-mile study area.

Table 6
Minority Data by Census Tract and Block Group

Census Block Group ID	2000 Population	Minority Population (%)	Income Below Federal Poverty Level (%)	Area Designation[1]	County
360610238009	9520	55.78	16.93	Rural	New York
360810037001	1414	97.81	45.63	Urban	Queens
360810039001	1516	78.5	23.22	Urban	Queens
360810041001	925	67.78	24.76	Urban	Queens

Notes: [1] NYCDEC CP-29 defines *Urban Area* as "*all territory, population, and housing units located in urbanized areas and in places of 2,500 or more inhabitants outside of an urbanized area. An urbanized area is a continuously built-up area with a population of 50,000 or more. For purposes of this policy, urban classifications are established by the U.S. Census Bureau*." *Rural area* is defined as "*territory, population, and housing units that are not classified as an urban area*."

Sources: 2000 U.S. Census, NYSDEC Potential EJ Areas GIS Data

ASSESSMENT OF POTENTIAL IMPACTS

The Project will generate economic benefits to the surrounding communities, including temporary construction jobs, local spending in the area on supplies and materials for construction, and spending by construction workers in the area on food, lodging, and other services.

The Project will not have an adverse or disproportionate effect on the Potential EJ Areas. The Facility will show beneficial effects on air quality (replacing combustion turbines with energy storage technology), will have no significant adverse visual impacts and the Facility will comply with State and City noise standards, and as a consequence, will not result in adverse noise impacts.

F. TRAFFIC AND TRANSPORTATION

This Section addresses issues relative to traffic and transportation, including a review of the existing roadway network and traffic operations in the vicinity of the Project Site.

EXISTING CONDITIONS

The Project is located within the existing Ravenswood Generating Station. The Station is accessed from Vernon Boulevard. **Figure 9** illustrates the Project Site and surrounding roadways.

TRUCK ROUTES

Key New York State Department of Transportation (NYSDOT) truck routes within the Project area include Vernon Boulevard, Astoria Boulevard, Grand Central Parkway (I-278), and New York State Route 25 via the Queensboro Bridge.

PUBLIC TRANSPORATION

The Project Site is accessible by public transportation, including subway (F train) and public bus (Routes 102 and 103).

ASSESSMENT OF POTENTIAL IMPACTS

During construction, anticipated Project-related traffic will consist of commuting construction workers and material/equipment deliveries. An average 100 to 120 workers will be on-Site during peak construction periods. An appropriate on-Site parking plan will be developed adjacent to the Project Site within the Ravenswood Generating Station to accommodate the construction workforce. Construction is anticipated to occur between the hours of 7:00 AM and 6:00 PM, Monday through Friday. Access to the Project Site will be through the existing Station security gate and/or the secure shipping entrance off Vernon Boulevard.

It is anticipated that Project-related deliveries and construction crews will utilize the Grand Central Parkway (I-278) and the Long Island Expressway (I-495) from the east and west. These trucks and vehicles will use NYSDOT designated truck routes (e.g., Astoria Boulevard and Vernon Boulevard) to the Station entrances. Deliveries can be dispersed throughout the day and scheduling of large deliveries will avoid the roadway peak hours and be coordinated in advance with Station operation representatives.

Based on the limited number of construction workers, the temporary construction of the Project will not have a significant impact on traffic operating conditions and the existing traffic roadway network will be able to support the anticipated traffic. Roadway improvements will not be required for the construction phase of this Project. Further, the Project will not require any work in public-right-of-ways utilized by the general city population such as sidewalks, vehicular street infrastructure, and will have no impact on waterway, subways or bridges. Staging of materials for the construction of the Project will be within the Station property and will not result in localized vehicular traffic congestion created by street barriers or enclosures typically associated with construction in city environments.

After completion of the Project, the operation of the Facility will result in minimal traffic in the area as the Facility will utilize existing personnel from the Ravenswood Generating Station.

Therefore, Project-related traffic during operations will not have a significant impact on traffic operating conditions and the existing traffic roadway network.

G. NOISE

This section summarizes the noise standards and guidelines that are applicable to the Project, the existing ambient noise conditions in the Project area and the potential impacts of the Project with respect to noise. The Project's full noise analysis report is provided in **Appendix E**.

APPLICABLE STANDARDS AND GUIDELINES

Noise levels associated with the construction and operation of the Project would be subject to the noise standards of the New York City Zoning Resolution Performance Standards for Manufacturing Districts, New York City Noise Control Code, and the NYSDEC Noise Policy.

PERFORMANCE STANDARDS FOR MANUFACTURING DISTRICTS

The City's Zoning Resolution Section 42-213 states that in all manufacturing districts, the sound pressure level resulting from any activity, whether open or enclosed, shall not exceed, at any point on or beyond any lot line, the maximum permitted sound level for the designated octave band (indicated in **Table 7)** for an M3 zone.

The Performance Standards in New York's Zoning Resolution are specified in "old" octave bands. These bands have not been used in almost 40 years, and instrumentation is no longer available to measure per these specifications. The American National Standards Institute (ANSI) has promulgated a standard on the conversion of old octave bands to the current preferred values (and vice versa), to allow measurement and assessment. Converted criteria are provided in **Table 7**.

Table 7
City of New York Noise Performance Standards for M3 Manufacturing District

Old Octave Bands	Current Octave Bands	
Octave Band (Hz)	**Octave Band (Hz)**	**M3 District (dB)**
20 to 75	63	78
75 to 150	125	75
150 to 300	250	69
300 to 600	500	63
600 to 1200	1000	57
1200 to 2400	2000	52
2400 to 4800	4000	49
Above 4800	8000	45
Sources: City of New York Performance Standards for Manufacturing Districts §42-213		

N*EW YORK CITY NOISE CONTROL CODE*

The NYC Noise Control Code as amended in December 2005 contains: prohibitions regarding unreasonable noise; requirements for noise due to construction activities; and specific noise standards which include plainly audible criteria for specific noise sources. In addition, the amended code specifies that no sound source operating in connection with any commercial or

business enterprise may exceed the decibel levels in the designated octave bands shown in **Table 8** at the specified receiving properties.

Table 8
New York City Noise Control Code

Octave Band Frequency (Hz)	Maximum Pressure Levels (dB) as Measured within a Receiving Property as Specified Below	
	Residential receiving property for mixed-use building and residential buildings (as measured within any room of the residential portion of the building with windows open, if possible)	*Commercial receiving property (as measured within any room containing offices within the building with windows open, if possible)*
63	61	64
125	53	56
250	46	50
500	40	45
1000	36	41
2000	34	39
4000	33	38
8000	32	37
Sources: §24-232 of the Administrative Code of the City of New York, as amended December 2005.		

NYSDEC NOISE IMPACT CRITERIA

The NYSDEC has published a policy and guidance document, Assessing and Mitigating Noise Impacts (DEP 00 1, February 2, 2001), which presents noise impact assessment methods, identifies thresholds for significant impacts, and discusses potential avoidance and mitigation measures to reduce or eliminate noise impacts.

NYSDEC's guidance document sets forth thresholds that can be used in determining whether a noise increase due to a project may constitute a significant adverse impact, noting that these thresholds should be viewed as guidelines subject to adjustment as appropriate for the specific circumstances. According to DEP-00-1:

- Increases in noise ranging from 0 to 3 dBA should have no appreciable effect on receptors;
- Increases of 3 to 6 dBA may have the potential for adverse impacts only in cases where the most sensitive of receptors (e.g., hospital or school) are present;
- Increases of more than 6 dBA may require a closer analysis of impact potential depending on existing noise levels and the character of surrounding land use and receptors; and
- Increases of 10 dBA or greater deserve consideration of avoidance and mitigation measures in most cases.

The guidance document also sets forth noise thresholds that can be used in identifying whether a noise level due to a project should be considered a significant adverse impact. According to the guidance, the addition of any noise source in a non-industrial setting should not raise the ambient noise level above a maximum of 65 dBA, and ambient noise levels in industrial or commercial areas may exceed 65 dBA with a high end of approximately 79 dBA. As set forth in

the guidance, projects that exceed these levels should explore the feasibility of implementing mitigation.

Based on these criteria, an increase of 6 dBA over baseline noise levels is considered significant, and therefore a "noise disturbance."

NOISE ANALYSIS METHODOLOGY

To determine potential noise impacts due to the proposed project, a screening analysis was performed. The screening analysis consisted of the following steps:

- Determine a receptor location to represent noise-sensitive land uses (i.e. residences, churches, schools, etc.) closest to the facility within the adjacent study area;
- Measure existing ambient noise levels at the selected receptor location during the quietest time of the day/night when the proposed project equipment may be operating. In order to capture the lowest noise levels at locations adjacent to the proposed project, a continuous noise measurement was taken for 24 hours over the course of two weekdays;
- Determine individual equipment sound power levels or sound pressure levels based on best available manufacturer data and published material;
- Determine the location of individual equipment on the project site;
- Calculate noise levels at sensitive receptor locations and the Project's site boundary using acoustical fundamentals; and
- Compare calculated noise levels with standards and existing ambient noise levels.

EXISTING CONDITIONS

The Project Site is located on the existing Ravenswood Generating Station site at the southwest corner of 36th Avenue and Vernon Boulevard in Queens, NY.

CONTINUOUS NOISE MONITORING

One continuous noise measurement site was analyzed in the vicinity of the proposed battery storage facility. The monitoring location was chosen based on proximity to the Project Site and proximity to nearby noise sensitive receptors. The selected noise monitoring site represents the residential and commercial receivers across Vernon Boulevard where maximum Project impacts would be expected.

The monitoring location is shown on **Figure 10**. The continuous 24-hr. measurement was performed at the Northeast corner of the Ravenswood Generating Station at the lot line. A microphone was elevated to approximately 10 feet in order to have direct line of site to Vernon Boulevard over the exterior wall surrounding the site. This monitoring location represents four-story residential receivers at the southeast corner of 36th Avenue and Vernon Boulevard. Existing equipment within the Ravenswood Generating Station and vehicular traffic on Vernon Boulevard were the dominant noise sources at the survey location.

Existing noise levels were measured continuously over a 24-hour period beginning on the morning of Tuesday, November 20, 2018. Noise levels late at night represent the lowest ambient noise levels.

RESULTS OF BASELINE (EXISTING) NOISE MEASUREMENTS

Table 9 shows the minimum measured $L_{eq(1h)}$ noise levels at the receptor location, which was used as baseline levels for the noise analysis. In general, the measured noise levels are moderate and directly related to the volume of traffic on Vernon Boulevard as well as the amount of activity occurring in the existing Ravenswood Generating Station. The lowest measured noise levels occurred during the very early hours of the morning, when vehicular traffic was at the lowest level.

Table 9
Lowest Measured Existing Background Noise Levels (in dBA)

Site	Location	$L_{eq(1h)}$
1	Northeast Corner of Ravenswood Generating Station along Vernon Boulevard	61.5
Notes:	Field measurements were performed on November 20, 2018.	

CONSTRUCTION NOISE

Construction of the Project will generate noise from construction equipment, construction vehicles, and delivery vehicles traveling to and from the Project Site. Noise levels caused by construction activities will vary widely, depending on the phase of construction—grading, excavation, foundation, placement of the structures, etc.—and the specific task being undertaken. All construction activities will be conducted in full compliance with existing regulations, including use of mufflers on all construction equipment, as well as local day and hour construction limitations.

Various state and federal requirements mandate that certain classifications of construction equipment and motor vehicles be used to minimize adverse impacts. Thus, construction equipment will meet specific noise emission standards. Usually, noise levels associated with construction and equipment are identified for a reference distance of 50 feet, as shown in **Table 10**.

Table 10
Typical Noise Emission Levels For Construction Equipment

Equipment Item	Noise Level at 50 Feet (dBA)
Air Compressor	81
Asphalt Spreader (paver)	89
Asphalt Truck	88
Backhoe	85
Bulldozer	87
Compactor	80
Concrete Plant	83(1)
Concrete Spreader	89
Concrete Mixer	85
Concrete Vibrator	76
Crane (derrick)	76
Delivery Truck	88
Diamond Saw	90(2)
Dredge	88
Dump Truck	88
Front End Loader	84
Gas-driven Vibro-compactor	76
Hoist	76
Jack Hammer (Paving Breaker)	88
Line Drill	98
Motor Crane	93
Pile Driver/Extractor	101
Pump	76
Roller	80
Shovel	82
Truck	88
Vibratory Pile Driver/Extractor	89(3)

Notes: [1] Wood, E.W., and A.R. Thompson, Sound Level Survey, Concrete Batch Plant; Limerick Generating Station, Bolt Beranek and Newman Inc., Report 2825, Cambridge, MA, May 1974.

[2] New York State Department of Environmental Conservation, Construction Noise Survey, Report No. NC-P2, Albany, NY, April 1974.

[3] F.B. Foster Company, Foster Vibro Driver/Extractors, Electric Series Brochure, W-925-10-75-5M.

Sources: Patterson, W.N., R.A. Ely, And S.M. Swanson, Regulation of Construction Activity Noise, Bolt Beranek and Newman, Inc., Report 2887, for the Environmental Protection Agency, Washington, D.C., November 1974, except for notated items.

Significant noise levels typically occur nearest the construction activities, and may reach as high as 90 A-weighted decibels (dBA) under worst-case conditions. The level of noise impacts at local receptors will depend on the noise characteristics of the equipment, the activities involved, the hours of operation, and the location of sensitive noise receptors. Noise levels will decrease with distance from the construction area. Increased noise levels at the Project Site due to construction activity can be expected to be most significant during the early construction phases

involving demolition and grading, and intermittent based on the equipment in use and the work being done.

ANALYSIS RESULTS

NOISE MODELLING ASSUMPTIONS

The Project will include three battery buildings that contain lithium-ion battery storage units. The battery units produce no noise, but require temperature control through air-conditioning units which are proposed as rooftop units on each of the three main battery buildings. The Project will require 136 inverters and 68 transformers on skids surrounding the buildings in clusters. In addition, two step-up transformers located outdoors within the Ravenswood Generating Station are proposed as part of this Project.

Manufacturer-provided noise emission information for the inverters, transformers and the RTUs is shown in **Table 11**. While actual equipment procured may vary, the noise emissions of the procured equipment will be similar and equivalent to that modeled for the project.

Table 11
Equipment Sound Pressure Levels[1] in dB

Equipment Model	Qty. in Project	Octave Band Center Frequencies, in Hertz								Overall Sound Level in dBA
		63	125	250	500	1k	2k	4k	8k	
Sunny Central Storage 2500-EV-US Inverter[2,3]	136	64	62	69	62	56	56	44	37	64
5,600 kVA Transformer (for inverter pair)[4]	68	42	54	56	62	59	55	50	41	65
AAON Rooftop AC (RTU) Units[5]	43	60	65	63	62	60	57	53	47	65
Main Power (GIS) Transformer[6]	2	88	83	85	83	82	78	69	63	86

Notes:
[1] Sound Pressure Levels in dB ref: 20 micropascals (μPa)
[2] Sound pressure levels measured at a distance of 33 feet.
[3] Octave Band Data predicted based on total noise emission provided by SMA and octave band data for similar equipment.
[4] Sound pressure levels measured at a distance of 1 feet.
[5] Sound pressure levels measured at a distance of 10 feet.
[6] Sound pressure levels based on data from a 160 mVA Transformer measured at 1 foot, as provided by client. Assumes full load with fans operating. Octave Band Data predicted based on total noise emission provided by SMA and octave band data for similar equipment.

Two separate analyses were performed: 1) whether the Project would result in an increase in ambient noise levels that would be expected to exceed NYSDEC noise impact criteria, and 2) whether noise levels produced by the Project would be expected to result in exceedances of the NYC Noise Control Code or NYC Zoning Resolution Performance Standards for Manufacturing Districts.

NYSDEC IMPACT ANALYSIS

Future noise levels with the proposed project in operation were predicted at the property line of the closet residential receptor using the methodology described above. The predicted future

noise levels at the closest residential receptor site along with the incremental change in noise levels are shown in **Table 12**.

Table 12
Future with Proposed Project (in dBA)

Receptor	Location	Existing Measured L_{eq}	Project Generated L_{eq1}	Future With Project L_{eq}	Increase Over Existing L_{eq}
1	Northeast Corner of Ravenswood Generating Station along Vernon Boulevard	61.5	61.0	64.3	2.8

The maximum predicted increase in noise levels due to the operation of the Project at the nearest residential receptor is anticipated to be less than 3 dBA which represents a barely perceptible change in noise levels and is below the NYSDEC threshold for appreciable effects at any receptor.

NEW YORK CITY NOISE CONTROL CODE

Using the methodology described above, noise levels due to the operation of the Project were calculated at the nearest receptor location. **Table 13** shows the calculated noise levels compared to §24-232 of the NYC Noise Code for all octave band and A-weighted limits.

Table 13
Anticipated Compliance with NYC Noise Code at Nearest Sensitive Receptor

	Octave Band Center Frequencies (Hz)								
	63	**125**	**250**	**500**	**1k**	**2k**	**4k**	**8k**	**A-Weighted**
Sound Pressure at Nearest Receptor (dB)[1]	55	51	45	39	36	34	32	31	43
NYC Noise Code Criteria (dB)	61	53	46	40	36	34	33	32	45
Exceedance?	No	No	No	No	No	No	No	No	No

Notes: [1] As measured 3 feet inside closest open window

As shown in **Table 13**, the noise levels from the Project are predicted to be below NYC Noise Code limits at the closest residential location representing neighboring properties that will experience the greatest noise levels from the Project (e.g., worst-case scenario); therefore, exceedances are not anticipated at properties farther from the Project Site.

NEW YORK CITY ZONING RESOLUTION PERFORMANCE STANDARDS FOR MANUFACTURING DISTRICTS

Using the methodology described above, Project noise levels were modeled at lot line locations, per NYC Zoning Resolution Performance Standards. **Table 14** shows the calculated noise levels compared to the NYC Zoning Resolution Performance Standards for Manufacturing Districts in any of the octave band frequencies.

Table 14
Anticipated Compliance with NYC Zoning Resolution Noise Performance Standards for M3 Manufacturing District at Nearest Sensitive Receptor

	Octave Band Center Frequencies (Hz)							
	63	**125**	**250**	**500**	**1k**	**2k**	**4k**	**8k**
Sound Pressure Level at Lot Line (dB)	64	63	61	56	50	45	44	33
NYC Zoning Resolution Performance Standards (dB)	78	75	69	63	57	52	49	45
Exceedance?	No	No	No	No	No	No	No	No

As shown in **Table 14**, the Project will not result in noise levels that would exceed the noise level criteria set forth in the NYC Zoning Resolution Performance Standards for Manufacturing Districts in any of the octave band frequencies.

NOISE CONTROL DESIGN REQUIREMENTS

The above noise impact analysis are predicated upon the incorporation of noise control design requirements in the form of sound-attenuating enclosures that will need to be provided for the Project's inverter/transformer skids. Appropriate acoustical performance requirements for the enclosure will need to be included in the construction contract to ensure noise standards are achieved. The following language or materially similar is recommended::

"*All inverter equipment contained within the enclosure or building shall be attenuated in order to comply with the following sound pressure levels (SPL re: twenty (20) micropascals) determined as the average of measurements taken at four (4) locations around the periphery of the enclosure or building including at least two (2) louvers or other ventilation openings in enclosures or building, when measured three (3) ft in the horizontal plane and at an elevation of 5 ft above floor level adjacent to the enclosure or building, with inverters operating at full-load and ventilation equipment operating.*"

Not to Exceed Limits for Sound Attenuating Enclosures

	Octave Band Center Frequencies (Hz)								
	63	**125**	**250**	**500**	**1k**	**2k**	**4k**	**8k**	**A-Weighted**
Maximum Sound Pressure Level [1] (dB)	90	79	70	62	54	59	58	56	69
Notes: (1) As measured 3 feet in the horizontal plane and at an elevation of 5 ft. above floor level adjacent to the enclosure at locations around the periphery of the enclosure, including louvers or other ventilation openings in enclosures, with inverters operating at full-load.									

CONCLUSION

As discussed above, a noise assessment was performed to determine compliance with applicable noise regulations. With the incorporation of sound attenuating inverter enclosures, predicted noise levels from the Project is not expected to exceed the criteria in §24-232 of the NYC Noise Code or the noise level criteria set forth in the NYC Zoning Resolution Performance Standards for Manufacturing Districts in any of the octave band frequencies. The anticipated worst case incremental change in noise levels over existing noise levels is less than 3 dBA, which is considered a barely perceptible change, and below NYSDEC thresholds for further mitigation. Therefore, the Project will not result in any significant adverse noise impacts.

H. GEOLOGY AND SOILS

This section describes the existing geological setting within the Project Site including topography, slopes, groundwater depth and soils.

EXISTING ENVIRONMENT

GEOLOGY

The Project Site is located within the Manhattan Prong in the New England Upland Physiographic Province. The Project Site is at the southeast edge of the province, which extends northwest through Manhattan and the Bronx and south through the western portion of Staten Island. In New York City, the Manhattan Prong is surrounded by the Atlantic Coastal Plain of Long Island to the east and the Triassic Lowlands in the Piedmont Physiographic Province to the south and west across the Hudson River.

The bedrock in New York City consists of a sequence of dense and stable crystalline rocks consisting of schist, gneiss, and marble that outcrop mainly in Manhattan and the Bronx. These rocks are overlaid in Queens by unconsolidated Cretaceous deposits and unconsolidated Pleistocene glacial and scattered postglacial material. Bedrock within the Project area is the Ravenswood Gneiss of the metamorphosed clastic and volcanic sequence just east of Cameron's Line. The bedrock surface varies significantly across the Project Site with high elevation at eastern site limits and lower elevation typically along the western limit. The depth to bedrock in the area of the Project Site is estimated to typically range from approximately 10 to 30 ft. below ground surface. Based on prior site investigations, bedrock encountered beneath the Project Site is the Ravenswood Gneiss, a biotitehornblend – quartz - plagioclase gneiss.

The surface topography of the Project Site is relatively flat with a gentle slope from east to west across the Site. Surface elevations range from approximately 9 feet to approximately 20 feet referenced to NAVD88. Lower elevations are along the western edge of the Site boundary, and adjacent to the East River. Surface water runoff is generally from east to west towards the East River except where obstructed by the generating station buildings and appurtenant structures. In areas with vegetation or stone cover, some surface water is able to percolate into the ground.

SOILS

The Ravenswood Generating Station property is generally covered with buildings or other structures, pavement, or gravel. Minimal vegetated areas are present.

As shown in **Figure 11**, soils mapping from the Natural Resource Conservation Service (NRCS) Web Soil Survey indicates that all on-site soils consist of Urban land, till substratum (UtA, 0 to 3% slopes). The parent material of Urban Land is asphalt over human-transported material. Urban land is not provided a hydric soil rating by the NRCS. Urban land has a very high runoff potential, and the depth to a restrictive feature is generally 0 inches (to a manufactured layer).

Urban land also has a very low saturated hydraulic conductivity (Ksat) when wet. Ksat refers to the ease with which pores in a saturated soil transmit water, and expressed in units of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems. The NRCS indicates that the Ksat value for Urban land at 0 inches per hour.

The general soil profile at the Station consists of historic fill underlain by a fine to medium, brown to gray sand with various amounts of silt and gravel extending to the top of bedrock. A layer of silt and clayey silt is also present above bedrock at some locations in the northern portion of the facility property. The unconsolidated deposits appear to range in thickness from approximately 5 to 17 feet along the eastern site boundary, to as much as 35 to 50 feet along the western boundary adjacent to the East River.

Surficial soils at the Project Site consist of historic fill material, ranging in thickness from 2 to 29 feet below cover materials (primarily asphalt, concrete or crushed stone) The historic fill material consists of a heterogeneous mixture of a low plasticity silt, sandy silt, and sand with varying amounts of boulders, cobbles, concrete rubble, brick, wood, glass, cinders, and metal debris. The historic fill generally extends to the top of bedrock, except on the west side of the secondary containment structure for existing Unit 40 fuel oil tank, where native grey to black silts with high organic content were observed at the base of the fill material.

HYDROGEOLOGY

Groundwater contours across the Project Site are shown in **Figure 12**. Groundwater beneath the Project Site is classified by NYSDEC as saline groundwater (GSA). Best usages of GSA as a source of potable mineral waters, or conversion to fresh potable waters, or as raw material for the manufacture of sodium chloride or its derivatives or similar products.

CONTAMINATED MATERIAL

The Ravenswood Generating Station has been in industrial use for the production of electricity for over 50 years. Prior to that, Sanborn fire insurance mapping indicates that the Project Site was formerly a glass bottling factory from approximately 1915 to 1947, and in 1947 the factory was converted to a food processing plant. South of the Project Site, the area in the northern portion of the Ravenswood Generating Station (i.e., the area encompassing existing Units 10, 20, 30 and 40) was previously a Manufactured Gas Plant (MGP), dating back to the late 1890s. In the late 1950s, most of the MGP facility structures were demolished and the current Station buildings and equipment were constructed by the early 1960s.

Historic use of the Ravenswood Generating Station property as a MGP has resulted in the presence of MGP residuals and related contaminants, such as the chemicals benzene, toluene, ethylbenzene and xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs) and cyanide at the Station property. Based on available data, the portion of the Station containing MGP residuals is located in the southwest corner of the Project Site and will not be disturbed by the proposed installation of the battery storage facility. However, petroleum constituents, have also been detected in the western portion of the Project Site. These petroleum constituents are primarily associated with petroleum product spills which occurred prior to 2000. In addition, some petroleum constituents are attributable to a more recent petroleum product release that occurred in 2010 just north of the Worthington 3 structure as a result of an equipment failure (NYSDEC Spill No. 0912294).

In response to these petroleum products releases, remedial activities at the Station property have been occurring in accordance with work plans approved by the NYSDEC, as summarized below.

A set of 71 monitoring wells at the Ravenswood Generating Station and within the Project Site are currently monitored for the presence of non-aqueous phase liquids (NAPL). Well locations are shown in **Figure 12**. Product and water level measurements are performed on each of these

wells during every monitoring event. Light NAPL (LNAPL) and Dense NAPL (DNAPL) are removed from a subset of the 71 monitoring wells. LNAPL and DNAPL wastes are transferred to temporary onsite storage containers pending transport and disposal at an appropriately licensed facility.

DNAPL monitoring wells will not be disturbed during either construction or operation of the Project. However, as indicated on **Figure 12**, installation of the proposed battery storage facility will require relocation of a number of the LNAPL monitoring wells. Accordingly, a revised remediation work plan for well relocation will be developed by Ravenswood Development and submitted to the NYSDEC for review and approval prior to construction. The revised work plan will ensure that remedial activities continue as required.

ASSESSMENT OF POTENTIAL IMPACTS

The geotechnical conditions at the Project Site will have a direct bearing on the foundation requirements for the Project. A geotechnical investigation of the Project Site will be the responsibility of the engineering and construction contractor for the Project and will be used to determine specific foundation requirements.

GRADING AND DRAINAGE

Significant re-grading of the site to accommodate the Project is not anticipated. However, fill will be brought in to raise the buildings above the 100-year floodplains as shown on the Site Plan Drawings in **Appendix B**. Further, excavation is expected for the removal of existing structures, equipment and buried pipelines. In addition, based on preliminary facility design, limited excavation will also be required for the installation of new buried electrical conduits and the proposed subsurface stormwater piping system. Extensive excavation for building or equipment foundations is not anticipated at this time.

Following construction, the Project Site will continue to drain from east to west and discharge into the East River. As shown on the Project's preliminary Grading and Drainage Plan (Sheet C3.01) in **Appendix B**, stormwater runoff from the Facility will be collected in a new subsurface stormwater collection system. The new subsurface collection system will be tied into the existing stormwater collection system near the bulkhead on the western side of the Project Site and utilize the existing stormwater outfalls that discharge into the East River. This will require a modification to the Ravenswood Generating Station SPDES Permit (Permit No. NY0005193) to reflect the discharge of stormwater from the Project area.

STORMWATER MANAGEMENT/DESIGN AND COMPLIANCE

During demolition of existing structures and construction of the battery storage facility, both structural and non-structural best management practices (BMPs) will be used to minimize erosion and sedimentation. Since construction activities will disturb greater than one (1) acre, the Project will require coverage under the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity (Permit No. GP-15-002).

Preliminary engineering drawings depicting the Project Site's Erosion and Sediment Control Plan are included in **Appendix B** together with Erosion and Sediment Control Plan Details. In accordance with general permit conditions, the Project will also develop a Stormwater Pollution Prevention Plan (SWPPP) prior to construction.

All erosion and sediment control measures and best management practices used during construction will comply with the specifications contained in the New York Standards and Specifications for Erosion and Sediment Control, November 2016.

The Project's post construction stormwater management system was designed in accordance with Chapter 9 of the New York State Stormwater Management Design Manual for redeveloped sites. Preliminary engineering drawings for the new subsurface stormwater collection system are included in **Appendix B**.

CONTAMINATED MATERIAL

As noted above, a revised remediation work plan will be developed by Ravenswood Development, LLC and submitted to the NYSDEC for review and approval prior to construction. The revised work plan will ensure that remedial activities continue as required.

As indicated above, limited excavation is expected to be required. Contaminated materials encountered in excavations will be characterized for proper off-site disposal at an appropriately licensed facility or, where feasible, reused on-site with appropriate engineering and institutional controls.

Demolition and construction activities will be performed in accordance with the demolition and construction management plan to be developed by Ravenswood Development, LLC and in accordance with the demolition and building permits to be issued by the NYC Department of Buildings (NYCDOB). Most materials generated during demolition will be recycled. Solid waste materials and regulated wastes (e.g., asbestos containing materials, oils, lubricants, fluorescent fixtures, etc.) will be managed in accordance with EPA, NYSDEC, NYSDOT and NYCDOB requirements.

Prior to demolition and construction, a Project-specific Health and Safety Plan (HASP) will be developed to address worker safety in light of prior spills and on-going site remediation activities.

I. WATER RESOURCES

This section includes a discussion of the existing terrestrial natural resources and potential impacts resulting from the construction and operation of the Project. Resources evaluated within and surrounding the Project Site include vegetation, wildlife, and endangered and/or threatened species.

EXISTING CONDITIONS

SURFACE WATER RESOURCES

The East River is a salt water tidal estuary, and serves as the western boundary of the Project Site. The East River connects the Upper New York Bay and the Long Island Sound. The NYSDEC water quality classification of the East River is Classification I (marine waters), which indicates the best usage is for secondary contact recreation and fishing.

WETLANDS

Figure 13 depicts the locations of mapped wetlands present within the vicinity of the Project Site based on available resource mapping.

There are no federal-jurisdictional wetlands identified on the Project Site mapped by the U.S. Fish and Wildlife Service (USWFS). The East River, located to the west of the Project is mapped as an Estuarine and Marine Deepwater habitat (E1UBL).

There are no NYSDEC-regulated freshwater wetlands within the vicinity of the Project Site. The East River, located to the west of the Project Site is mapped as a NYSDEC-Tidal Wetland, and is classified as Littoral Zone (LZ). The LZ is defined as the tidal wetland zone that includes all lands under tidal waters which are not included in any other category (ECL Article 25).

FLOODPLAINS

The NYC Department of City Planning adopted a zoning text amendment to encourage flood-resilient building construction throughout designated flood zones. The amendment codified use of the Preliminary FEMA Flood Insurance Rate Maps (PFIRM) developed following Hurricane Sandy (FIRM Map No. 3604970089G dated December 5, 2013). In accordance with zoning and the NYC Building Code requirements, the PFIRM represents the basis for flood mitigation planning for this Project. Appendix G of the NYC Building Code, which addresses flood resistant construction requirements, also requires that structures located within the floodplain be designed in accordance with the flood mitigation standards contained in ASCE 24 - Flood Resistant Design and Construction. Table 1-1 of Appendix G indicates that the structural occupancy category for the battery storage facility is III. (Note that Structural Occupancy Category III is equivalent to Flood Design Class 3 listed in ASCE 24.).

The PFIRM for the Ravenswood Generating Station is shown in **Figure 14**. **Figure 14** indicates that portions of the proposed development area for the energy storage facility are located within the 100-year and 500-year floodplains of the East River. The preliminary 100-year floodplain elevation at the Ravenswood Generating Station is 12 feet referenced to NAVD88 (Zone AE-12 in the East River). The 500-year floodplain elevation is 14 feet referenced to NAVD88 from review of transect Q-56 contained in the Preliminary Flood Insurance Study Report dated December 5, 2013.

The Ravenswood Generating Station site is not located within a designated zone of moderate wave action on the PFIRM. As such, it is not located within a "Coastal A Zone."

ASSESSMENT OF POTENTIAL IMPACTS

SURFACE WATER RESOURCES

The Project will not result in adverse impacts to the East River. All activities will occur behind the existing bulkhead that runs along the East River. Further, appropriate erosion and sediment controls will be installed during construction in accordance with the Soil Erosion and Sediment Control Plan that will be developed to protect surrounding natural resources during construction activities. During operation, the applicant will modify the facility's existing SPDES permit such that the Project's stormwater will be authorized for discharge to the East River through the Station's existing stormwater outfalls.

WETLANDS

There are no federal or state regulated wetlands within the Project Site. While the East River, located to along the western boundary of the Project Site, is mapped as a wetland resource, there will be no direct impacts to the East River during construction of the Project. All activities will

occur behind the existing bulkhead that runs along the East River. Further, appropriate erosion and sediment controls will be installed during construction in accordance with the Soil Erosion and Sediment Control Plan that will be developed to protect surrounding natural resources during construction activities. During operations, the Project's stormwater will be managed through the Station's existing system.

FLOODPLAINS

Non-residential structures classified as Structural Occupancy Class III in the NYC Building Code are required to have a minimum lowest floor elevation 1 foot above the base flood elevation (BFE), which is the design flood elevation (DFE) in Table 2-1 of Appendix G (i.e., DFE = BFE + 1 foot). In addition, flood damage resistant materials must be used below the DFE and a means for access and egress from any building must be at an elevation above the DFE. Finally, the minimum elevation for utilities and equipment within a non-residential structure is the DFE. All structures and equipment installed as part of this Project will conform with Appendix G of the NYC Building Code relative to flood resistant construction.

As reflected on the Project Drawings in **Appendix B**, portions of the Project will be located within the 100- and 500-year floodplains, based on the Preliminary FEMA mapping. Those structures, located within the flood hazard area will have a design flood elevation of a minimum of two and a half feet above the base flood elevation in accordance with applicable codes.

J. TERRESTRIAL RESOURCES

This section includes a discussion of the existing terrestrial natural resources and potential impacts resulting from the construction and operation of the Project. Resources evaluated within and surrounding the Project Site include vegetation, wetlands, wildlife, and endangered and/or threatened species.

Information regarding ecologically significant areas and Federal or State listed endangered and/or threatened species occurring within the Project Site or vicinity was requested from the U.S. Fish and Wildlife Service (USFWS) and the NYSDEC Natural Heritage Program via online resources and/or letter requests. The USFWS maintains a database of Federal listed endangered and/or threatened animals and plants, as well as critical habitats. The NYSDEC Natural Heritage Program maintains a database of State listed rare animals and plants, significant natural communities, and other significant habitats that exist in New York State. Copies of agency correspondence are provided in **Appendix C**.

EXISTING CONDITIONS

The Project will be sited within the existing Ravenswood Generating Station, which has predominantly flat topography. With the exception of a few landscape trees located within the proposed area of development, there is little to no vegetation within the Project Site.

The diversity of wildlife expected to inhabit the Project Site is expected to be low given the industrial nature of the existing Station and the existing brick wall around the perimeter of the Station (except adjacent to the East River seawall). Avian species are expected to be the predominant species currently utilizing the Project Site, with the occasional small foraging mammal species.

ENDANGERED, THREATENED AND SPECIES OF SPECIAL CONCERN

Federal Species

Information regarding federally protected species was obtained via the USFWS' Information, Planning, and Conservation (IPAC) system in December 2018. The IPAC species list generated for the Project noted a total of four threatened, endangered, or candidate species (see **Appendix C**). As noted, this listing represents species that, if present, may be affected by the Project as well as species that may occur in another geographic area within the vicinity of the Project. The USFWS review did not identify critical habitats for any of the species identified.

These four species are identified in **Table 15** and described in further detail below.

Table 15
USFWS-Listed Species that May Occur within the Vicinity of the Project

Species (Common Name)	Species (Scientific Name)	Federal Status
Birds		
Piping Plover	*Charadrius melodus*	Threatened
Rufa Red Knot	*Calidris canutus rufa*	Threatened
Roseate Tern	*Sterna dougallii dougallii*	Endangered
Flowering Plants		
Seabeach Amaranth	*Amaranthus pumilus*	Threatened

Piping Plover (Charadrius melodus)

The Piping Plover became federally listed as Threatened in the 1985 in Queens County due to habitat disturbance and destruction and the disturbance of nesting adults and chicks. The bird is typically 18 centimeters (cm) in length with a pale brown body above and lighter below, a black band across its forehead, an orange bill with a black tip, orange legs, and a white rump. Piping plovers occupy their breeding grounds from late March to August. Nest sites can be found on sandy beaches along the ocean and inlands lakes; bare areas on dredge and natural alluvial islands in rivers; gravel pits along rivers; and salt encrusted base areas of sand, gravel, or pebbly mud on interior alkali lakes and ponds (USFWS, 1985). Because there are no sandy or gravel beaches on the Project Site, piping plover are not expected to occur within the Project area.

Rufa Red Knot (Calidris canutus rufa)

The red knot became federally listed as Threatened in 2015 due to loss of breeding and non-breeding habitat, likely effects related to disruption of natural predator cycles on the breeding grounds, reduced prey availability throughout the non-breeding range and increasing frequency and severity of asynchronies in the timing of the birds' annual migratory cycle relative to favorable food and weather conditions. The bird is approximately 25-28 cm in length and has different coloring depending on the time of year. The rufa red knot is a migratory shorebird that breeds in the Canadian Arctic, winters in parts of the U.S., Caribbean, and South America, and primarily uses well-known spring and fall stop-over areas on the Atlantic coast of the U.S. (USFWS, 2014). Red knots are shorebirds, and can be found on sandy beaches, shorelines, and tidal flats when not nesting in Arctic tundra. Red knots primarily eat mollusks, marine worms, and crustaceans that live in the mud of intertidal zones, as well as vegetation and seeds. Because there are no intertidal flat or beach areas on the property, which has a bulkhead adjacent to the East River, it is not expected that the rufa red knot will occur within the Project Site.

Roseate Tern (Sterna dougallii dougallii)

The roseate tern was federally listed as Endangered in the Northeast Region in 1987. The Endangered listing was due to human activity reducing the number of suitable nesting islands, competition from large gulls, and predation (USFWS, 1987). The roseate tern is approximately 40 cm in length with light grey wings and back, a black cap, and forked tail. Its habitat includes salt bays and estuaries, and the tern nests on sandy or rocky islands close to shallow water for feeding. Because there are no sandy or rocky beaches or island areas on the property, which has a bulkhead adjacent to the East River, it is not expected that the roseate tern will occur on site.

Seabeach Amaranth (Amaranthus pumilus)

The seabeach amaranth became federally listed as Threatened in 1993 due to beach stabilization structures (seawalls, rip-rap, etc.), beach erosion and tidal inundation, beach grooming, herbivory by insects and feral animals, and off-road-vehicles. The seabeach amaranth is endemic to Atlantic coastal plain beaches, particularly on barrier island beaches with a primary habitat consisting of overwash flats at accreting ends of islands and lower foredunes and upper strands of non-eroding beaches (USFWS, 1993). As the amaranth requires sandy habitat, and no beaches or sandy areas are found on the proposed Project Site, it is not expected that the seabeach amaranth will occur on site.

State Species

Information from the New York Natural Heritage program (NYNHP) was also requested in order to obtain a listing of rare or state-listed animals or plants, or significant natural communities in the vicinity. In a letter dated December 3, 2018, the NYNHP indicated there are no records of rare or state-listed animals or plants, or significant communities at the Project Site or its immediate vicinity (see **Appendix C**). There are records of a Peregrine falcon (*Falco peregrines*) nest within 0.5 miles of the Project Site.

ASSESSMENT OF POTENTIAL IMPACTS

The Project's location within an existing generating station reduces potential impacts to terrestrial resources such as vegetation communities, wildlife and threatened and/or endangered species.

There is no suitable habitat for the species identified by the USFWS and it is not expected that any of these species is present on the Project Site. The Project Site does not contain any natural sandy or gravel beaches, intertidal areas or dunes. The area along the East River is an existing bulkhead. As such, the Project is not anticipated to result in adverse impacts to federally-listed species.

The Project will not result in adverse impacts to the Peregrine falcon. As the documented nest is not within the Project Site itself, the Project will not result in adverse impacts to the nest or to state-listed species.

Chapter 4: Cumulative Impacts

This Chapter addresses the potential cumulative effects associated with the construction and operation of the Project. Cumulative effects or impacts result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions.

A. LAND USE AND ZONING

Potential effects related to land use include direct effects associated with a change in land use at the Project Site and at the sites of any planned development within the area. As indicated in Section 3.2.1, development of the Project will result in the redevelopment of a portion of the existing Ravenswood Generating Station in a primarily industrial and commercial area of Long Island City. Furthermore, since with the proposed energy storage facility is to be developed at a site currently occupied by electric generating facilities, the Project can be viewed as a continuance of the development site's existing land use, which has co-existed with the existing, adjacent and nearby land uses for over 50 years. Accordingly, the Project will not change or impact surrounding land uses outside the Station and the Project will have no cumulative impact on land uses.

B. COMMUNITY FACILITIES

Significant cumulative impacts are not anticipated as a result of the Project and any planned development within the area. As a clean energy source with no emissions, schools and houses of worship located within the Project study area will be unaffected by potential air emissions. Additionally, noise from the proposed facility will comply with the City standards. Further, once operational, the Project will be utilize personnel from the Ravenswood Generating Station and will not result in the placement of a significant number of additional students in local schools or impact the ability of local religious institutions to serve their community.

Significant cumulative impacts regarding police protection, fire, and emergency medical services are also not anticipated. In terms of fire prevention, the Project will be designed to provide a high level of safety and to meet all NFPA, state and local requirements. Project review by the FDNY will be sought in accordance with construction permitting requirements. Further, the Project will prepare an Emergency Response Plan and a comprehensive security plan to support operational activities at the site.

C. CULTURAL RESOURCES

Cumulative effects relative to cultural resources within the Project area will not occur. Due to its location within the previously disturbed Ravenswood Generating Station, the Project will have no cumulative impact on archaeological or cultural resources.

D. VISUAL RESOURCES

The Project will be located within the existing Ravenswood Generating Station, which is surrounded by an existing brick wall blocking street level views. Due to the location of the Project at an existing electric generating station, the Project will have an incremental impact on views from Roosevelt Island and the East River, but is not anticipated to be out of character with views of the overall Ravenswood Generating Station facility structures. View of the Project will be compatible with the existing Station components, including the Station's stacks at: 499 ft. (Unit 10), 499 ft. (Unit 20), 499 ft. (Unit 30), and 400-ft. (Unit 40) in height. Accordingly, the Project will not have a cumulative impact on visual resources.

E. SOCIOECONOMICS

The Project will generate positive economic benefits to the surrounding communities, including temporary construction jobs, local spending in the area on supplies and materials for construction, and spending by construction workers in the area on food, lodging, and other services.

F. TRAFFIC AND TRANSPORTATION

There will be no cumulative impact to local traffic or public transportation in the surrounding area. An appropriate on-Site parking plan will be developed adjacent to the Project Site within the Ravenswood Generating Station to accommodate the construction workforce.

The operation of the Facility will also not result in impacts to increases in traffic in the area as the Facility will be able to utilize existing personel at the Ravenswood Generating Station.

G. NOISE

The analysis and impact assessment presented in Chapter 3 concludes that noise levels from the Project are predicted to fully comply with the City standards, and result in changes in noise levels that will be well below NYSDEC considerations for noise impacts. The changes in noise levels at receptor locations near the Project Site will be considered barely perceptible and will not have a long-term cumulative impact on the surrounding area.

H. GEOLOGY AND SOILS

The Project will not impact geology or soils outside the Station. Therefore, the Project will not have a cumulative impact on geology or soil resources.

As discussed in Chapter 3, a revised remediation work plan for the relocation of certain monitoring wells will be developed by Ravenswood Development and submitted to the NYSDEC for review and approval prior to construction. The revised work plan will ensure that remedial site concerns can continue as required.

I. WATER RESOURCES

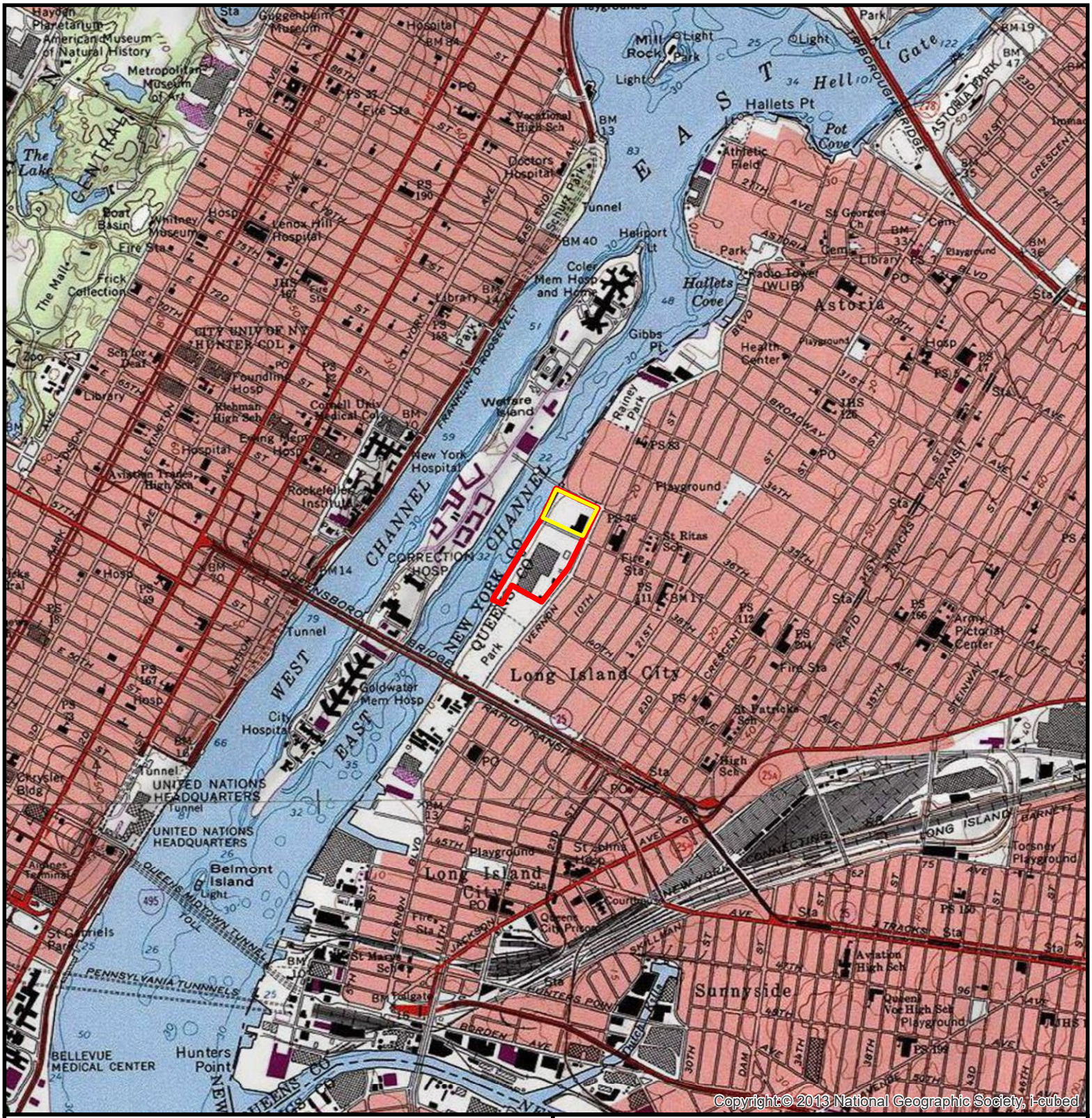
Due to the Project's location within the existing Ravenswood Generating Station which is void of water resources, the Project will not change or adversely impact areas outside the Station. Therefore, the Project will not have a cumulative impact on surface waters or mapped wetlands.

The Facility will be designed to comply with applicable flood-proofing requirements and standards and development of the Project will not result in flooding of off-site properties.

J. TERRESTRIAL RESOURCES

Due to the Project's location within the existing Ravenswood Generating Station, there is limited vegetation which does not contain habitat for protected species. Additionally, the Project will not change or impact areas of habitat outside the Station. Therefore, the Project will not have a cumulative impact on natural resources.

Figures



Legend

- Station Boundary
- Proposed Area of Development

References: Parcel data (dated Jan. 27, 2017) obtained from NYC OpenData Department of Finance Digital Tax Map.

N

0 2,000 4,000 Feet

1 inch = 2,000 feet

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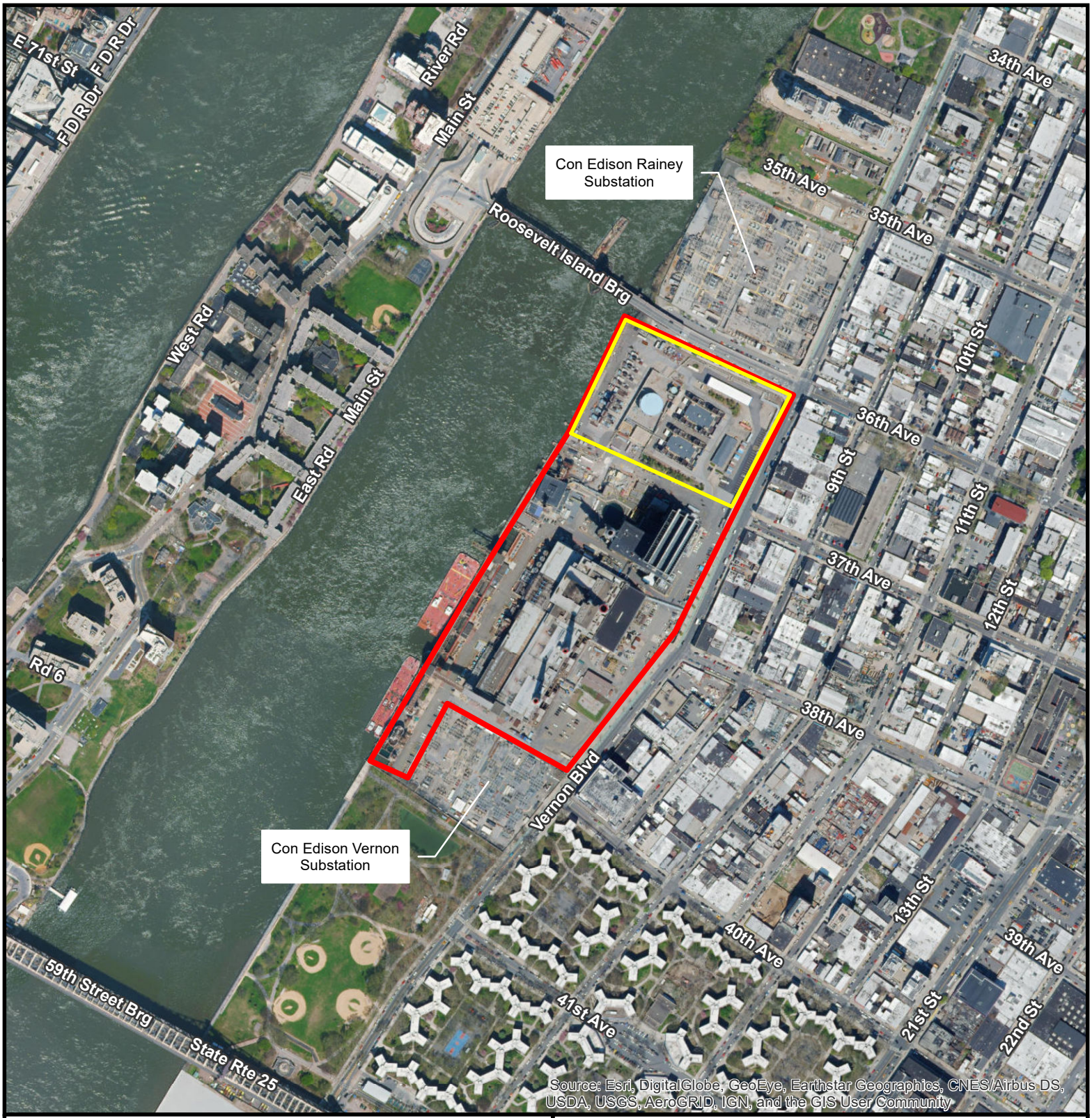
USGS SITE LOCATION MAP

RAVENSWOOD DEVELOPMENT, LLC
RAVENSWOOD ENERGY STORAGE PROJECT
LONG ISLAND CITY, QUEENS, NEW YORK

FIGURE 1	JANUARY 2019



Legend

- Proposed Area of Development
- Station Boundary

References: Parcel data (dated Jan. 27, 2017) obtained from NYC OpenData Department of Finance Digital Tax Map.

N

0 500 1,000 Feet

1 inch = 500 feet

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SITE LOCATION AERIAL

RAVENSWOOD DEVELOPMENT, LLC
RAVENSWOOD ENERGY STORAGE PROJECT
LONG ISLAND CITY, QUEENS, NEW YORK

FIGURE 2	JANUARY 2019

Legend

- Station Boundary
- Proposed Area of Development
- Quarter Mile Buffer
- Commercial & Office Buildings
- Industrial & Manufacturing
- Mixed Residential & Commercial Buildings
- Residential
- Open Space & Outdoor Recreation
- Parking Facilities
- Public Facilities & Institutions
- Transportation & Utility
- Vacant Land

N

1" = 1,500'

References: Landuse data obtained from the NYC Planning Open Data webpage. MapPLUTO 18v1.1.

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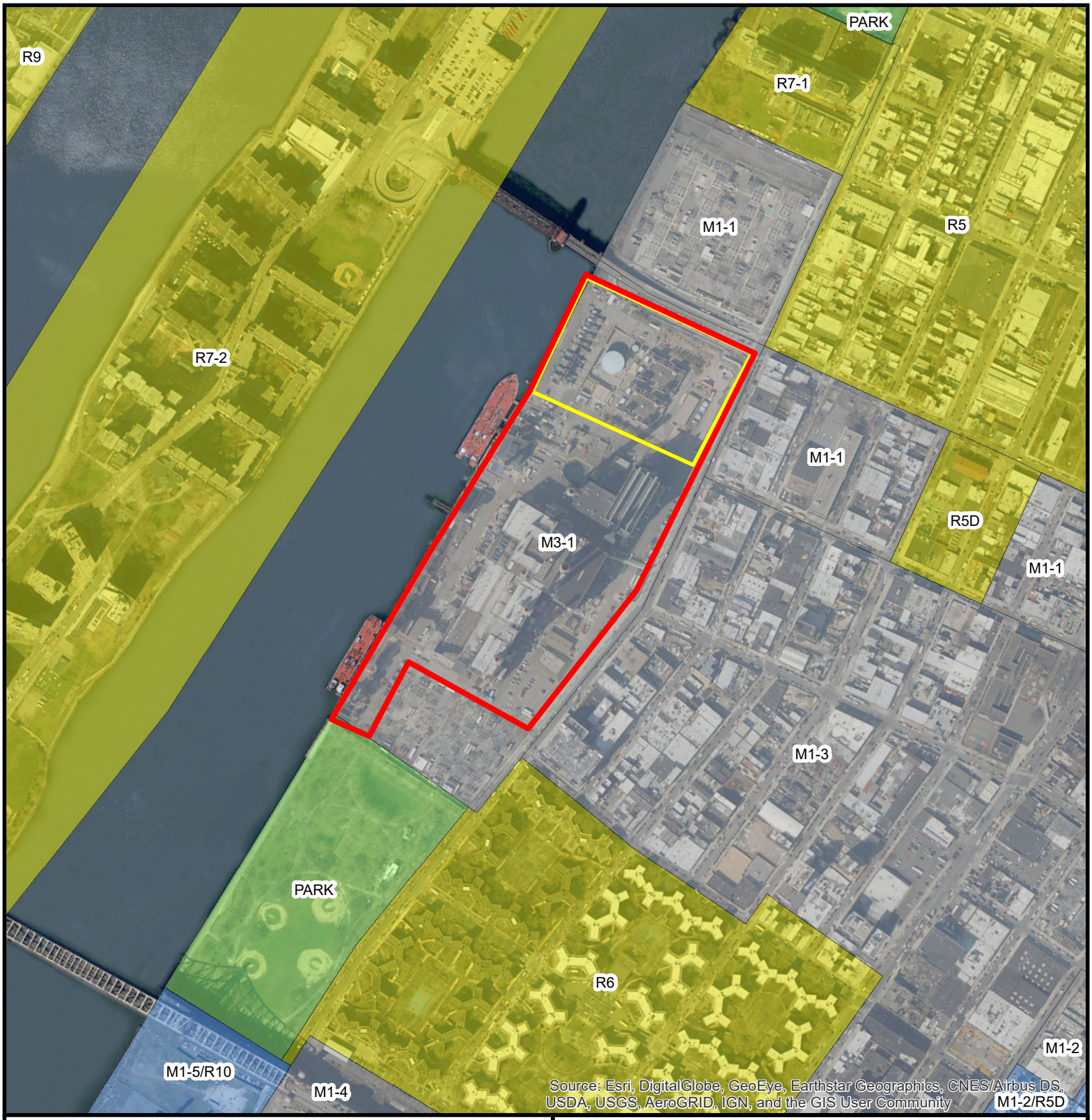
LAND USE MAP

RAVENSWOOD DEVELOPMENT, LLC
RAVENSWOOD ENERGY STORAGE PROJECT
LONG ISLAND CITY, QUEENS, NEW YORK

FIGURE 3	JANUARY 2019



Legend

- Station Boundary
- Proposed Area of Development
- Residential
- Park
- Manufacturing/ Residential
- Manufacturing

References: Parcel data (dated Jan. 27, 2017) obtained from NYC OpenData Department of Finance Digital Tax Map. Zoning data (dated 11/2018) obtained from NYC Planning Open Data

N

0 500 1,000 Feet

1 inch = 500 feet

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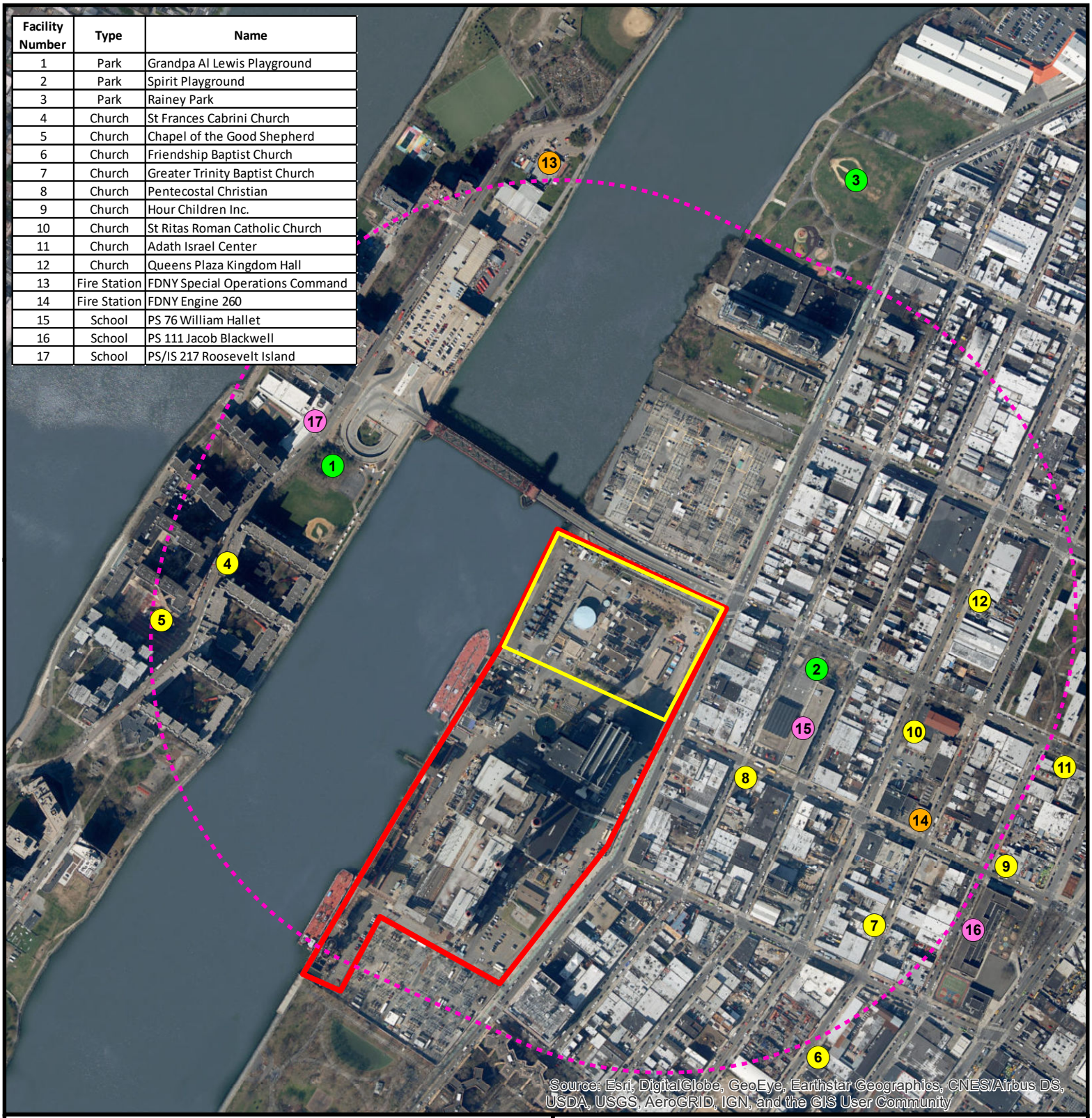
ZONING MAP

RAVENSWOOD DEVELOPMENT, LLC
RAVENSWOOD ENERGY STORAGE PROJECT
LONG ISLAND CITY, QUEENS, NEW YORK

FIGURE 4	JANUARY 2019

Facility Number	Type	Name
1	Park	Grandpa Al Lewis Playground
2	Park	Spirit Playground
3	Park	Rainey Park
4	Church	St Frances Cabrini Church
5	Church	Chapel of the Good Shepherd
6	Church	Friendship Baptist Church
7	Church	Greater Trinity Baptist Church
8	Church	Pentecostal Christian
9	Church	Hour Children Inc.
10	Church	St Ritas Roman Catholic Church
11	Church	Adath Israel Center
12	Church	Queens Plaza Kingdom Hall
13	Fire Station	FDNY Special Operations Command
14	Fire Station	FDNY Engine 260
15	School	PS 76 William Hallet
16	School	PS 111 Jacob Blackwell
17	School	PS/IS 217 Roosevelt Island



Legend

- Park
- Church
- Fire
- School
- Station Boundary
- Proposed Area of Development
- 1 Mile Buffer

References: Parcel data (dated Jan. 27, 2017) obtained from NYC OpenData Department of Finance Digital Tax Map. Public school data obtained fom the NYS GIS Clearing House.

N

0 500 1,000 Feet

1 inch = 500 feet

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COMMUNITY FACILITIES MAP

RAVENSWOOD DEVELOPMENT, LLC
RAVENSWOOD ENERGY STORAGE PROJECT
LONG ISLAND CITY, QUEENS, NEW YORK

FIGURE 5 | JANUARY 2019

Legend

- NRHP Listed Buidings
- Quarter Mile Buffer
- Proposed Area of Development
- Station Boundary
- Previously Recorded Survey
- Heritage Areas
- NRHP Listed District

References: Parcel data (dated Jan. 27, 2017) obtained from NYC OpenData Department of Finance Digital Tax Map. Hitoric Data obtained from SHPO and the NRHP.

N

0 500 1,000 Feet

1 inch = 500 feet

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CULTURAL RESOURCE MAP

RAVENSWOOD DEVELOPMENT, LLC
RAVENSWOOD ENERGY STORAGE PROJECT
LONG ISLAND CITY, QUEENS, NEW YORK

FIGURE 6	JANUARY 2019

Legend

- Parks
- NRHP Listed Buidings
- Quarter Mile Buffer
- Proposed Area of Development
- Station Boundary
- Heritage

References: Parcel data (dated Jan. 27, 2017) obtained from NYC OpenData Department of Finance Digital Tax Map. Public school data obtained fom the NYS GIS Clearing House.

N

0 500 1,000 Feet

1 inch = 500 feet

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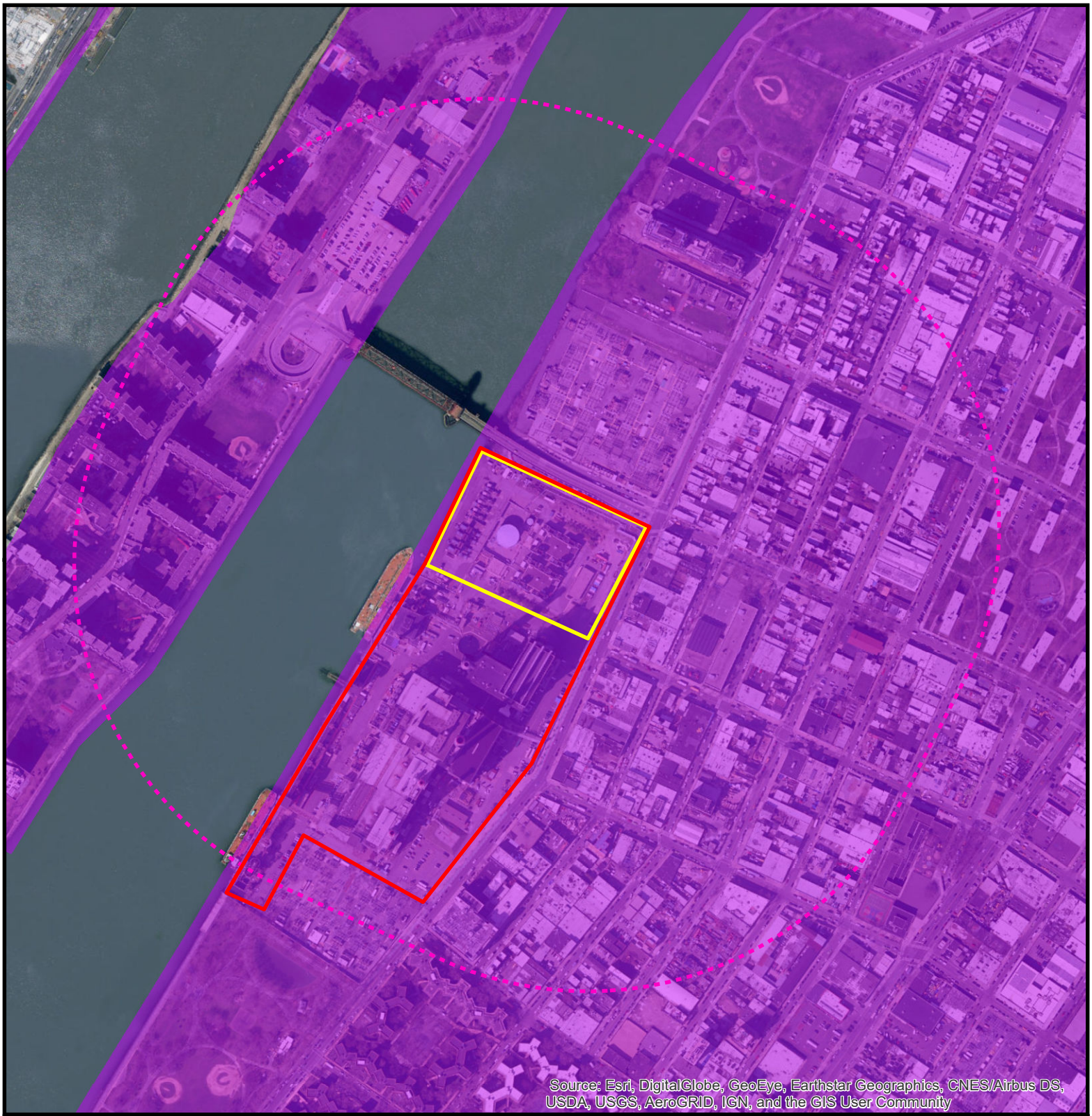
VISUAL RESOURCE MAP

RAVENSWOOD DEVELOPMENT, LLC
RAVENSWOOD ENERGY STORAGE PROJECT
LONG ISLAND CITY, QUEENS, NEW YORK

FIGURE 7	JANUARY 2019



Legend

- Station Boundary
- Proposed Area of Development
- Quarter Mile Buffer
- Potential EJ Areas

References: Parcel data (dated Jan. 27, 2017) obtained from NYC OpenData Department of Finance Digital Tax Map. EJ data obtained from the NYS GIS Clearing House.

N

0 500 1,000 Feet

1 inch = 500 feet

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POTENTIAL EJ AREAS

RAVENSWOOD DEVELOPMENT, LLC
RAVENSWOOD ENERGY STORAGE PROJECT
LONG ISLAND CITY, QUEENS, NEW YORK

FIGURE 8	JANUARY 2019

Legend

- Highways
- Primary Roads
- Station Boundary
- Proposed Area of Development

References: Parcel data (dated Jan. 27, 2017) obtained from NYC OpenData Department of Finance Digital Tax Map. Transportation network obtained from the USDA Geospatial Data Gateway.

N

0 1,000 2,000 Feet

1 inch = 1,000 feet

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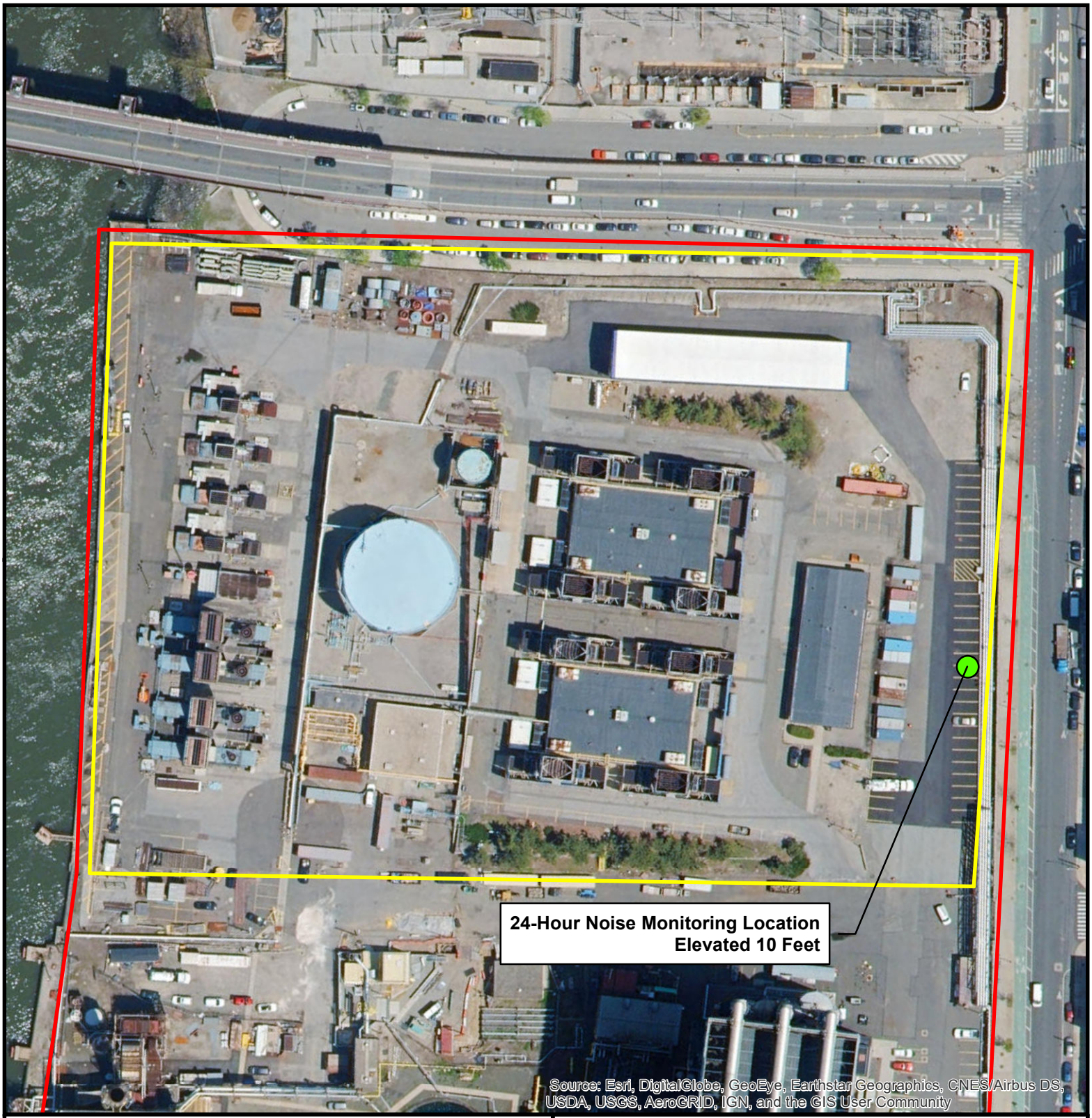
TRANSPORTATION MAP

RAVENSWOOD DEVELOPMENT, LLC
RAVENSWOOD ENERGY STORAGE PROJECT
LONG ISLAND CITY, QUEENS, NEW YORK

FIGURE 9	JANUARY 2019



Legend

- Noise Monitoring Location
- Station Boundary
- Proposed Area of Development

References: Parcel data (dated Jan. 27, 2017) obtained from NYC OpenData Department of Finance Digital Tax Map.

N

0 100 200 Feet

1 inch = 100 feet

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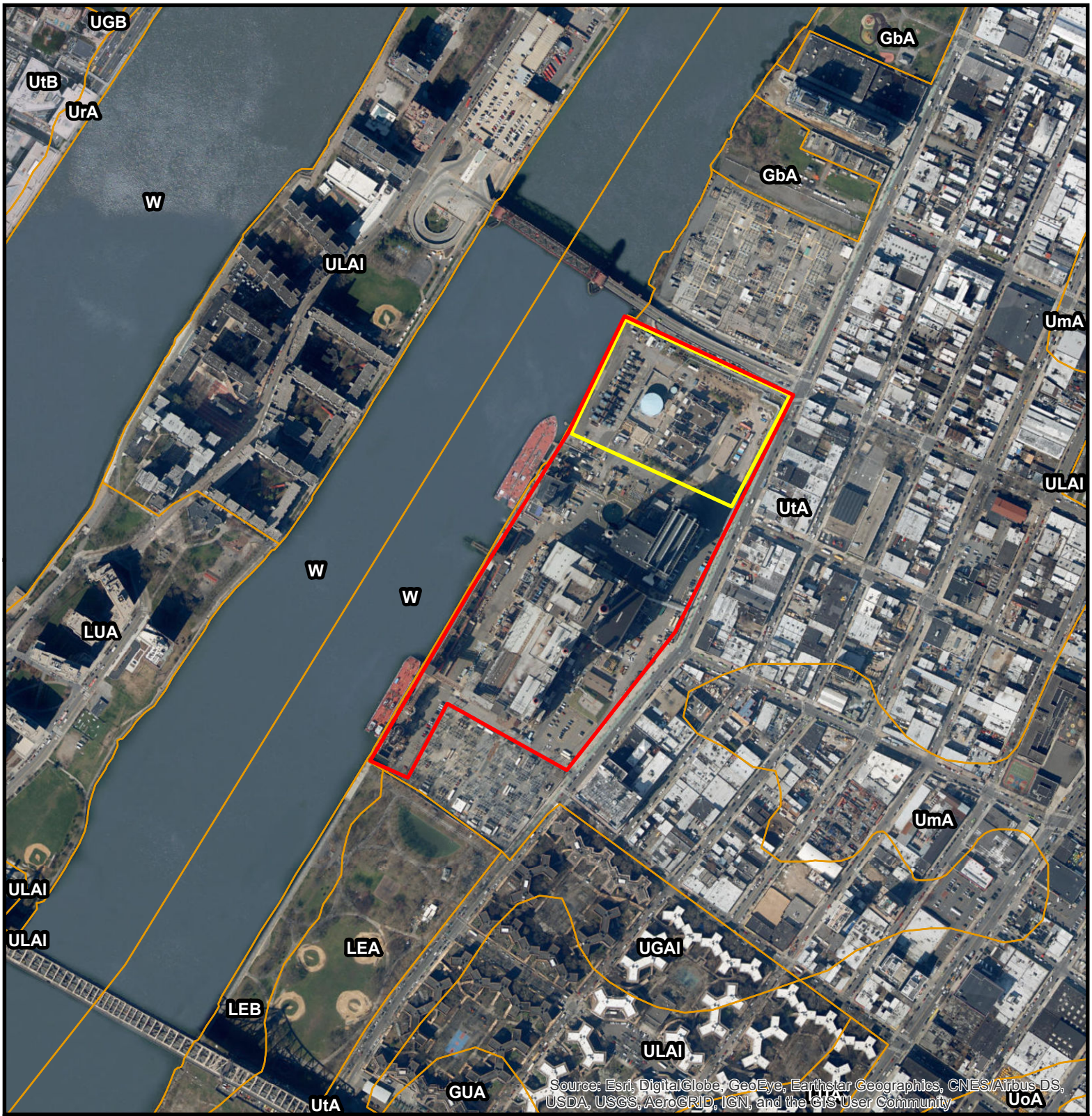
NOISE MONITORING LOCATION MAP

RAVENSWOOD DEVELOPMENT, LLC
RAVENSWOOD ENERGY STORAGE PROJECT
LONG ISLAND CITY, QUEENS, NEW YORK

FIGURE 10	JANUARY 2019



Legend

- Station Boundary
- Proposed Area of Development
- Soil Type Boundary

References: Parcel data (dated Jan. 27, 2017) obtained from NYC OpenData Department of Finance Digital Tax Map.

N

0 500 1,000 Feet

1 inch = 500 feet

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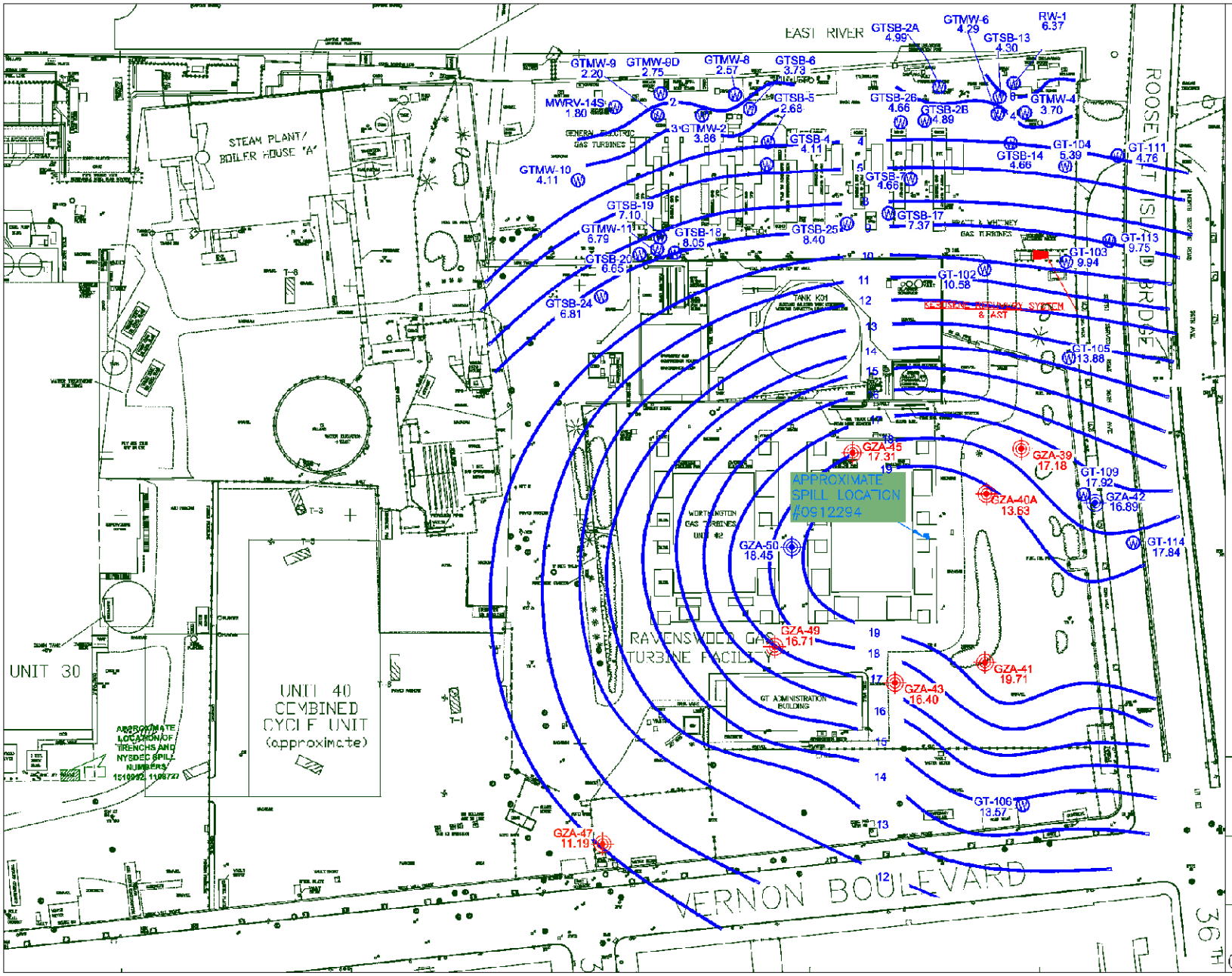
SOIL CLASSIFICATION MAP

RAVENSWOOD DEVELOPMENT, LLC
RAVENSWOOD ENERGY STORAGE PROJECT
LONG ISLAND CITY, QUEENS, NEW YORK

FIGURE 11	JANUARY 2019



LEGEND:

- RI OVERBURDEN BORING/WELL LOCATION
- RI BEDROCK BORING/WELL LOCATION
- EXISTING MONITORING WELL LOCATION
- GROUNDWATER ELEVATION

NOTES:

1. THE BASE MAP WAS DEVELOPED FROM PLANS PROVIDED BY: TRANSCANADA, ENTITLED: RAVENSWOOD GENERATING STATION AND RAVENSWOOD GAS TURBINE FACILITY PLAN MAP, ORIGINAL SCALE: 1" = 60'
2. GROUNDWATER ELEVATIONS ARE PROVIDED IN FEET MARINE AND AVIATION DATUM

Helix Ravenswood, LLC

MONTHLY NAPL MONITORING REPORT
RAVENSWOOD GENERATING STATION
LONG ISLAND CITY,
QUEENS COUNTY, NEW YORK

Figure 1
November 2018
Groundwater Contour Map

NOTES:

Figure adapted from plans provided by Transcanada.

GROUNDWATER CONTOURS

RAVENSWOOD DEVELOPMENT, LLC
RAVENSWOOD ENERGY STORAGE PROJECT
LONG ISLAND CITY, QUEENS, NEW YORK

FIGURE 12	JANUARY 2019

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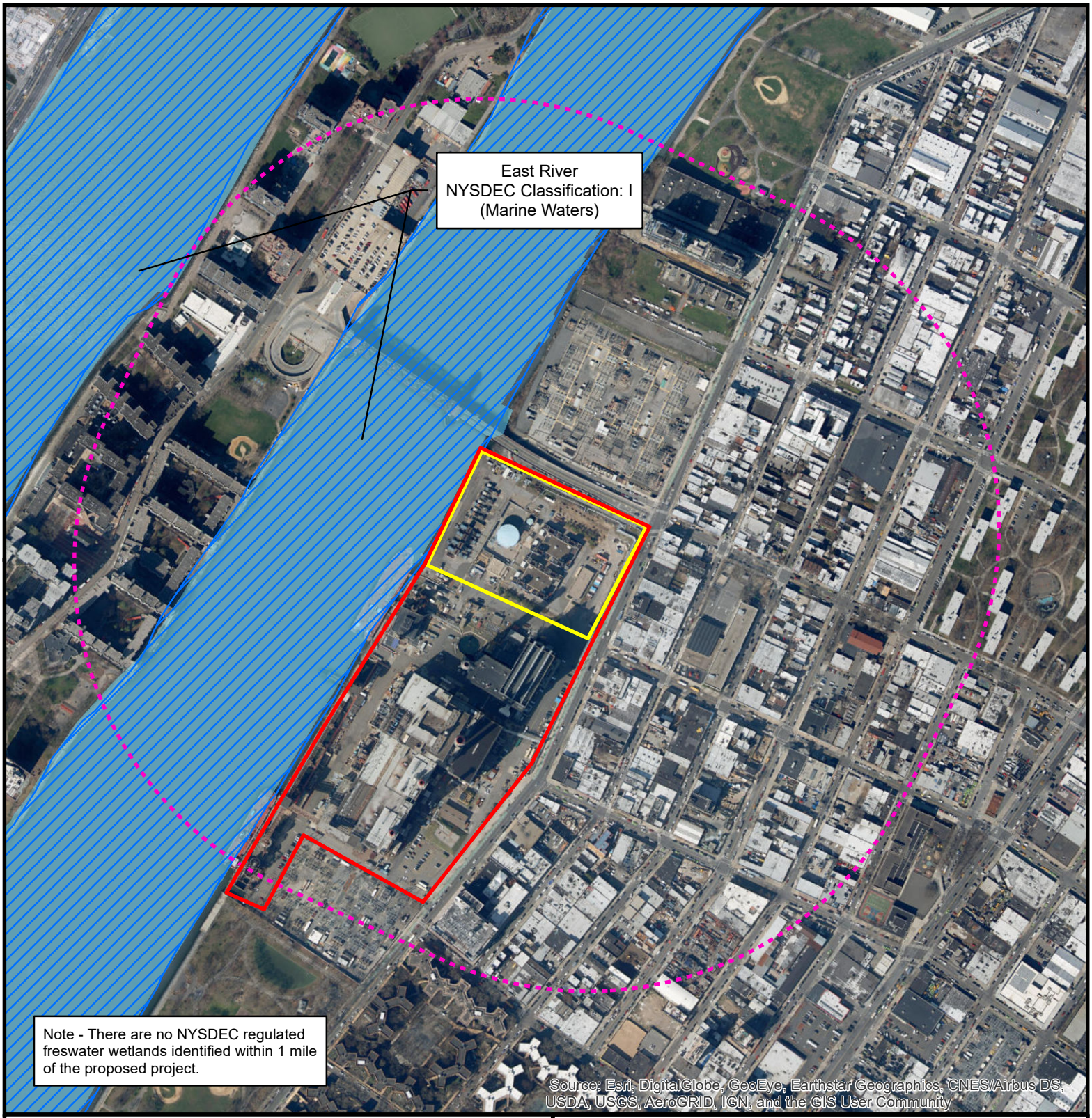

Legend

- Station Boundary
- Proposed Area of Development
- Quarter Mile Buffer
- NWI Wetlands
- NYSDEC Tidal Wetlands
- NYSDEC Freshwater Wetlands

References: Parcel data (dated Jan. 27, 2017) obtained from NYC OpenData Department of Finance Digital Tax Map. Wetland data obtained from the USFWS NWI and CUGIR.

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0 500 1,000 Feet

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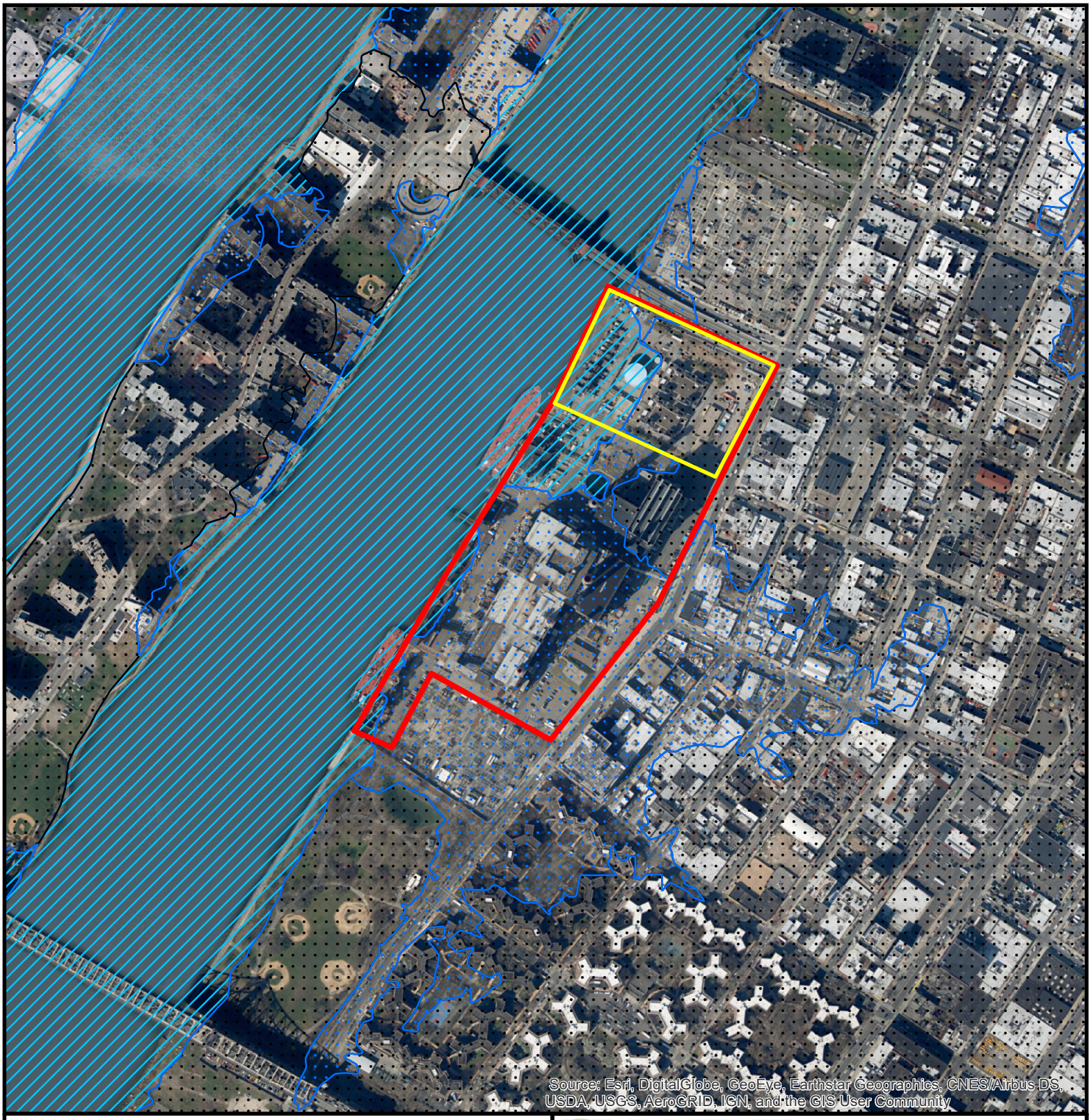
AQUATIC RESOURCES MAP

RAVENSWOOD DEVELOPMENT, LLC
RAVENSWOOD ENERGY STORAGE PROJECT
LONG ISLAND CITY, QUEENS, NEW YORK

FIGURE 13 | **JANUARY 2019**



Legend

- Proposed Area of Development
- Station Boundary
- 500 Year Floodplain
- Zone AE
- Zone X

References: Parcel data (dated Jan. 27, 2017) obtained from NYC OpenData Department of Finance Digital Tax Map. FEMA data obtained from FEMA's NFHL.

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FEMA PRELIMINARY FLOOD MAPPING

RAVENSWOOD DEVELOPMENT, LLC
RAVENSWOOD ENERGY STORAGE PROJECT
LONG ISLAND CITY, QUEENS, NEW YORK

FIGURE 14	JANUARY 2019

Appendix A

SEQRA Full Environmental Assessment Form

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Ravenswood Battery Energy Storage Project		
Project Location (describe, and attach a general location map): Northern portion of the Ravenswood Generating Station, located West of Vernon Boulevard between 36th and 37th Aves in Long Island City, Queens, NY		
Brief Description of Proposed Action (include purpose or need): Ravenswood Development, LLC is proposing to construct, own and operate a stand-alone energy storage facility on approximately 7 acres of the existing Ravenswood Generating Facility (27.4 acres total), owned by Helix Ravenswood, LLC. The facility will have a capacity of up to 316 megawatts (MW). The Project will include three battery buildings, which will be connected to outdoor battery inverters, transformers, two step-up transformers, and a new 345 kV and/or 138 kV gas-insulated substation (GIS) (to be constructed, owned, and operated by ConEd). The Project will require the demolition of 16 existing, gas-fired combustion turbines and associated equipment currently on the Project Site, of which all but two are are currently not in service. Ground disturbance is limited to foundation work and installation of underground electric cables and equipment. The Project is anticipated to be constructed in three phases with each battery building constructed in a separate phase as follows: Phase 1 - Southeast Building - up to 129 MW, Phase 2 - North Building - up to 98 MW, Phase 3 - Southwest Building - up to 89 MW. The proposed commercial operation date for the first phase of the Project is in March 2021. The proposed commercial operation dates for the second and third phases of the Project have not yet been determined.		
Name of Applicant/Sponsor: Ravenswood Development, LLC	Telephone: (636)-534-3243 E-Mail: RRomine@lspower.com	
Address: 16150 Main Circle Drive, Suite 310		
City/PO: Chesterfield	State: MO	Zip Code: 63017
Project Contact (if not same as sponsor; give name and title/role):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☐Yes ☑No		
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	See attached permit list	
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☑Yes ☐No	See attached permit list	
e. County agencies ☐Yes ☑No		
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	See attached permit list	
h. Federal agencies ☑Yes ☐No	See attached permit list	

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☑Yes ☐No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☑Yes ☐No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☑No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes ☐No

If Yes, identify the plan(s):

The Project Site is adjacent to the Harbor Park NYS Heritage Area. The boundaries of Harbor Park include Battery Park & Plaza, Pier A, Liberty Island, Ellis Island, South Street Seaport, Empire-Fulton Ferry State Park, and New York Harbor Waters, including the East River.

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
M3-1 - Heavy Manufacturing District (Low Performance)

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? School District #30

b. What police or other public protection forces serve the project site?
NYPD Police Precinct 114

c. Which fire protection and emergency medical services serve the project site?
FDNY Fire Company L116

d. What parks serve the project site?
Rainey Park, Spirit Playground

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? The Project includes the demolition of existing structures within an existing industrial site, and the redevelopment, including the construction and operation, of an energy storage facility

b. a. Total acreage of the site of the proposed action? 6.9 acres
b. Total acreage to be physically disturbed? 6.5 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 27.1 acres
The primary Ravenswood Generating Station is 27.1 acres. In addition, the Applicant owns a small portion of the Rainey Substation to the north of 36th Avenue.

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
_____
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☑ Yes ☐ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:
- Total number of phases anticipated 3
- Anticipated commencement date of phase 1 (including demolition) 12 month 2019 year
- Anticipated completion date of final phase 3 month 2022 year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases:
The phases will consist of demolition, and construction of each of the three battery buildings, portions of the phases may overlap or be conducted concurrently.

f. Does the project include new residential uses? ☐ Yes ☑ No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase	_____	_____	_____	_____
At completion of all phases	_____	_____	_____	_____

g. Does the proposed action include new non-residential construction (including expansions)? ☑ Yes ☐ No

If Yes,

i. Total number of structures 3

ii. Dimensions (in feet) of largest proposed structure: 60 height; 180.5 width; and 257 length

iii. Approximate extent of building space to be heated or cooled: (all three phases) 118,103 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐ Yes ☑ No

If Yes,

i. Purpose of the impoundment: _____

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐ Other specify:

_____

iii. If other than water, identify the type of impounded/contained liquids and their source.

_____

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

_____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite) ☐ Yes ☑ No

If Yes:

i .What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

_____

_____

i*v.* Will there be onsite dewatering or processing of excavated materials? ☐ Yes ☐ No

If yes, describe. _____

_____

v. What is the total area to be dredged or excavated? _____acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐ Yes ☐ No

ix. Summarize site reclamation goals and plan: _____

_____

_____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐ Yes ☑ No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

_____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐Yes ☐No

If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐Yes ☐No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion:_____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

_____

- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☐Yes ☑No

If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐Yes ☐No

If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No
- Do existing lines serve the project site? ☐Yes ☐No

iii. Will line extension within an existing district be necessary to supply the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐Yes ☐No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

_____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐Yes ☑No

If Yes:

i. Total anticipated liquid waste generation per day: _____ gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

_____

_____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐Yes ☐No

If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes ☐No

  If Yes:
  - Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☐No

If Yes:
- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑Yes ☐No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

-8,276.4 Square feet or -0.2 acres (impervious surface)

299,461 Square feet or 6.9 acres (parcel size)

ii. Describe types of new point sources. N/A

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

Stormwater will be collected in a new subsurface collection system to be installed within the proposed area of development that will connect to the existing Ravenswood Generating Station's stormwater collection system, which discharges to the East River in accordance with an existing site SPDES permit.

- If to surface waters, identify receiving water bodies or wetlands: Stormwater discharges to the East River in accordance with an existing site SPDES permit.
- Will stormwater runoff flow to adjacent properties? ☐Yes ☑No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐Yes ☑No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐Yes ☑No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:
- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

_____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend ☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

_____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

_____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑Yes ☐No

The Project will not result in additional demand for electricity from non-utility uses, The Project will store electricity drawn from the grid and generated at other facilities.

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

Approximately 1,000,000 MWh

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

Interconnection to the local utility/grid

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☑Yes ☐No

A new substation will be constructed by ConEd adjacent to the Project Site.

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 7AM-6PM
- Saturday: none planned
- Sunday: none planned
- Holidays: none planned

ii. During Operations:

- Monday - Friday: 24 hours/day
- Saturday: 24 hours/day
- Sunday: 24 hours/day
- Holidays: 24 hours/day

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Construction noise will be temporary, localized and limited to the hours of construction. Predicted noise levels from the Project are not expected to exceed NYSDEC noise impact criteria, the NYC Noise Control Code or NYC Zoning Resolution Performance Standards for Manufacturing Districts.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe: _____

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

The Project will install security lighting at the entrances to each battery building and surrounding the buildings as depicted on the Site Plan Drawings.

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☑ No

Describe: _____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities:_____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: TBD tons per _____ (unit of time)
- Operation : 0- None expected tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: The construction contractor will be responsible for the proper management and disposal of any solid waste during construction, and wastes will be managed in accordance with all regulatory requirements.
- Operation: Solid waste is not expected to be generated during operations. Batteries will be recycled at the end of their useful life at an appropriately licensed facility

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: The construction contractor will be responsible for the proper management and disposal of any solid waste during construction, and wastes will be managed in accordance with all regulatory requirements.
- Operation: Solid waste is not expected to be generated during operation. Batteries will be recycled at the end of their useful life at an appropriately licensed facility

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☑ Urban ☑ Industrial ☑ Commercial ☐ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☐ Agriculture ☑ Aquatic ☑ Other (specify): Recreational

ii. If mix of uses, generally describe:

Site is an existing generating facility.

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	5.6	5.4	-0.2
• Forested	0	0	0
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	0	0	0
• Agricultural (includes active orchards, field, greenhouse etc.)	0	0	0
• Surface water features (lakes, ponds, streams, rivers, etc.)	0	0	0
• Wetlands (freshwater or tidal)	0	0	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: Landscape rock cover and landscape trees	1.3	1.5	+0.2

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☑ Yes ☐ No

If Yes,

i. Identify Facilities:

P.S. 83; P.S. 76; P.S. 111; St. Ritas School; Growing Up Green Middle School; Jacob Blackwell School; Western Queens Nursery School; The Child School; The Child Middle School; Long Island City High School; Long Island City Health Center; Bright Horizons; NYC Housing Authority Ravenswood Day Care; Queensbridge South Day Care Center

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____

_____

iii. Describe any development constraints due to the prior solid waste activities: _____

_____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☑ Yes ☐ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

The Project is located within the Ravenswood Generating Station which has been an active electric generating facility since the 1960s and is a small quantity generator. Hazardous wastes generated at the site are transported for off-site processing or disposal at an appropriately licensed facility.

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☑ Yes ☐ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☑ Yes ☐ No

☑ Yes – Spills Incidents database — Provide DEC ID number(s): 0912294

☑ Yes – Environmental Site Remediation database — Provide DEC ID number(s): V00368; 241119

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures:

Remediation activities fall under the Voluntary Cleanup Program (V00368) and State Superfund Program (241119). In addition, the Site has been working with NYSDEC to address spills (0912294) and will coordinate Project-related activities with the NYSDEC to ensure remediation will continue as required.

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑ Yes ☐ No

If yes, provide DEC ID number(s): V00368; 241119; 241126; C241028; C241213; 241028

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

As addressed above in ii, activities within the Site will be coordinated with NYSDEC (V00368, 241119). For spills located outside the project site (241126, C241028, C241213 and 241028), the Project will not entail activities outside the Station, and as such these spills will not impact the Project nor will the Project impact the status of these spills.

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? 10-30 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____%

c. Predominant soil type(s) present on project site:

UtA	100 %
	%
	%

d. What is the average depth to the water table on the project site? Average: 10-20 feet

e. Drainage status of project site soils:

☐	Well Drained:	N/A % of site
☐	Moderately Well Drained:	N/A % of site
☐	Poorly Drained	N/A % of site

f. Approximate proportion of proposed action site with slopes:

☑	0-10%:	100 % of site
☐	10-15%:	% of site
☐	15% or greater:	% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☐ Yes ☑ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name East River Classification I
- Wetlands: Name _____ Approximate Size _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☑ Yes ☐ No

k. Is the project site in the 500-year Floodplain? ☑ Yes ☐ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑ Yes ☐ No
If Yes:

i. Name of aquifer: Queens-Brooklyn Sole Source Aquifer. The Project site is located more than 5 miles from the nearest public water supply well and groundwater flow from the property discharges to the East River.

m. Identify the predominant wildlife species that occupy or use the project site: _____
N/A _____ _____ _____
_____ _____ _____

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation): _____
_____
ii. Source(s) of description or evaluation: _____
iii. Extent of community/habitat:
- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑ No

If Yes:
i. Species and listing (endangered or threatened): _____
Peregrine Falcon is documented within 0.5 miles of the Project Site.

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:
i. Species and listing: _____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No
If yes, give a brief description of how the proposed action may affect that use: _____
_____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No
If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No
i. If Yes: acreage(s) on project site? _____
ii. Source(s) of soil rating(s): _____

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____
_____
_____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No
If Yes:
i. CEA name: _____
ii. Basis for designation: _____
iii. Designating agency and date: _____

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

If Yes:

i. Identify resource: The Project Site is adjacent to the Harbor Park NYS Heritage Area.

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____

iii. Distance between project and resource: (adjacent) miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

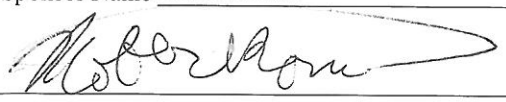
Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Robert Romine Date 02/20/2019

Signature  Title Project Engineer

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Summary of Discretionary and Ministerial Permits and Approvals and Involved Agencies

Agency		Permit/Approval	Agency Action
Federal	U.S. Fish and Wildlife Service (USFWS)	Section 7: Threatened and Endangered Species Review and Consultation	Consultation letter to determine if Federally-regulated species or their habitats are potentially present onsite
State	New York State Public Service Commission (NYSPSC)	Section 68 Certificate of Public Convenience and Necessity, Section 69 financing approval and lightened regulation confirmation	Approval to construct and finance an electric facility
		SEQRA Lead Agency Review and Determination	NYSPSC may seek Lead Agency status; conduct coordinated review with all Involved Agencies including NYSDEC, NYCDCP and Interested Parties; and issue SEQRA Determination
	New York Independent Service Operator (NYISO)	Large Generator Interconnection Procedures (LGIP)	Interconnection approval
	New York State Department of Environmental Conservation (NYSDEC)	NYSDEC, Natural Heritage Program (NYNHP) Threatened and Endangered Species Inventory Review	Consultation to determine if State-listed species or their habitats are potentially present onsite
		NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity	Approval for coverage under GP-0-15-002
		Individual Industrial SPDES Permit Modification	Modification to Ravenswood's existing Industrial SPDES Permit (NY0005193)
	New York State Office of Parks, Recreation and Historic Preservation (OPRHP)	Section 106 Cultural and Historic Resources / The New York State Historic Preservation Act of 1980 Review and Consultation and Section 14.09 the Parks, Recreation and Historic Preservation Law, which was enacted by the New York State Historic Preservation Act of 1980 (Chapter 354 of the Laws of 1980) – "Determination of No Effect"	Consultation to determine whether cultural and/or historic resources are potentially present on site

Summary of Discretionary and Ministerial Permits and Approvals and Involved Agencies

Agency		Permit/Approval	Agency Action
Local	New York City Department of City Planning (NYCDCP)	New York City Waterfront Revitalization Plan (WRP) Consistency Review	Determination of consistency with WRP
	New York City Department of Buildings (NYCDOB)	Excavation and Demolition Permit(s)	For removal of existing gas-fired combustion turbines and associated equipment
		Construction Permit(s) and related design plan reviews	Site-specific design review and approval for installation of battery storage equipment
	New York City Department of Sanitation (DSNY)	Fill Material Operations Permit	Required for projects that include landfilling, grading, land improvements or changing existing property grades through the addition of fill material
	New York City Fire Department (FDNY)	Letter of No Objection	Technology Management and Hazmat Operations review of proposed battery storage equipment