

ARTHUR KILL TERMINAL (AKT)

Draft Scope of Work for an Environmental Impact Statement

CEQR #: 23DCP056R

Lead Agency:
NYC Department of City Planning

Applicant:
Arthur Kill Terminal LLC

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A. INTRODUCTION

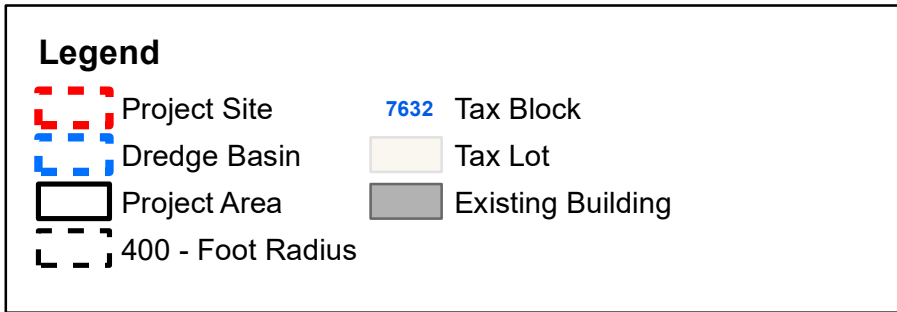
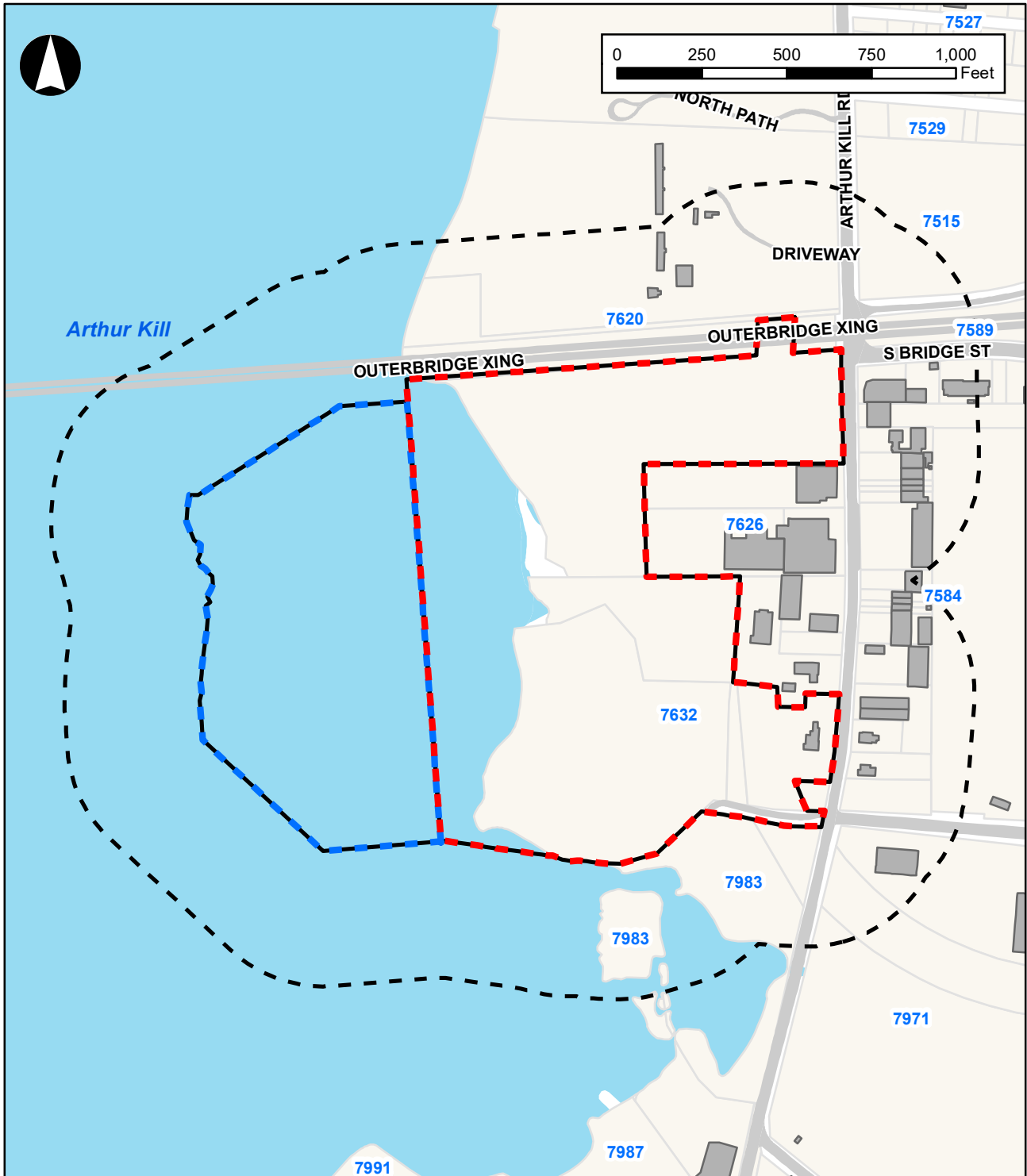
This Draft Scope of Work (“Draft Scope”) outlines the technical areas to be analyzed in the preparation of the Draft Environmental Impact Statement (DEIS) for the Arthur Kill Terminal (AKT) project along the Arthur Kill waterfront in Staten Island Community District (CD) 3. The New York City Department of City Planning (DCP), acting on behalf of the New York City Planning Commission (CPC), as lead agency for City Environmental Quality Review (CEQR), has determined that the project will require the preparation of an EIS.

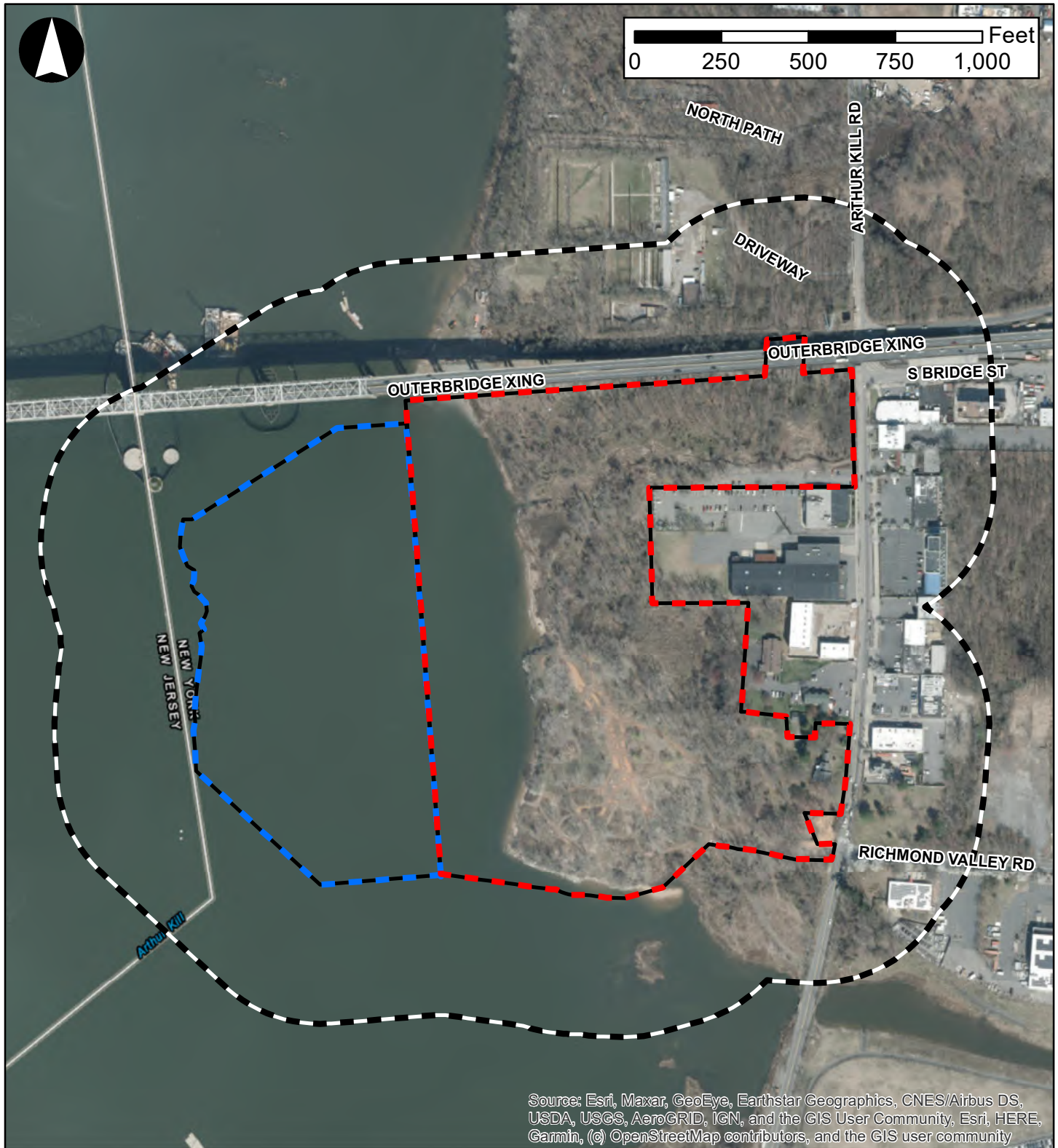
The Proposed Actions would facilitate development of the Project Site as Arthur Kill Terminal (AKT), an approximately 32.5-acre state-of-the-art port for the staging, assembly and pre-commissioning of wind turbine generators (WTGs) and other offshore wind (OSW) components (the “Proposed Project”). The WTGs would be assembled at the Project Site prior to being transported and installed at future offshore wind farms that are to be built off the East Coast of the United States. The proposed staging and assembly port would not house functioning or operating wind turbines. The Proposed Project includes the construction of a marine terminal with a 1,365 linear-foot (lf) quay, an approximately 28.5-acre laydown and storage area upland of the quay, as well as a two-story (48-foot-tall including the mechanical bulkhead) tenant building located at the northeast corner of the Project Site containing warehouse space (for tools, spare parts, and consumables) and accessory office space, totaling approximately 22,472 gross square feet (gsf), with 109 accessory parking spaces, and the adaptive reuse of an existing two-story (33-foot-tall) 4,212 gsf residential structure (the “Cole House”) at the southeast corner of the site as an owner office and visitor area with 12 accessory parking spaces. All of the proposed uses are allowed under the existing M1-1/M3-1 zoning, and the office/warehouse/visitor spaces are accessory to the operation of the port facility. The Proposed Project is essential for New York State to meet its clean energy goal of developing, building, and interconnecting 9 gigawatts (GW) of offshore wind energy capacity by 2035. The 32.5-acre Project Site and the proposed approximately 18-acre basin for vessel operations (the “Dredge Basin”) comprise the 50.5-acre Project Area (refer to **Figure 1**).

The Proposed Project requires a number of discretionary approvals from the New York City Planning Commission (CPC) which include, but are not limited to a City Map amendment, a zoning text amendment, special permit, zoning authorizations, and a landfill action. The Proposed Project would also require approvals from, but not necessarily limited to, the New York State Department of Environmental Conservation (NYSDEC), the United States Army Corps of Engineers (USACE), the New York City Department of Sanitation (DSNY), the New York State Department of State (DOS), and the New York State Office of General Services (OGS).

The Proposed Actions, if approved, would allow the development of the Project Site, portions of which have been previously used and disturbed. With an anticipated construction start date in late 2023 and an estimated construction period of 20 to 23 months, it is anticipated that the Proposed Project would be complete and fully operational by late 2025.

This document provides a description of the Proposed Actions and the Applicant’s Proposed Project, and includes task categories for all technical areas to be analyzed in the DEIS.





Legend

-  Project Site
-  Dredge Basin
-  400-Foot Radius
-  Project Area

B. REQUIRED APPROVALS AND REVIEW PROCEDURES

Required Approvals

The Proposed Actions would encompass several discretionary actions that are subject to review under the State/City Environmental Quality Review (S/CEQR) process. The anticipated discretionary actions include, but are not limited to a City Map amendment, a zoning text amendment, special permit, zoning authorizations, and a landfill action (see “Description of the Proposed Actions” in Section E below for a comprehensive list and description of the discretionary approvals required to implement the Proposed Project). The Proposed Project would also require approvals from, but not necessarily limited to, the New York State Department of Environmental Conservation (NYSDEC), the United States Army Corps of Engineers (USACE), the New York City Department of Small Business Services (SBS), the New York City Department of Sanitation (DSNY), the New York State Department of State (DOS), and the New York State Office of General Services (OGS). This would include NYSDEC tidal wetland permit and water quality certification, and USACE permits for freshwater wetland and for discharge of fill material into the waters of the U.S., as well as NYSDEC SPDES individual permits for operational and construction discharges.

City Environmental Quality Review (CEQR) and Scoping

The Proposed Actions are classified as a Type 1 Action, as defined under 6 NYCRR Part 617.4 and NYC Executive Order 91 of 1977 §6-15 (2), and are subject to environmental review in accordance with CEQR guidance. An Environmental Assessment Statement (EAS) and Positive Declaration were issued on November 15, 2022 by DCP, as lead agency. DCP has determined that the Proposed Actions may result in significant adverse environmental impacts and directed that a DEIS be prepared.

This Draft Scope of Work (Draft Scope) for the preparation of a DEIS contains a description of the Proposed Actions and the tasks that would be undertaken to analyze the potential environmental impacts of the Proposed Actions and associated Proposed Project. This Draft Scope sets forth the analyses and methodologies that will be utilized to prepare the DEIS. During the public comment period, those interested in reviewing the Draft Scope may do so and give their comments to the lead agency.

In accordance with SEQRA and CEQR, this Draft Scope of Work has been distributed for public review. The issuance of the Draft Scope marks the beginning of the public comment period. The scoping process allows the public a voice in framing the scope of the DEIS. A public scoping meeting has been scheduled for December 15, 2022 at 2:00 pm (“Scoping Meeting”) and the period for submitting written comments will remain open until 5:00 pm on Tuesday, December 27, 2022. In support of the City’s efforts to contain the spread of COVID-19, DCP will hold the public scoping meeting remotely. Instructions on how to view and participate, as well as materials relating to the meeting, will be available at the DCP Scoping Documents webpage (<https://www.nyc.gov/site/planning/applicants/scoping-documents.page>) and NYC Engage website (<https://www1.nyc.gov/site/nycengage/index.page>) in advance of the meeting. The public, interested agencies, and elected officials, are invited to comment on the Draft Scope, either in writing or orally, at the Scoping Meeting.

Comments received during the Scoping Meeting and written comments received up to ten days after the meeting will be considered and incorporated, as appropriate, into the Final Scope of Work (Final Scope). The Final Scope will revise the extent or methodologies of the studies, as appropriate, in response to comments made during the CEQR scoping process. The DEIS will be prepared in accordance with the resulting Final Scope.

Once the lead agency is satisfied that the DEIS is complete, the document will be made available for public review and comment. A public hearing will be held on the DEIS in conjunction with the City Planning Commission (CPC) hearing on the land use applications to afford all interested parties the opportunity to submit oral and written comments. At the close of the public review period, a Final EIS (FEIS) will be prepared. Comments made on the DEIS will be responded to and incorporated into the FEIS, as appropriate. The FEIS will then be used by the relevant City and State agencies to develop S/CEQR findings, which address project impacts and proposed mitigation measures, and to decide whether to approve the requested discretionary actions, with or without modifications. The rationale for that decision is then set forth in a document called a Statement of Findings.

C. EXISTING CONDITIONS

Project Area

The Project Area is approximately 50.5 acres and includes the Project Site and the Dredge Basin as shown in **Figure 1** above. Each component is described below.

Project Site

The Project Site is located between the neighborhoods of Charleston and Tottenville in southwestern Staten Island within Community District 3 and is bounded by the Outerbridge Crossing to the north, Arthur Kill Road to the east, the mapped but unbuilt Richmond Valley Road extension and the shoreline of Mill Creek to the south, and the Arthur Kill waterway to the west out to the mapped U.S. Bulkhead line. As shown in **Figure 1**, the Project Site is irregular in shape on its eastern boundary. Portions of the eastern boundary of the Project Site have frontage along Arthur Kill Road whereas other portions of the eastern boundary are set back from Arthur Kill Road behind previously developed and separately owned commercial lots that are currently in use. The northeastern corner of the Project Site has approximately 310 feet of frontage along Arthur Kill Road. The southeastern corner has approximately 371 feet of frontage along Arthur Kill Road. To the south, the Project Site also has approximately 929 feet of frontage along a mapped but unbuilt extension of Richmond Valley Road (west of Arthur Kill Road). Also to the south, the Project Site is bordered by Mill Creek (a.k.a. Nassau Creek) which is a small, tidally flushed creek adjacent to what was until the 1980s the Nassau Smelting and Refining Company (also known as Nassau Metals), a Superfund Site (EPA ID NYD086225596).

The Project Site totals approximately 32.5 acres, of which approximately 23.6 acres are upland area, of which 3.31 acres are freshwater wetlands, and approximately 8.9 acres are submerged lands between the shoreline and Federal Bulkhead Line.¹ The Project Site includes the area within the mapped right-of-way of Richmond Valley Road between Arthur Kill Road to the east and the mapped U.S. Bulkhead line in the Arthur Kill to the west. Although the City Map shows Richmond Valley Road mapped westward extending from the intersection with Arthur Kill Road out to the mapped U.S. Bulkhead line, it is currently not dedicated or built within the Project Site, and is shown on the Tax Map as part of Block 7632, Lot 150.

¹ It should be noted that under With-Action conditions, rights to approximately 204,420 sf of lot area between the shoreline of Block 7620 Lot 1 and the U.S. bulkhead line would be acquired by the Applicant from the New York State Office of General Services (OGS). In addition, approximately 13,156 sf of the larger 92,800 sf mapped but unbuilt portion of Richmond Valley Road would be demapped and is expected to be included in the Project Site (much of the remainder of the 92,800 sf of Richmond Valley Road to be demapped is located within the existing Block 7632 Lot 150). Thus, under With-Action conditions, approximately 217,576 sf (~5 acres) of lot area would come under control of the Applicant.

The Project Site is currently undeveloped, with approximately 1,500 linear feet of shoreline along the Arthur Kill to the west and 500 linear feet along Mill Creek to the south. The Project Site is located within the coastal zone boundary and within the current 100-year and 500-year flood zones, as delineated in the FEMA 2015 PFIRMs. It is primarily wooded with some disturbed areas (e.g., trails), fill, urban debris, and natural beach. The southern half of the property is relatively flat but slopes slightly to the west and south, and the northern half slopes from the east-northeast to the west.

The sole existing structure on the Project Site is a two-story, approximately 4,212 gsf single-family residential building (referred to as the “Cole House”), on Block 7632, Lot 6. This residential structure, which was constructed in the mid-19th century, predates zoning, and is a legal non-conforming use. The New York City Landmarks Preservation Commission (LPC) has previously declined to designate the Cole House as a City landmark, and the New York State Historic Preservation Office (SHPO) has determined that it is not eligible for listing on the State/National Registers of Historic Places.²

The Project Site is located on the Arthur Kill Waterway, immediately south of the Port Authority of New York and New Jersey (PANYNJ) Outerbridge Crossing (Route 440). The proposed port facility would be served by the Arthur Kill Federal Navigation Channel (Outerbridge Reach section), which is -36 feet deep (Mean Lower Low Water [MLLW]) and approximately 600 feet wide. The USACE maintains the channel and publishes the current channel status in their Controlled Depth Reports. The Project Site is unrestricted by any bridge or other structure that would limit the height (or width) of vessels and turbines assembled at and deployed from the proposed port.

The Project Site has both freshwater and tidal wetlands, and wetland adjacent areas. There are no NYSDEC-mapped freshwater wetlands present on the Project Site; however, according to a 2018 Wetland Delineation Map provided by NYSDEC, there are NYSDEC mapped freshwater wetlands on the adjacent property to the north of the Project Site, and a NYSDEC regulated freshwater wetland adjacent area extends to the northeastern most portion of the Project Site. In November 2021, 3.31 acres of Freshwater Wetlands were delineated and flagged within the Project Site, which were formed due to stormwater outfall draining onto the property, runoff from adjacent commercial properties, and low permeability ground material.³ NYSDEC’s regulated Freshwater Wetlands are typically limited to the areas on the NYSDEC freshwater wetland maps; therefore, the delineated freshwater wetlands are under the jurisdiction of only USACE. In addition, approximately 0.54 acres of tidal marsh wetlands (Estuarine Common Reed Marsh, High Salt Marsh and Low Salt Marsh) were mapped along the shoreline of the Project Site. The Project Site waterfront is within the 1974 tidal wetlands inventory maps of the NYSDEC, which includes tidal wetlands within the marine district of New York State. A portion of the NYSDEC-regulated tidal wetland adjacent area also extends across the mapped but unbuilt Richmond Valley Road. The shoreline of the Arthur Kill and Mill Creek includes a mix of tidal wetlands (e.g., intertidal salt marsh, intertidal mudflats, and maritime beach) and tidal wetland adjacent area. **Table 1** summarizes existing conditions on the Project Site (i.e., upland lot or in-water area).

² The determinations by LPC/SHPO were made in 2016 as part of their review of a prior proposal for the Project Site, which consisted of a shopping center (“Riverside Galleria”). That project was never approved.

³ As detailed in the May 2022 Arthur Kill Joint Permit Application and its supplemental exhibits.

TABLE 1
Existing Site Conditions

Type	Size (SF)	Size (acres)
Project Site	1,417,013 sf	~32.5
Upland Area ^{1,2}	1,029,172 sf	~23.6
Land Under Water ³	387,941 sf	~8.9
Dredge Basin	784,080 sf	~ 18
Project Area Total	2,201,093	~ 50.5

(1) Includes approximately 13,156 sf of the larger 92,800 sf of the mapped but unbuilt Richmond Valley Road that is expected to be included in the Project Site.

(2) Approximately 144,183 sf (3.31 acres) of the upland area is Freshwater Wetlands.

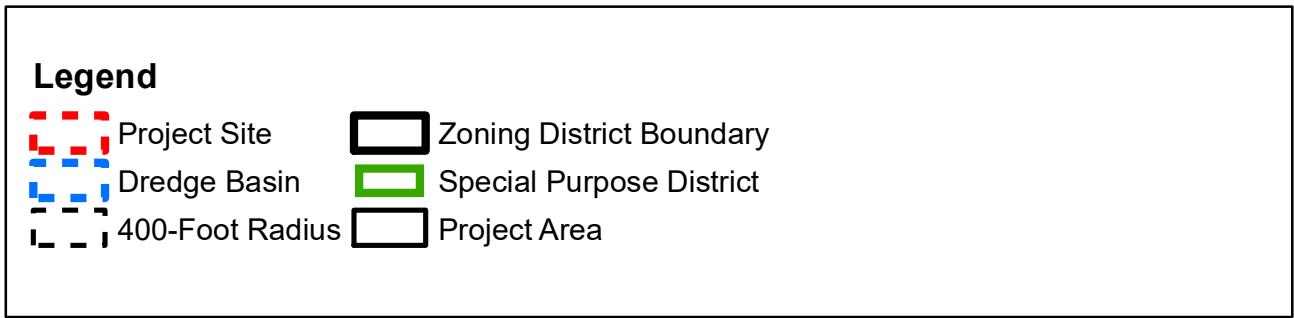
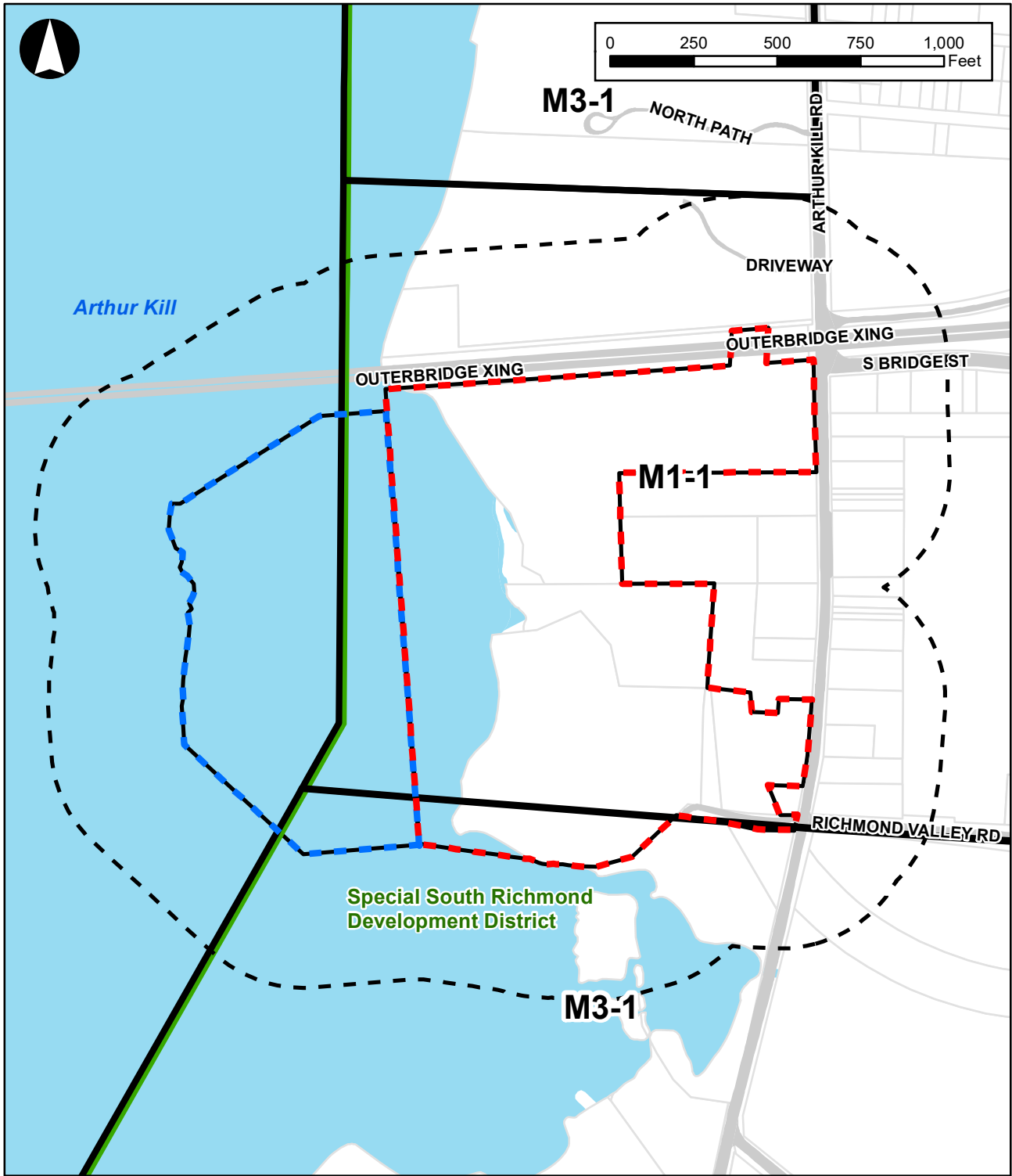
(3) Approximately 204,420 sf of area is in-water area owned by the New York State Office of General Services (OGS) rights in which would be acquired by the Applicant as a result of the Proposed Actions.

Table 2 below highlights the existing status of the Project Area. Approximately 1,199,437 sf is under the control of the Applicant. The Applicant expects to acquire the necessary rights in approximately 204,420 sf of in-water area from the New York State Office of General Services (OGS) to develop the Proposed Project. Approximately 13,156 of the larger 92,800 sf of Richmond Valley Road to be demapped is expected to be included in the Project Site. The remaining 79,644 sf area of Richmond Valley Road to be demapped is located within Block 7632, Lot 150 and Block 7983, Lots 100 and 110.

TABLE 2
Existing Project Site Ownership

Block	Lot	Owner	Size (sf)	Type
7620	1	WF Liberty, LLC	442,738	Upland
7632	6	New SI Water, LLC	81,784	Upland
7632	50	WF Liberty, LLC	125,804	Upland
7632	151	WF Liberty, LLC	22,051	Upland
7632	150	WF Liberty, LLC	343,639	Upland
7632	150	WF Liberty, LLC	183,421	In-Water
In-Water Area to be acquired by the Applicant		New York State OGS	204,420	In-Water
Area of Richmond Valley Road not within an existing tax lot to be demapped and expected to be included in Project Site		TBD	13,156	Upland
Project Site Total:			1,417,013	

The Project Site has been zoned for industrial use since the adoption of the 1961 Zoning Resolution. As shown in **Figure 2**, the majority of the Project Site is zoned M1-1, which allows light manufacturing and warehouse uses along with a range of commercial uses. A small portion of the Project Site south of Richmond Valley Road is zoned M3-1. In addition to the underlying zoning, the Project Site is located in the Special South Richmond Development District (SRD), which was established in 1975 during a period of rapid development in Staten Island to guide the development of the southern part of Staten Island and ensure that the provision of public infrastructure kept pace with new development. To avoid destruction of the natural and recreational resources that define the area, the SRD mandates tree preservation and planting requirements, controls changes to topography, establishes special building height and setback



limits, and designates open spaces to be left in a natural state as part of an open space network that includes public parks and waterfront esplanades. The Project Site is a waterfront zoning block, as defined by Article VI, Chapter 2 of the Zoning Resolution.

Overall, the Project Site is easily accessible to workers and other businesses, with its proximity to major New York-New Jersey crossings and major interstate highway networks and the Arthur Kill station on the Staten Island Railway (SIR) commuter rail, which runs along the eastern shore of Staten Island making 21 stops between St. George Ferry Terminal (connecting to Battery Park in Manhattan) and Tottenville. From Arthur Kill Station, it is approximately 0.35 miles to the intersection of Arthur Kill Road and Richmond Valley Road. Additionally, the Metropolitan Transportation Authority (MTA) offers full time daily local bus service along the Bricktown Mall Route (S78) that makes multiple stops along Arthur Kill Road adjacent to the Project Site.

PROJECT SITE HISTORY AND PERTINENT HISTORICAL SITE CHANGES

The southern part of the Project Site was used for industrial purposes — a mill, lumber, wood, and coal yard — from approximately 1700 until the early 1900s. By the early twentieth century, the area was occupied by the Southern Shipping Company. By 1917, the site was occupied by the M.J. Dady Corporation, which developed the site with several structures for storage, offices, and a scale house. M.J. Dady was associated with contracting and ship yards.

The Project Site has experienced significant land filling and land disturbance across most of its footprint. In 1925, part of the Project site was cut and filled for construction of a rail spur (extension) of the West Shore Branch of the Staten Island Rapid Transit Railway (SIRT) to facilitate the 1925-1928 construction of the Outerbridge Crossing adjacent to the northern end of the Project site. The SIRT rail spur crossed the Project Site from the southeast corner and extended beyond the northern end of the property. By 1954 at the latest, the SIRT rail spur was removed. Additionally, a tall cylindrical storage tank approximately 30 feet in diameter was built in the northwestern portion of the Project Site. The storage tank appears in photos taken around the time of the Outerbridge Crossing construction and was demolished some time before 1947.

The southern portion of the Project Site appears to have been filled in between 1943 and 1951, with expansion of the southern coastline and the filling in of a pond. Between 1962 and 1974 both the northern and southern portions of the Project Site, including wetlands and a northern pond, appear to have been subject to mass land disturbance and land-filling activities. Aerial imagery from 1995 depicts two apparent areas of land filling in the southern portion of the upland site.

Based on historical photographs, filling of the Project Site and extension of the shoreline into the Arthur Kill waterway occurred several times between 1945 and 1963. It appears that after 1963 concrete abutments of some sort were installed first along the southwestern and southern shorelines of the Project Site and then somewhat later along the western shoreline. At some point prior to 1969, fill was removed, leaving the Project shoreline at its approximate current configuration. It also appears that concrete containment barriers were installed in the 1960s for infilling of the southwestern upland of the Project Site; remnants of those barriers are visible today and it is anticipated that additional concrete sections would be revealed by excavation.

In the southwestern portion of the Project Site, elevations of former frame structures built on grade slabs between 1857 and 1940 were mapped at a few feet above mean high tide; present ground elevations are approximately 10 feet above the surfaces on which these structures were built. In addition, based on field observations and historical photographs, there are still present the remains of the three ship launch-ways of the Moran Towing and Transportation Corporation and fragmentary pile remains of the wharves, piers,

and line of “Spiles” associated with the Cole Brothers/Southern Shipbuilding Company. This section of the shoreline likely also includes buried abandoned structures, broken pieces of concrete fill, and remnants of a historic sloped berm, related to the earlier filling of the shoreline and former waterfront.

Previously, the Project Site was the subject of the 2017 Riverside Galleria proposal (C180053ZSR, C180054ZSR, N180055ZAR, N180056ZAR, N180057ZAR, N180058ZAR, N180059ZAR, N180060ZCR), which intended to redevelop the site with approximately 590,000 gross square feet of commercial (retail) space. The application was withdrawn in October 2017. In 1993, an authorization (N900063RAR) was requested for modification of group parking facility and topography regulations to facilitate construction of a banquet hall, restaurant, and retail at the Project Site. The proposal was never approved. There are no other previous actions relevant to the site.

Dredge Basin

The Dredge Basin between the Bulkhead Line and the limits of the New York-New Jersey State Boundary would have an area of approximately 18 acres, comprised of both littoral and sublittoral aquatic resources. Geophysical surveys of the underwater western and southern portion of the Project Site that would be part of the proposed dredge area indicate a significant amount of debris or obstructions within the tidal flats.

Neighborhood Context

The Project Site is surrounded by light industrial and commercial uses as well as transportation infrastructure. Commercial and light industrial uses on the western side of Arthur Kill Road include a veterinary hospital, a medical imaging facility, a film production studio, and a small shopping center. The eastern side of Arthur Kill Road includes several shopping centers (Outerbridge Plaza, Richmond Valley Atrium, and Major League Plaza) with various retail and commercial office facilities. One single-family home is located on the eastern side of Arthur Kill Road, across the street from the Project Site and to the south of the shopping centers and north of Richmond Valley Road (the home is located within a manufacturing zoning district [M1-1] and was built prior to the introduction of zoning; therefore, it is an existing non-conforming use).

The surrounding neighborhoods are also largely a combination of retail/commercial, industrial, and undeveloped vacant land. Richmond Valley Road in the near vicinity of the Project Site has a basketball and fitness entertainment center and several retail stores, and Page Avenue has several shopping centers such as Tottenville Plaza and Richmond Valley Plaza, in addition to several restaurants, a bakery, and national chains such as Sonic and Starbucks. Additional commercial uses are located along South Bridge Street and along Page Avenue. Industrial uses are located south of the Project Site along Arthur Kill Road and include an automobile restoration company and a boat repair shop. Waterfront uses in the surrounding area are located approximately ¾-mile southwest of the Project Site, and include two marinas and the previously mentioned boat repair shop.

The remainder of the surrounding area is predominantly undeveloped or vacant land, particularly along the portion of Arthur Kill Road located north of the Outerbridge Crossing; the only developed parcels in this area contain a warehouse, a gun club shooting range, and beyond the gun club the Tides at Charleston, a retirement community. Similarly, the area south of the Project Site along Mill Creek includes vacant and undeveloped lands. There are no Waterfront Public Access Plans (WAPs) mapped in the surrounding area, and there is no public access available to the waterfront.

The surrounding area also contains substantial transportation infrastructure, including the Outerbridge Crossing (which is designated I-440), an elevated highway immediately to the north of the Project Site that spans the Arthur Kill, connecting to New Jersey. The Outerbridge Crossing is eligible for listing on the State and National Registers of Historic Places (S/NR-eligible). Further to the east, the Outerbridge Crossing connects to the West Shore Expressway (the continuation of I-440) and Drumgoole Road. Staten Island Railway (SIR) tracks are located in the vicinity of the Project Site, to the north of the predominantly residential Tottenville neighborhood to the south.

The majority of the surrounding area is zoned for manufacturing uses, and is mapped within M1-1 and M3-1 zoning districts; a residential (R3-2) and commercial district (C4-1) are located approximately ¼-mile to the north of the Project Site. There have not been any recent rezonings approved within the surrounding area.

D. DESCRIPTION OF APPLICANT'S PROPOSED PROJECT

The Proposed Actions would facilitate the development and construction of a purpose-built marine terminal for the staging and assembly of offshore WTG components to support the installation of offshore wind farms along the eastern seaboard. Although it is anticipated that the facility would primarily be used for the staging and assembly of WTGs, it would also be capable of supporting the staging and assembly of other OSW components such as WTG foundations (monopiles, jackets, and transition pieces), array and export cables, and tools and equipment needed for OSW construction and major maintenance. WTG components (consisting primarily of tower sections, blade sets, and nacelle generators) would be delivered by vessels, unloaded, handled, stored, preserved, pre-commissioned and assembled at the facility, before being loaded onto vessels for transportation and installation at OSW farms in the New York Bight (the coastal area between Long Island and the New Jersey coast) and otherwise off the East Coast of the U.S. In addition to the main OSW components, various equipment would also be handled and stored at the facility including transport frames, installation tools, and shipping containers. More information on the functional areas within the facility is provided below. The Proposed Project is essential to New York State meeting clean energy goals set for 2035.

The site is currently owned by WF Liberty LLC and New SI Water LLC. The Applicant has a purchase agreement with the owners to acquire fee title to the lots. The purchase agreement allows the Applicant to pursue any necessary approvals to construct the Proposed Project on the Project Site. As noted above, the Applicant would secure the necessary rights in approximately 204,420 sf of lot area between the shoreline of Block 7620 Lot 1 and the U.S. bulkhead line from the New York State Office of General Services (OGS) to facilitate the Proposed Project. In addition, approximately 13,156 sf of the larger 92,800 sf of the mapped but unbuilt portion of Richmond Valley Road would be demapped and is expected to be included in the Project Site. Thus, approximately 217,576 sf (~5 acres) of lot area would come under control of the Applicant.

Construction of the Proposed Project would occur over a period of approximately 20 to 23 months with an anticipated start date in late 2023, with all facilities complete and fully operational in late 2025. Construction activities would include installation of a 1,365 linear-foot heavy load bearing quay, and dredging of a basin to -33 feet NAVD88 from the wharf along the Bulkhead Line for the Project Site to the NY/NJ State Boundary in the Federal Navigational Channel, to allow cargo vessels and (WTIVs) to access the quay. Upland of the quay would be the storage area, which would consist of a gravel surface over processed dredge material (PDM) and clean backfill. In addition, upland construction would occur in the tenant area to allow for the two-story, 22,472 gsf, tenant warehouse/office building and parking lot. It should be noted that the Tenant Area and Owner's Area are both outside of the Tidal Wetland Adjacent

Area (TWAA). The Tenant Area building, parking lot, and retaining walls would be within the freshwater wetland areas regulated by the USACE.

Operational Activities

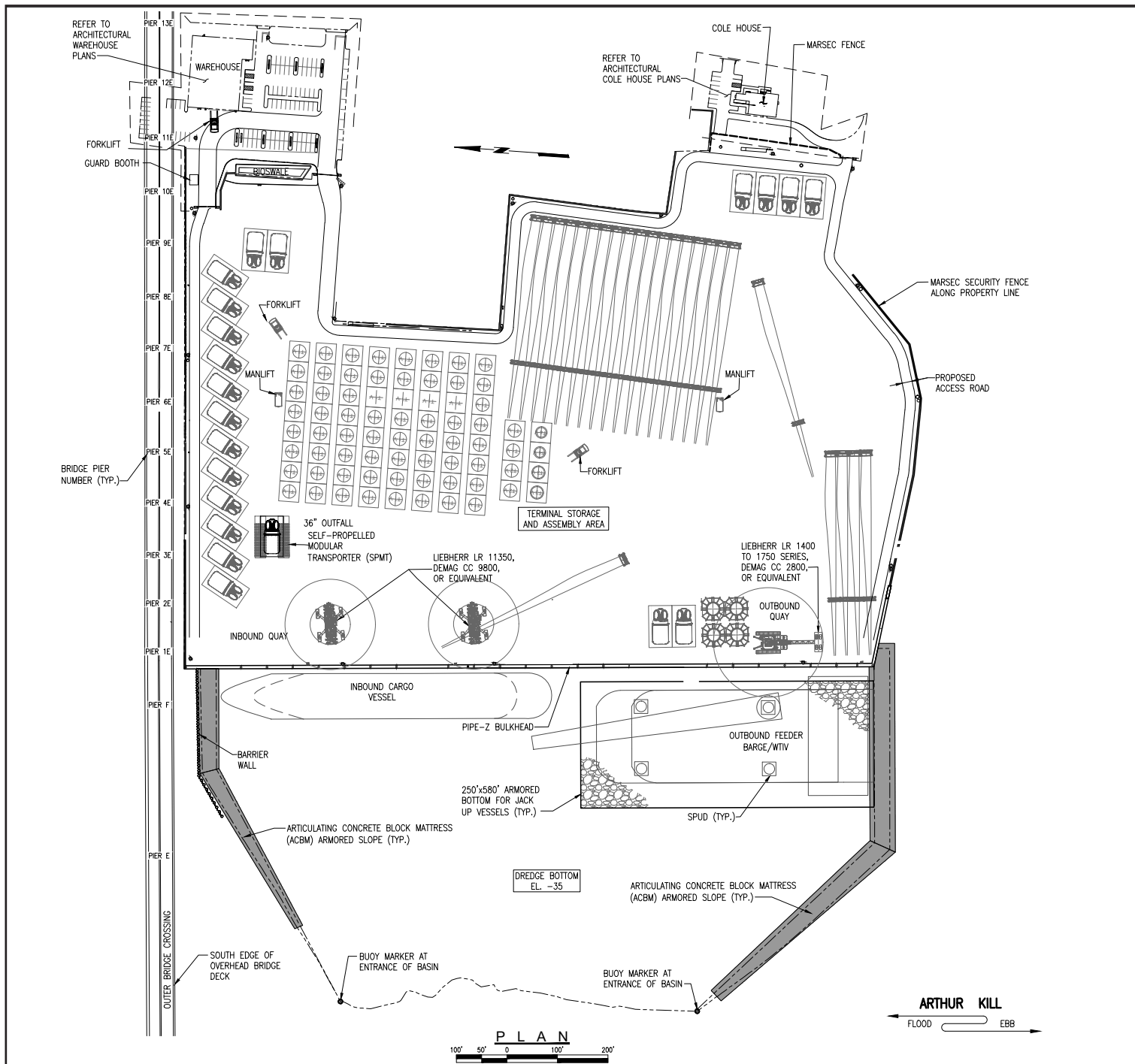
Upon completion, the Project Site would consist of a 1,365-ft quay and 28.5-acre Operations Area for unloading, staging, assembling, pre-commissioning, and loading out WTGs and other OSW components onto transportation and installation vessels prior to offshore construction.

As shown in the illustrative site plan in **Figure 3**, the northern portion of the quay would accommodate the inbound delivery of components via cargo vessels and barges. The southern half of the quay would be designed to berth next-generation Wind Turbine Installation Vessels (WTIVs) and other jack-up vessels capable of outbound transport of multiple WTGs, including blades, turbines and fully assembled towers. Upland facilities would primarily consist of administrative offices, office space for tenants, and an enclosed warehouse. A total of approximately 121 surface parking spaces would be provided on the Project Site, with 109 surface parking spaces for the tenant area and 12 surface parking spaces for the Cole House (refer to **Figure 3**). As currently envisioned, access to the Project Site would be provided by four curb cuts on Arthur Kill Road which borders the site on the east. Two new curb cuts on Arthur Kill Road south of its intersection with South Bridge Street would provide access to the proposed accessory tenant warehouse/office building and parking area on the northern portion of the Project Site. A new curb cut at the intersection of Richmond Valley Road and Arthur Kill Road would provide access to a private driveway providing emergency access and egress to the Cole House and the southern portion of the Project Site. The Cole House would be primarily accessed from an existing curb cut located just north of the house along Arthur Kill Road. Lastly, in conjunction with development of the Proposed Project, it is anticipated that the segments of Arthur Kill Road abutting the Project Site near South Bridge Street and near Richmond Valley Road would be extended to the mapped street line, including the construction of new sidewalks.

Seaward of the quay along the Bulkhead Line, a ship basin would be created by dredging approximately 18 acres, installing armoring on the Dredge Basin side slopes, and installing a fender rack on the northern side of the Dredge Basin to provide protection for Outerbridge Crossing from vessel impacts.

The Proposed Project includes a two-story (approximately 48-foot-tall including mechanical bulkhead) on-site tenant warehouse and office building with approximately 22,472 gsf, located at the northeast corner of the Project Site (refer to illustrative site plan in **Figure 3**), and the adaptive reuse of the existing two-story (33-foot-tall) 4,212 gsf Cole House at the southeast corner of the site. The warehouse would be used for storage of tools, spare parts and consumables. At the southeast corner of the Project Site, the existing Cole House and surrounding natural landscaped area would be preserved to the maximum extent possible and adaptively reused as the owner's office area and an educational visitor area. The Cole House would be preserved and aesthetically/structurally rehabilitated and improved to meet all code requirements to the maximum extent possible. The visitor area at the Cole House is expected to provide a public observation deck on the second floor and several rooms on the first floor dedicated to the history of the house, the West Shore of Staten Island, the history of the site, and information about the offshore wind industry and workforce and educational training opportunities in New York.

The WTG components are expected to be delivered to AKT by cargo vessels or barges to be loaded in, handled, stored, preserved, pre-commissioned and assembled before being positioned at quayside and loaded out. In addition to the WTG components, various equipment will also be handled and stored at the facility including empty transport frames, installation tools, and shipping containers. Other offshore wind



Source: T. LaPorta Architect, PC

components such as foundations, cable, and tools and equipment used for other aspects of offshore wind construction and operations may also be handled at the facility, although use for WTG handling would be the primary function of the facility.

Employment at the Project Site would vary depending on a number of factors including the size of a tenant's off-shore wind farm project, the phase of project development, the length of the installation period, and the installation methodology and number of vessels employed. Based on information provided by a potential tenant, it is anticipated that peak employment would occur during a wind farm project's pre-assembly/offshore installation phase. During this phase, the facility would operate 24 hours per day, seven days per week, and it is anticipated that up to 200 tenant workers (160 site workers and 40 office workers) would be employed at the Project Site each day. (There would be fewer tenant workers on-site each day during other project phases which would involve site mobilization and demobilization.) It is anticipated that tenant workers would be divided equally between two 12-hour shifts – 6:00 a.m. to 6:00 p.m., and 6:00 p.m. to 6:00 a.m. In addition to tenant workers, approximately four site security and three management staff are also expected to work at the Project Site each day. Security personnel would work in shifts to ensure 24/7 coverage, while management staff would typically work normal weekday business hours (i.e., 9 a.m. to 5:00 p.m.).

A conceptual layout of the AKT facility's functional areas is shown in **Figure 4** and each area is discussed below. The final layout of each functional area will be determined during the course of design.

Dredge Basin

The Proposed Project includes the dredging of an approximately 18-acre navigable Dredge Basin to a depth of -36 ft NAVD88 (including 1 ft over-dredge allowance) from the quay located along the Bulkhead Line to the NY/NJ State Boundary. The Dredge Basin is designed to allow cargo vessels and WTIVs to access the berths at the facility with any tug assistance that may be required for vessels berthing at and exiting the Project Site.

Inbound Quay

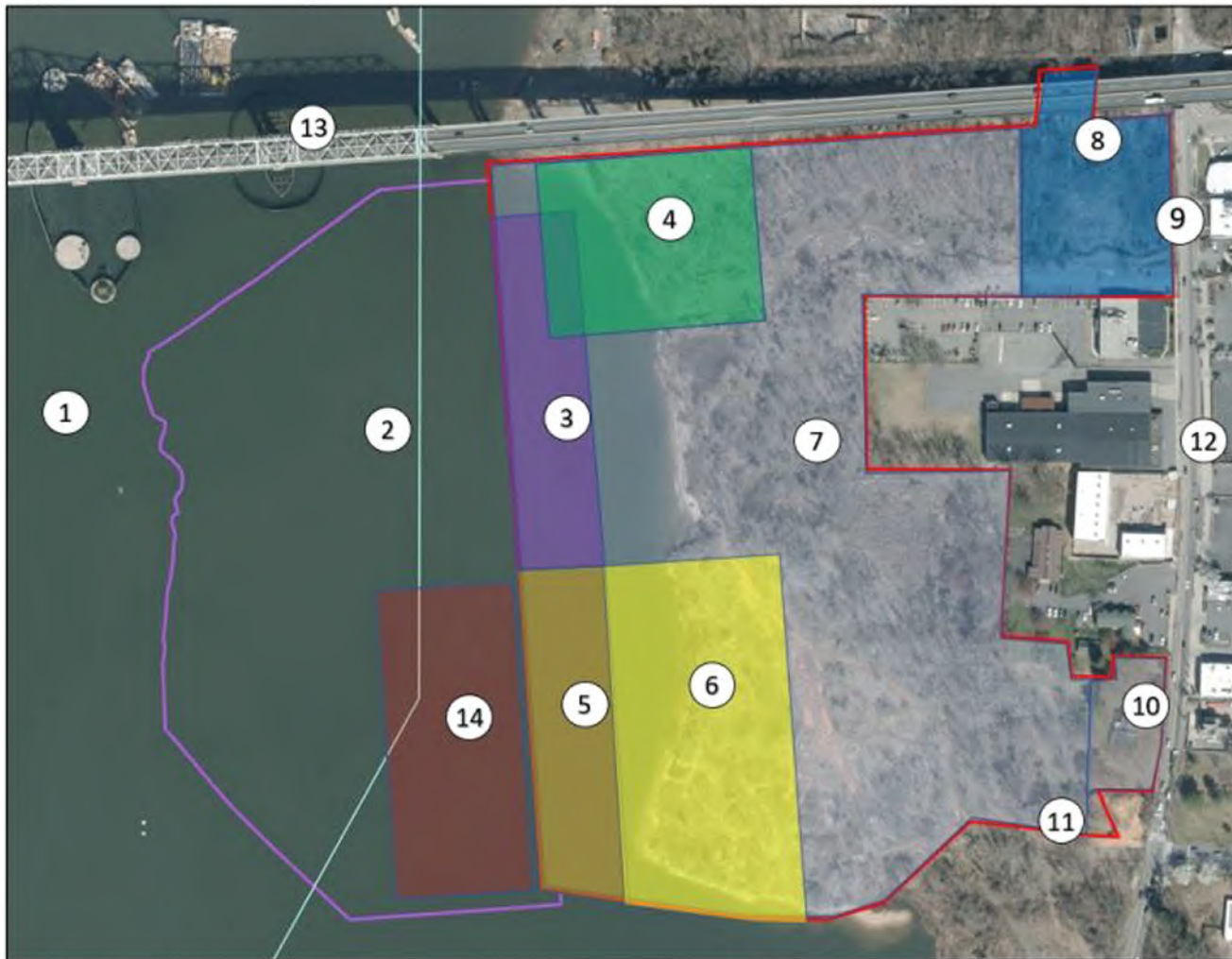
The OSW components would be delivered to the Inbound Quay by heavy lift cargo vessels or barges. Heavy lift cargo vessels (or deck cargo carrier vessels) would be unloaded using the ship's gear to the greatest extent possible; onshore cranes would be used to unload components like nacelles whose loads may exceed the capabilities of ships gear. Barges would be unloaded using onshore cranes. The approximately 3-acre Inbound Quay would be filled to achieve the required grades of the Proposed Project.

Inbound Assembly/Storage Area

Before some OSW components are stored at the storage area within the Project Site, they may require initial assembly work (for example, nacelle hub assembly or tower "upending" and storage frame installation). This area may be used for this purpose, or it may be used as a storage area. The Inbound Assembly/Storage Area would be filled to achieve the required grades of the Proposed Project.

Storage Area

OSW components would likely be moved from the Inbound Quay or Inbound Assembly/Storage Area to the storage area, which would comprise approximately 23 acres. Handling would be typically done using self-propelled modular transporters (SPMTs) or crawler cranes. The storage area would be expected to be used for storing WTG main components (nacelles, tower sections and blades) prior to assembly and loadout. Tower sections, blades, and nacelles are expected to be stored on their transport frames in the horizontal position. Tower sections may also be stored in the vertical position on storage frames, and



- | | |
|--------------------------------------|--|
| 1. Arthur Kill | 8. Tenant Area (Warehouse & Office) |
| 2. Dredge Basin | 9. Main Entrance |
| 3. Inbound Quay | 10. Owner Area (Office & Visitor Center) |
| 4. Inbound Storage and Assembly Area | 11. Secondary Gate |
| 5. Outbound Quay | 12. Arthur Kill Road |
| 6. Pre-Assembly Area | 13. Outerbridge Crossing |
| 7. Storage Area | 14. Jack-up Vessel Pad |

blades may be stacked in racks up to 3 units high and 3 units wide, depending on design. Portions of the Storage Area would be filled to achieve the required grades of the Proposed Project.

Outbound/Pre- Assembly Area

Prior to loadout, it is likely that WTG tower sections would be assembled vertically to some extent. This could involve the assembly of between 2 and 5 sections of each tower into a single stack, or into a split tower containing 1 to 3 sections each. If the tower sections were stored on site in a horizontal position, this area would also be used to upend each tower section into a vertical position. The assembled tower sections would also be positioned on storage frames within this area. The Assembly Area bearing capacity would accommodate the presence and use of heavy lift crawler cranes and SPMTs to move WTG towers, nacelles, blades, and other components, and to perform lifting and handling activities within the Project Site and onto outbound vessels. The Outbound-Pre-Assembly Area would be filled to achieve the required grades of the Proposed Project.

Outbound Quay

Components would be handled and loaded onto the outbound vessels using the ship's gear or shore-based cranes. Shore-based cranes are required for loading of components onto feeder barges or jack-up feeder vessels, which do not have cranes capable of performing the lifts. WTIVs are likely to use onboard cranes to lift components from the Outbound Quay and onto their decks. The approximately 2.5-acre Outbound Quay would be filled to achieve the required grades of the Proposed Project.

Jack-up Vessel Pad

The facility would be designed to accommodate vessel jacking operations at the Outbound Quay. Jack-up vessels would be permitted to jack up as close as 16 ft from the quay wall. Due to the weight of the spud cans and the vessels and the geotechnical conditions present in this area, it would be necessary to reinforce the seabed to accommodate jacking operations. This would be accomplished through over dredging at the Outbound Quay (approximately 10 ft additional dredging) in a 400 ft by 100 ft area and installing a thick layer of riprap stone in a dense stone mat.

Owner Office and Visitor Area

The Cole House and the natural landscaped area immediately surrounding it, comprising approximately one acre would be preserved to the maximum extent possible and the building would be adaptively reused as an educational visitor area and "Owner's Area." The two-story (33-foot-tall) approximately 4,212 gsf Cole House would be aesthetically and structurally rehabilitated to meet NYC 2022 Building Code requirements. The visitor area at the Cole House would be expected to include a public observation deck on the second floor and several rooms on the first floor dedicated to the history of the house, the Project Site, the West Shore of Staten Island, the unique and important role of AKT in enabling wind farm construction, and information about the OSW industry, as well as workforce and educational training opportunities in New York. Approximately 12 parking spaces would be located in this area. There would be a minimal increase in pavement in this area. There would be no filling of this area of the Project Site as part of the Proposed Project. The Cole House and its parking area would be primarily accessed from an existing curb cut located just north of the house along Arthur Kill Road. A new curb cut at the intersection of Richmond Valley Road and Arthur Kill Road would provide emergency access and egress to the Cole House and the balance of the Project Site.

Tenant Area (Warehouse and Office)

The new approximately 2.5-acre Tenant Area, including the two-story (48-foot-tall including mechanical bulkhead) approximately 22,472 gsf warehouse/office building and parking area (with approximately 109 spaces), is located out of the tidal wetland adjacent area. However, the proposed tenant space requires the backfilling of the freshwater wetlands. The area would be filled and graded to provide a transition from the Storage Area elevation to the Arthur Kill Road elevation. As noted above, the warehouse would be used for storage of tools, spare parts and consumables, and the office space would be ancillary to the port facility and used by the tenant's administrative staff. Two new curb cuts on Arthur Kill Road south of its intersection with South Bridge Street would provide access to the tenant warehouse/office and parking area on the northern portion of the Project Site.

E. PROPOSED ACTIONS

The Proposed Project requires the following discretionary approvals from the CPC:

City Map Change

A change to the City Map is being proposed to eliminate, discontinue, and close the segment of Richmond Valley Road west of Arthur Kill Road. Although this street segment is currently mapped, it is not built and appears to be comprised of portions of Block 7983, Lots 100, 110 and Block 7632 150 on . This action is necessary as construction of the Proposed Project cannot take place within the bed of a mapped street. The City Map amendment is necessary to clear encumbrances from the property and facilitate the development of the site.

Zoning Text Amendment

Zoning Text Amendment to Article X, Chapter 7 of the Zoning Resolution is being proposed to establish goals for the SRD related to sustainability, resiliency, climate and clean energy objectives (ZR § 107-00 – General Purposes); to modify tree removal regulations (ZR § 107-64 – Removal of Trees); and to modify topography modification regulations (ZR § 107-65 – Modifications of Existing Topography).

Zoning Special Permit

Special Permit pursuant to ZR § 107-73 (Exceptions to Height Regulations), to allow a structure having a height of greater than 50 feet that would otherwise be prohibited under ZR Section 107-43 (Maximum Height for Buildings or Structures). The special permit would allow for the installation of light poles with a maximum height of approximately 150 feet. The proposed light poles are needed to allow for 24/7 operations at the proposed facility as necessary for vessel operations, and therefore the modification of height regulations related to the proposed lighting structures on site is necessary for safety and operations.

Zoning Authorizations

Three zoning authorizations are being sought:

- a) Authorization pursuant to ZR §107-64 (Removal of Trees), as modified, to allow the removal of approximately 1,209 trees of six-inch caliper or more, removal of which would otherwise be prohibited under ZR §107-321. The design of the Proposed Project will require a CPC authorization to allow the removal of trees that would otherwise impair the usefulness of the Project Site as a staging and assembly area for wind turbines;
- b) Authorization pursuant to ZR § 107-65 (Modification of Existing Topography), as modified, to allow topographic modification of greater than two feet that would otherwise be prohibited under ZR § 107-312. The authorization would allow cut and fill in areas located outside proposed building footprints, driveways or utilities, or to meet mapped grades of a street. The proposed amount of cut will total approximately 45,883 cubic yards and fill will total approximately 381,097 cubic yards. Due to the unavoidable design requirements of the proposed wind turbine storage and assembly facility, the Proposed Project will not comply with the existing requirements of ZR §107-65. The facility requires a large flat surface for assembly of the wind turbines on land. The current grade of the Project Site does not allow for this without topographic modification.
- c) Authorization pursuant to ZR §107-68 (Modification of Group Parking Facility and Access Regulations) to allow more than 30 accessory off-street parking spaces. This modification is necessary to provide efficient vehicular circulation and meet anticipated parking demand for the Proposed Project. This authorization would allow for a total of 121 accessory parking spaces that are proposed at the site.

Landfill Action

A landfill action is being sought to add approximately 8.77 acres to create a quay along the Arthur Kill waterway. The landfill acreage would be located in the area up to, but not beyond, the bulkhead line and would therefore not increase the size of the zoning lot's upland lot, and no additional floor area would be generated. This action is necessary to meet the design requirements of the Proposed Project, which has substantial space requirements to allow the loading/unloading, assembly, and storage of wind turbine components, and is necessary to facilitate the commercial viability of the Proposed Project.

Other Discretionary Approvals

The Applicant is also seeking a number of other City, State, and Federal discretionary actions. The Proposed Project would require approvals from, but not necessarily limited to, NYSDEC, USACE, DSNY, NYSDOS, and NYSOGS. This would include NYSDEC tidal wetland permit and water quality certification, and USACE permits for freshwater wetland and for discharge of fill material into the waters of the U.S., as well as NYSDEC SPDES individual permits for operational and construction discharges. With respect to NYSDEC's tidal wetlands jurisdiction, the Proposed Project requires a permit for activities in wetlands and wetland adjacent areas for the proposed AKT. Preliminary discussions with NYSDEC regarding the Proposed Project have taken place and coordination with both the NYSDEC and USACE will continue throughout the environmental review and permit review processes.

F. PURPOSE AND NEED FOR THE PROPOSED ACTIONS

The Proposed Actions are being requested to allow the development of the Proposed Project, a purpose-built, state-of-the-art, unrestricted port within New York Harbor for the staging, assembly and pre-commissioning of WTGs and other OSW components needed for the construction of OSW farms to be

built (independently from the Proposed Project) in the New York Bight and off the East Coast of the United States. The proposed port is necessary for NYS to meet its clean energy goals.

With passage of the Climate Leadership and Community Protection Act of 2019 (CLCPA), New York has committed to develop, build, and interconnect 9 gigawatts (GW) of offshore wind energy capacity by 2035. Achieving this requires the creation of an offshore wind energy supply chain based in New York State, at the center of which must be port infrastructure that can efficiently and effectively support the construction of offshore wind energy projects in and around the New York Bight.

Staging and assembly ports are essential to the cost-effective construction and maintenance of offshore wind farms. OSW components are manufactured at various locations throughout the United States and globally and must be transported first to a staging port near an offshore wind project site (using conventional cargo vessels or barges) for staging, assembly, and pre-commissioning prior to being transported offshore for installation using specialized installation vessels. At present, there is insufficient available staging and assembly port capacity for New York to come even close to construct at least 9 GW of OSW capacity by 2035, as mandated by the CLCPA.

Developing sufficient OSW staging and assembly port capacity in New York is also critical to New York's stated goal of becoming a major supply chain hub for the OSW energy industry. Given its central location to East Coast Wind Energy Areas (WEAs), close proximity to NY Bight WEAs, unique technical attributes, and proximity to a variety of complementary ports and prospective OSW manufacturing sites, the Proposed Project would likely attract significant additional investment in OSW manufacturing and ancillary supply chain facilities around New York Harbor and up the Hudson River. The Proposed Project would be a catalyst for the development of these businesses and the benefits they would bring to the City and State, driving business to local contractors and suppliers and creating thousands of additional jobs for the workers of New York.

Beyond New York's critical need for additional staging and assembly port capacity, it is well established that OSW component assembly and pre-commissioning activities performed onshore are substantially less expensive and involve significantly less risk than performing these activities offshore, which entails extended use of expensive vessels, heightened exposure to weather delay and greater risk of damage to property and harm to workers. Maximizing on-shore assembly work, using best-in-class jack-up vessels for WTG transportation, and supporting the deployment of floating OSW WTGs all require a port that has no air draft restrictions. Given the height of the assembled towers and the legs on the jack-up installation vessels, Arthur Kill Terminal is the only site in New York State qualified for that role.

The Proposed Project has been planned and would be designed in coordination with offshore wind farm developers, OEMS and contractors to accommodate the most advanced WTG technology expected to be available for the next 15+ years that can support the staging and assembly of approximately 1,000-2,000 MW of WTGs per year. This is consistent with the regional demand for offshore wind staging beginning in the mid-2020s and essential to reaching 9 GW by 2035.

Without the Proposed Project, New York would be forced to either use ports in other states for WTG staging and assembly, if available, or to use suboptimal methods for performing WTG installation that entail significantly greater risk and cost and that in any event would entail significant delays in reaching the State's 9 GW mandated goal. Moreover, the State's objective of building a dominant offshore wind energy supply chain would be severely challenged. It should also be recognized that 9 GW is only the first of what is likely to be an increasing need for offshore wind energy in New York State.

The State's Climate Action Council has recently acknowledged that for the State to reach its overall renewable energy and emission reduction goals, the State will need approximately 20 GW of offshore wind energy, a conclusion affirmed by the New York State Energy Research and Development Authority (NYSERDA). That would require OSW energy farms in deeper waters that will require floating WTGs that must be assembled in-port and towed offshore, and AKT would be the only port in New York capable of deploying floating WTGs.

The Proposed Project would be the only marine terminal in New York to have all the essential attributes of a state-of-the-art WTG assembly and staging port that New York must have, including:

- Unrestricted overhead clearance – which enables all types of wind turbine transport and installation vessels to access ports directly and load fully assembled and pre-commissioned WTG towers, minimizing construction and commissioning time, complexity, risks, and costs offshore.
- Proximity to OSW project sites – which enables shorter installation campaigns resulting in vessel utilization savings, fuel savings, and emissions savings.
- Heavy load bearing capacity of no less than 5,000 pounds per square foot (PSF) – which allows for safe and efficient handling of large OSW components within the port, including the components for the larger WTGS still in the design stage.
- A quay of no less than 1,300 ft in length – which enables simultaneous inbound and outbound vessel operations.
- Combined port operations area and supporting facilities of at least 30 acres – which enables the buffering and storage of multiple sets of large OSW components sufficient to ensure continuous progress with offshore construction activities.
- Deep draft channel – which allows for safe vessel access and egress.

As such, the Project Site is ideally located to serve as the epicenter of offshore wind component staging and assembly on the East Coast. Located seaward of all bridges in the region and along the deep draft Arthur Kill channel, the Project Site would allow unrestricted and safe access for all types of vessels that may be involved in offshore wind activities, including the large jack-up installation vessels preferred for offshore wind construction and maintenance. Given the Project Site's location along the waterfront and within the SRD, and the mapped (but unbuilt) status of Richmond Valley Road within the Project Site, the Proposed Actions, listed in Section E above, are necessary to enable the Applicant to develop the proposed AKT.

G. ANALYSIS FRAMEWORK FOR ENVIRONMENTAL REVIEW

The 2021 *CEQR Technical Manual* will serve as the general guide for the methodologies and impact criteria for evaluating the Proposed Project's potential effects on the various environmental areas of analysis. The EIS will disclose the Proposed Project's potential significant adverse impacts on the environment. As it is anticipated that the Proposed Project would be built and operational in 2025, the technical analyses and consideration of alternatives will include descriptions of existing conditions, conditions in the future without the Proposed Project (the No-Action Condition in 2025), and conditions in the future with the Proposed Project (the With-Action condition in 2025). The incremental difference between the No-Action and With-Action conditions is analyzed to determine the potential significant adverse environmental effects of the Proposed Project.

Analysis Year

Assuming project approvals are granted by late 2023, construction is expected to start in late 2023. A construction timeframe developed for the Proposed Project estimates approximately 20 to 23 months of construction. Thus, construction is expected to be completed in late 2025 followed by occupancy by the end of the year. Accordingly, this environmental review will use 2025 for analysis of future conditions consistent with *CEQR Technical Manual* guidance.

The Future Without the Proposed Actions (No-Action Condition)

In the future without the Proposed Project (the No-Action Condition), it is assumed for the purposes of conservative analysis that there will not be any new development on the Project Site, which consists of vacant land, wetlands, an unbuilt street, and one residential structure. Therefore, conditions on the Project Site would not change from existing conditions. Although the existing Cole House is a non-conforming use, because the structure was built in the mid-19th century and predates zoning, it is legally non-conforming and can remain. As such, the existing 4,212 gsf residential building on Block 7632, Lot 6, which is an existing legal non-conforming use, will remain in the No-Action Condition (see **Table 3**).

The Future With the Proposed Actions (With-Action Condition)

Under the With-Action scenario, the Project Site would be redeveloped as outlined in Section D above. As described above, and summarized in **Table 3** below, the Project Site would be redeveloped with an approximately 32.5-acre state-of-the-art port facility designed for the staging, assembly and pre-commissioning of WTGs and other OSW components before they are loaded onto vessels for transportation to and installation at offshore wind farms. The Proposed Project also includes accessory uses to the terminal, including an on-site tenant warehouse/office with approximately 22,472 gsf, and the adaptive reuse of the existing 4,212 gsf Cole House as the owner's office area and visitor area.

TABLE 3
Comparison of No-Action and With-Action Conditions for Project Site

Land Use	No-Action Condition	With-Action Condition	Net Increment
Residential			
Single Family Home (Cole House)	4,212 gsf (1 DU)	0 gsf (0 DU)	-4,212 gsf (-1 DU)
Vacant / Underutilized Land			
Vacant Upland Area	1,029,172 sf	--	- 1,029,172sf
Freshwater Wetland	144,183 sf	--	- 144,183 sf
Submerged Land (between shoreline & Federal Bulkhead Line)	387,841	--	- 387,841 sf
Arthur Kill Terminal – OSW Staging Port			
OSW Storage/Assembly Area (sf of open storage area)	--	1,015,476 sf	+1,015,476.2 sf
OSW Tenant Accessory Warehouse/Office (new building)	--	22,472 gsf ¹	+ 22,472 gsf
Owner Office and Visitor Area (Cole House)	--	4,212 gsf	+4,212 gsf
Accessory Parking (at-grade spaces)	--	121 ²	+121
Notes:			
¹ Existing Cole House building would remain in the With-Action, however use would change from residential to AKT Owner office and Visitor Area (listed separately in table).			
² Includes 15,266 gsf of warehouse space and 7,206 gsf of accessory tenant office space.			
² Includes 109 spaces in the tenant area and 12 spaces at the Cole House (owner area).			

The Applicant's Proposed Project would be limited in height, density, and bulk by the SRD authorizations and special permit granted by the CPC. Any development different/larger than this would require further discretionary actions. Therefore, the Applicant's Proposed Project would be considered the most reasonable and conservative With-Action scenario, and represents the reasonable worst case development scenario (RWCDs) for environmental analysis purposes.

H. PROPOSED SCOPE OF WORK FOR THE EIS

Because the Proposed Project could potentially affect various areas subject to environmental assessment and was found to have the potential for significant adverse impacts, pursuant to the EAS and Positive Declaration, an Environmental Impact Statement (EIS) will be prepared for the Proposed Project that will analyze all technical areas requiring analysis beyond the Environmental Assessment Statement.

The EIS will be prepared in conformance with all applicable laws and regulations, including SEQRA (Article 8 of the New York State Environmental Conservation Law) and its implementing regulations found at 6 NYCRR Part 617, New York City Executive Order No. 91 of 1977, as amended, and the Rules of Procedure for CEQR, found at Title 62, Chapter 5 of the Rules of the City of New York. The EIS will follow the guidance of the 2021 *CEQR Technical Manual*, and will contain:

- A description of the development resulting from the Proposed Actions and its environmental setting;
- A statement of the environmental impacts of the Proposed Actions, including short- and long-term effects and typical associated environmental effects;
- An identification of any adverse environmental effects that cannot be avoided if the Proposed Actions are implemented;
- A discussion of reasonable alternatives to the Proposed Actions;
- An identification of irreversible and irretrievable commitments of resources that would be involved in the Proposed Actions should they be implemented; and
- A description of mitigation measures proposed to eliminate or minimize any significant adverse environmental impacts.

Based on the conclusions of the EAS, in accordance with the *CEQR Technical Manual*, there is no potential for significant adverse impacts to socioeconomic conditions, community facilities, open space, shadows, solid waste and sanitation services, or energy due to the Proposed Project, and, as a result, analysis for those environmental areas would not be required in the EIS. In addition, a greenhouse gas (GHG) assessment is not warranted per *CEQR Technical Manual* guidance: however, the EIS will include a qualitative discussion of the Proposed Project's consistency with the City's GHG reduction. All other CEQR technical areas warrant assessment and would therefore be included in the EIS. The specific technical areas to be included in the EIS, as well as their respective tasks and methodologies, are described below.

Task 1: Project Description

The first chapter of the EIS will introduce the reader to the discretionary actions required to facilitate the Proposed Project, and set the context in which to assess impacts. This chapter will contain a description of the Proposed Actions, Proposed Project, and Project Site, including background and/or history; a statement of the purpose and need for the Proposed Actions; key planning considerations that have shaped the current proposal; and discussion of the approvals required, procedures to be followed, and the role of the EIS in the process. In addition, the Project Description chapter will present the planning

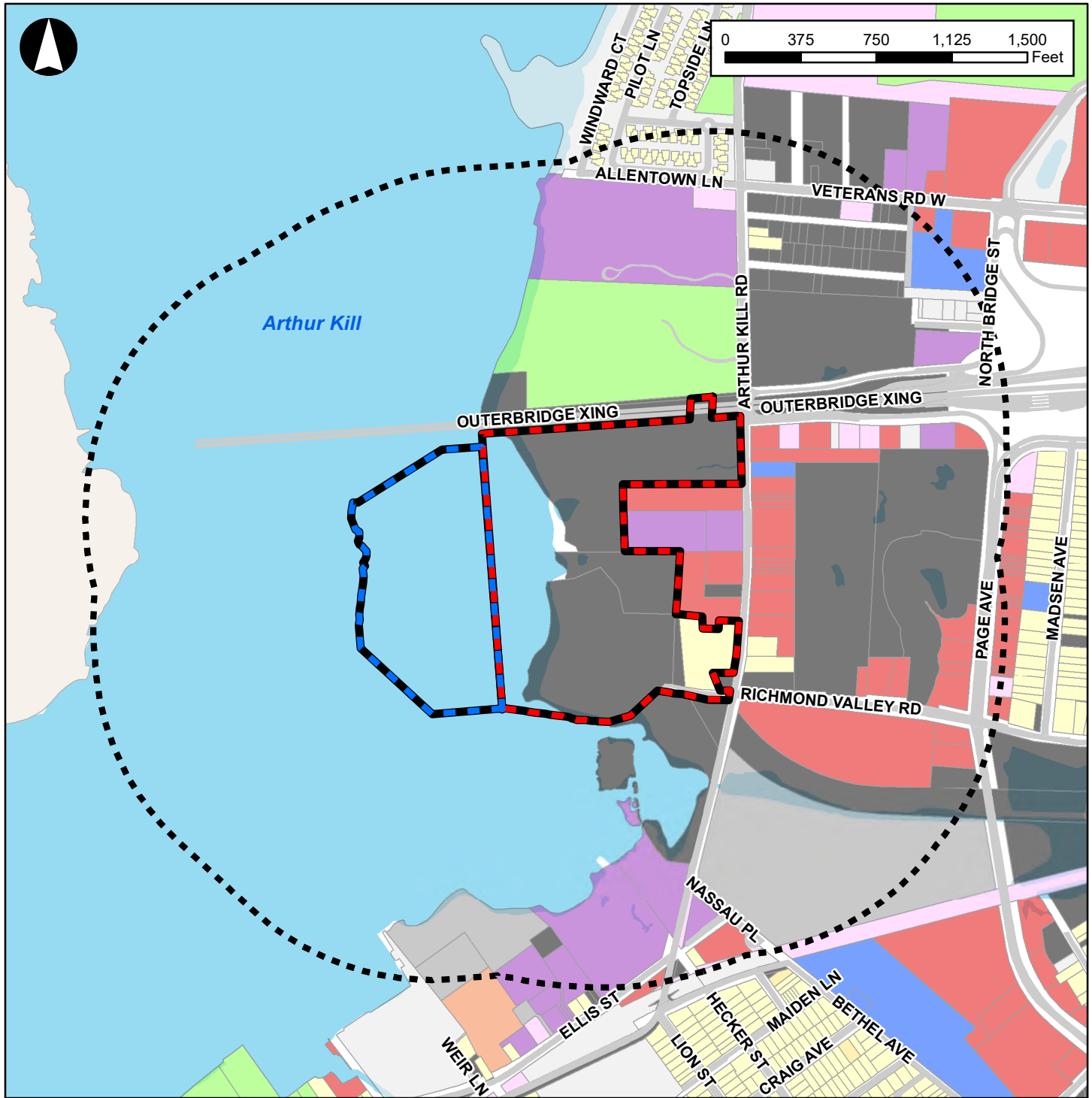
background and rationale for the actions being proposed and summarize the Proposed Project for analysis in the EIS. Any need for environmental requirements or commitments as part of the Proposed Actions will be described.

The section on approval procedures will explain the ULURP process, its timing, and hearings before the Community Board, the Borough President's office, the CPC, and the New York City Council. The role of the EIS as a full-disclosure document to aid in decision-making will be identified and its relationship to ULURP and the public hearings described, as well as its relationship to other permitting and approvals processes.

















Task 2: Land Use, Zoning, and Public Policy

A land use analysis characterizes the uses and development trends in the area that may be affected by a proposed project, describes the public policies that guide development in the area, and determines whether a proposed project is compatible with those conditions and consistent with these policies. In addition to considering the Proposed Project's effects in terms of land use compatibility and trends in zoning and public policy, this chapter will also provide a baseline for other analyses. The primary land use study area will consist of the Project Site, where the potential effects of the Proposed Project would be directly experienced. The secondary land use study area would include the neighboring areas within an approximate ¼-mile radius from the Project Site, as shown in **Figure 5**, which could experience indirect impacts. The analysis will include the following subtasks:

- A brief development history of the Project Site (primary study area) and its surroundings (secondary study area).
- A description of land use, zoning, and public policy in the study areas discussed above. Recent development trends in the area will be noted. Other public policies that apply to the study areas will also be described, including any applicable Special Zoning Districts and any formal neighborhood or community plans.
- Based on field surveys and prior studies, an identification and description (verbally and graphically) of predominant land use patterns for the balance of the study area. The chapter will also describe recent land use trends in the study area and identify major factors influencing land use trends.
- A map and description of existing zoning and recent zoning actions in the study area.
- A list of future development projects in the study area that are expected to be constructed by the 2025 analysis year and may influence future land use trends, as well as an identification of pending zoning actions or other public policy actions that could affect land use patterns and trends in the study area. Based on these planned projects and initiatives, an assessment of future land use and zoning conditions without the Proposed Actions (No-Action Condition) will be provided.
- A description of the Proposed Actions and an assessment of the impacts of the resultant Proposed Project on land use and land use trends, zoning, and public policy. The chapter will also consider the Proposed Project's compatibility with surrounding land use, consistency with public policy initiatives, and effect on development trends and conditions in the area.
- As the Project Site is located in the City's designated Coastal Zone, an assessment of the Proposed Project's consistency with the Waterfront Revitalization Program (WRP) will be provided. This assessment will begin with the completion of the WRP Consistency Assessment Form (CAF), which identifies the WRP policies that are relevant to the Proposed Project. An explanation of the Proposed Project's consistency with each noted policy will be provided, which will determine whether the Proposed Project is supportive, neutral, or detrimental towards the achievement of that policy. Where needed, this assessment will draw upon other technical analyses in the EIS.



Legend

- | | | | | |
|---|-----------------|--|---|--|
|  Project Site | Land Use |  Mixed Commercial/Residential Buildings |  Open Space | |
|  Dredge Basin | |  One & Two Family Buildings |  Commercial/Office Buildings |  Parking Facilities |
|  Project Area | |  Multi-Family Walkup Buildings |  Industrial/Manufacturing |  Vacant Land |
|  1/4-mile Radius | |  Multi-Family Elevator Buildings |  Transportation/Utility |  All Other or No Data |
| | |  Public Facilities & Institutions | | |

Task 3: Historic Resources

According to the *CEQR Technical Manual*, a historic and cultural resources assessment is required if a project would have the potential to affect either archaeological or architectural resources. As discussed in Attachment B to the EAS, although an early-19th century house, known as the Cole House, is located on the Project Site, LPC has previously rejected an application to designate the Cole House as a City landmark, and in 2016 SHPO determined that it is not eligible for listing on the State/National Registers of Historic Places. However, the Outerbridge Crossing, which has been determined as eligible for listing on the State/National Register of Historic Places (S/NR), is located adjacent to the Project Site and therefore an assessment of historic architectural resources will be provided in the EIS. As the project will be seeking a permit from NYSDEC and USACE, consultation with the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) will be required pursuant to Section 106 of the National Historic Preservation Act (NHPA), and 36 CFR Part 800 (Protection of Historic Resources). The Section 106 process involves consultation with interested parties including the SHPO, Tribal Historic Preservation Officers (THPOs) or Indian Nation-designated Section 106 representatives, local governments and the public.

As part of a previous proposal for the Project Site, the potential for significant archaeological resources on-site was identified. The archaeological assessment for the Proposed Project will adhere to guidance provided in the historic resources chapter of the 2021 *CEQR Technical Manual* and will include archaeological testing to confirm the presence or absence of archaeological resources on the Project Site. Based on the results of the testing, additional work may include archaeological excavation and/or mitigation depending upon what is found and the likely impact of the proposed work on those resources. All archaeological work on the Project Site will be conducted in consultation with LPC and SHPO.

The historic and cultural resources chapter will be prepared in accordance with the *CEQR Technical Manual*, and will include the following:

- An overview of the study area's history and land development.
- A summary of the conclusions and recommendations of all prior or current archaeological reports and investigations. All relevant reports and agency comment letters will be included as an appendix to the EIS.
- Map and description of designated architectural resources within a 400-foot study area from the Project Site. Consistent with the guidance of the *CEQR Technical Manual*, designated architectural resources include: New York City Landmarks, Interior Landmarks, Scenic Landmarks, and New York City Historic Districts; resources calendared for consideration as one of the above by LPC; resources listed on or formally determined eligible for inclusion on the State and/or National Registers of Historic Places, or contained within a district listed on or formally determined eligible for listing on the Registers; resources recommended by the New York State Board for listing on the Registers; and National Historic Landmarks.
- Based on other planned development projects, a discussion of any impacts on architectural and archaeological resources that are expected in the future without the Proposed Project.
- An assessment of the potential for the Proposed Project to have direct, physical impacts on architectural and/or archaeological resources, including the potential for any visual and contextual impacts on architectural resources. Potential impacts will be evaluated through a comparison of the No-Action Condition and the With-Action Condition. The analysis will include a description of any consultation undertaken with SHPO and LPC.

- If necessary, an identification of any measures that would be required to mitigate and/or reduce any potential significant adverse impacts on historic or cultural resources, in consultation with LPC and SHPO.

Task 4: Urban Design and Visual Resources

Urban design is the totality of components that may affect a pedestrian's experience of public space. An assessment of urban design and visual resources is appropriate when there is the potential for a pedestrian to observe, from the street level, a physical alteration beyond that allowed by existing zoning. When an action would potentially obstruct view corridors, compete with icons in the skyline, or would result in substantial alterations to the streetscape of the neighborhood by noticeably changing the scale of buildings, a more detailed analysis of urban design and visual resources would be appropriate. As the Proposed Project requires discretionary approvals related to site design, a preliminary assessment of urban design and visual resources will be provided in the EIS.

The urban design study area will be the same as that used for the land use analysis (delineated by a ¼-mile radius from the Project Site boundary). For visual resources, the view corridors within the study area from which such resources are publicly viewable will be identified. The preliminary assessment will consist of the following:

- Based on field visits, the urban design and visual resources of the directly affected area and adjacent study area will be described using text, photographs, and other graphic material, as necessary, to identify critical features, use, bulk, form, and scale.
- In coordination with Task 2, "Land Use, Zoning, and Public Policy," the changes expected in the urban design and visual character of the study area due to known development projects in the No-Action Condition will be described.
- Potential changes that could occur in the urban design character of the study area as a result of the Proposed Project will be described. Photographs and/or other graphic material will be utilized, where applicable, to assess the potential effects on urban design and visual resources, including views of/to resources of visual or historic significance and a three-dimensional representation of the future With-Action condition streetscape.

If warranted based on the preliminary assessment, a detailed urban design and visual resources analysis would be prepared in accordance with *CEQR Technical Manual* guidance. Examples of projects that may require a detailed analysis are those that would make substantial alterations to the streetscape of a neighborhood by noticeably changing the scale of buildings, potentially obstruct view corridors, or compete with icons in the skyline, as described in the *CEQR Technical Manual*. The detailed analysis would describe the Project Site and the urban design and visual resources of the surrounding area. The analysis would describe the potential changes that could occur to urban design and visual resources in the future with the Proposed Actions, in comparison to the future without the Proposed Actions, focusing on the changes that could negatively affect a pedestrian's experience of the area.

Task 5: Natural Resources

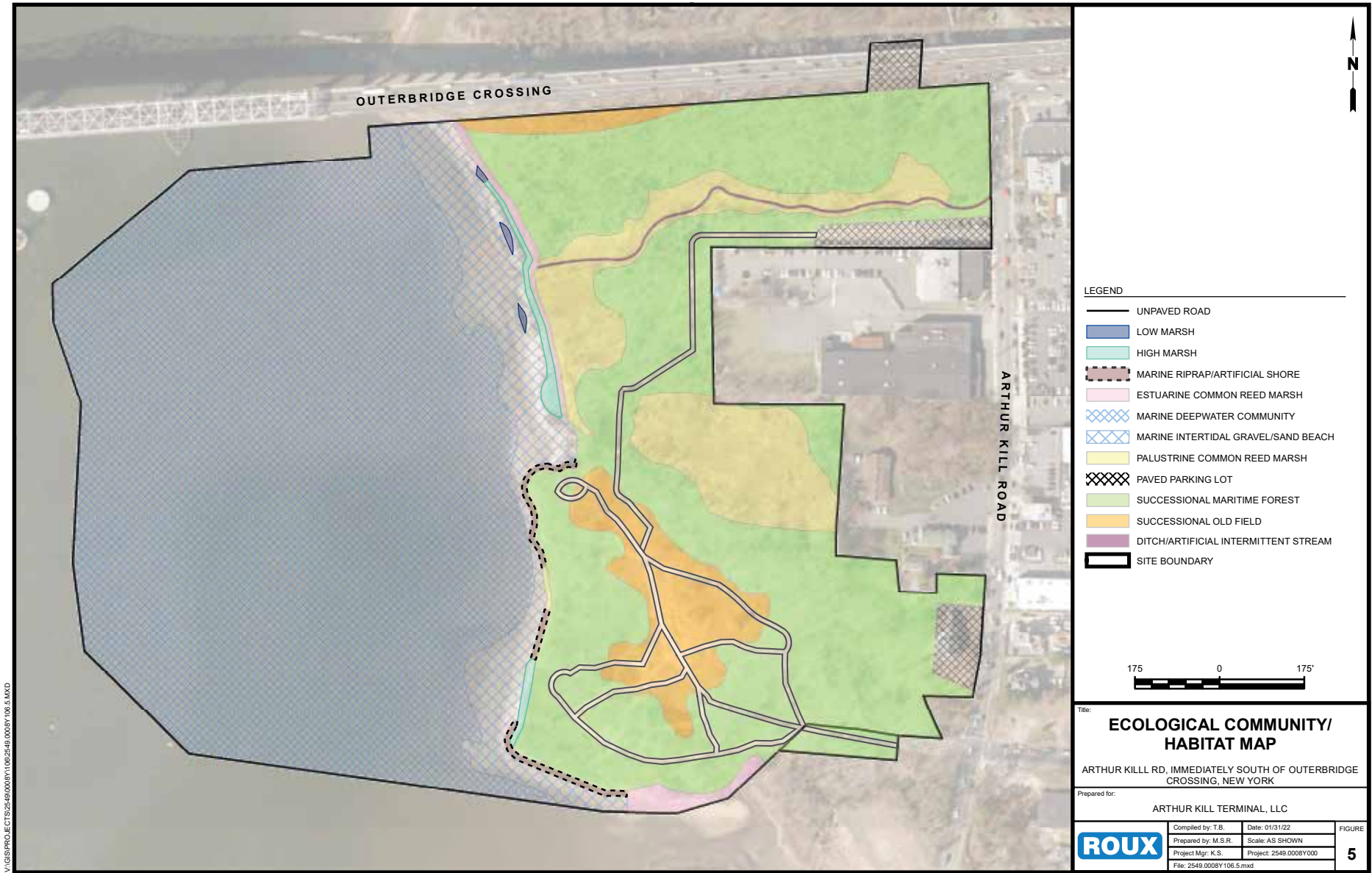
The *CEQR Technical Manual* states that there are two possibilities that determine if a natural resources assessment is appropriate: (1) there is the presence of a natural resource on or near the site of the project; and (2) a proposed project has the potential to cause disturbance of that resource. The *CEQR Technical Manual* defines natural resources as (1) the City's biodiversity (plants, wildlife, and other organisms); (2) any aquatic or terrestrial areas capable of providing suitable habitat to sustain the life processes of plants,

wildlife, and other organisms; and (3) any areas capable of functioning in support of the ecological systems that maintain the City's environmental stability.

Although there is evidence of prior disturbance, the Project Site is an undeveloped, vegetated site comprised of upland forest, old fields, tidal and freshwater wetlands. As the Proposed Project would result in disturbance to these resources during the construction and operational phases, a natural resources assessment will be provided as part of the EIS.

The EIS chapter will describe the existing natural resources within the defined Project Study Area shown in **Figure 6** such as topography/soils/coastal erosion, groundwater, floodplains (including Sea level rise and resiliency), wetlands/surface waters and terrestrial habitats, aquatic/benthic habitats, essential fish species and habitats, and terrestrial biota including rare, special concern, threatened and endangered species and special habitat areas. This description of existing natural resources will be developed on the basis of existing information from literature sources, information obtained from governmental and non-governmental agencies and field investigations. Field investigations will include a wetlands assessment conducted on the Project Site and reconnaissance and targeted plant and wildlife surveys conducted in accordance with the *2021 CEQR Technical Manual*, with emphasis on the potential areas of disturbance. The natural resources analyses will assess the potential for the construction and operation of the Proposed Project to impact these natural resources, including direct or indirect impacts. Impacts to habitats would be considered on the species and community levels. The EIS analyses will consist of the following:

- An identification of natural resources of concern to state, federal and city agencies, including those specified in the SRD and WRP Outerbridge Shorelands Recognized Ecological Complex (REC), and coastal zone area. It should be noted that this part of the Arthur Kill is not within the designated Significant Coastal Fish and Wildlife Habitats (SCFWH).
- A definition of the existing site conditions based on information available from published literature and sources and data on current site conditions. Baseline vegetation and wildlife data for the entire Project Study Area (as defined earlier in **Figure 6**) will be based on available habitat maps, published literature, and field surveys. Field surveys completed to support existing conditions include freshwater and tidal wetland delineations, a submerged aquatic vegetation (SAV) survey, terrestrial ecological surveys and habitat assessments, including a tree survey. These surveys were completed between November 2021 and April 2022. Information on federally and State-listed species, and significant habitats known to occur or identified as having the potential to occur within the Project Site would be compiled through a review of the New York State Environmental Resource Mapper, National Oceanic and Atmospheric Administration (NOAA) Essential Fish Habitat (EFH) Mapper, NOAA Section 7 Endangered Species Act Mapper, and U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool. Consultations with NYSDEC Natural Heritage Program (NHP), USFWS and the National Marine Fisheries Service (NMFS) would also be completed. An EFH Assessment was developed and submitted to NMFS as part of the consultation process. The assessment included sediment and in-situ surface water quality data collected during a spring 2021 sediment investigation. Additional sources of information would include review of publicly available data sources or mapping, such as floodplains, soil/geology characteristics, groundwater and existing ground pervious/impervious coverage maps.
- Surveys to support habitat characterization and identify a species presence/absence. In accordance with the *2021 CEQR Technical Manual*, wildlife surveys were completed during winter 2021 and spring 2022. In addition, a winter waterfowl survey was completed in February 2022. For wildlife surveys, daytime visual encounter surveys were conducted during which all birds, mammals, reptiles, and amphibians seen and/or heard while traversing the Project Site would be recorded. A wetlands



assessment was completed in August 2021 and identifies approximate boundary locations on the basis of the USACE three parameter approach and recording approximate wetland boundaries on Project Site map.

- An identification and description of existing water resources within the study area based upon existing and available information. This would include NYSDEC classifications and existing water quality characteristics (physical and chemical), if readily available for the Arthur Kill.
- A description of expected changes to the natural resources at the Project Site and in the surrounding area in the future without the Proposed Project. In developing the future No-Action Condition, attention will be paid to the known trends of invasive species that have been reported to impact trees in Staten Island.
- An assessment of construction impacts (including dredging activities) on natural resources habitats (aquatic and terrestrial), plants and wildlife. This will include an assessment of potential direct impacts such as the removal of vegetation or the displacement of wildlife habitat. The analysis will also assess the potential for impacts on adjacent tidal wetlands and the potential for any direct or indirect impacts on this regulated habitat and the water quality conditions of the Arthur Kill. Identify the measures that would be developed, as necessary, to mitigate and/or reduce any of the Proposed Project's potential significant adverse impacts on natural resources and incorporate any mitigation plans for wetland or other natural resources impacts.

Task 6: Hazardous Materials

A hazardous materials assessment determines whether a proposed action may increase the exposure of people or the environment to hazardous materials and, if so, whether this increased exposure would result in potential significant public health or environmental impacts. The potential for significant impacts related to hazardous materials can occur when: a) elevated levels of hazardous materials exist on a site and the project would increase pathways to human or environmental exposure; b) a project would introduce new activities or processes using hazardous materials and the risk of human or environmental exposure is increased; or c) the project would introduce a population to potential human or environmental exposure from off-site sources.

The hazardous materials chapter will examine the potential for significant hazardous materials impacts from the Proposed Project. Site-specific information related to hazardous materials will be reviewed and summarized in the hazardous materials chapter of the EIS. Any documentation of hazardous waste and other recognized environmental conditions (RECs), along with recommendations, further investigation, and approved remedial plans will also be discussed. The existing conditions portion of the Chapter will summarize the significant conclusions of available hazardous material information regarding the Project Site (such as Phase I Environmental Site Assessments (ESAs) and Phase II (subsurface) investigations). If subsurface contamination is identified that may be encountered as a result of the Proposed Project, a Remedial Action Plan (RAP) and Construction Health and Safety Plan (CHASP) will be developed and submitted to the lead agency and the DEP for review and approval. The appropriate remediation measures specific to the future uses of the Project Site, including any DEP recommendations, will be discussed in the EIS. If necessary, measures to avoid or reduce potential significant adverse impacts will be identified and discussed in the EIS.

Task 7: Water and Sewer Infrastructure

The water and sewer infrastructure assessment determines whether a proposed action may adversely affect the City's water distribution or sewer system and, if so, assess the effects of such actions to

determine whether their impact is significant. The *CEQR Technical Manual* outlines thresholds for analysis of an action's water demand and its generation of wastewater and stormwater. As described in the EAS for the Proposed Actions, an analysis of the City's water supply is not warranted as the Proposed Project would not result in a demand of more than one million gallons per day (gpd) and the Project Site is not located in an area that experiences low water pressure. However, water demand estimates will be provided in the EIS to inform the wastewater and stormwater conveyance and treatment analysis.

The Project Site is located in an area that is served by a separate sewer system. The threshold for a preliminary wastewater and stormwater infrastructure analysis for projects outside of Manhattan with separate sewers is 100 DUs or 100,000 sf of non-residential development. In addition, an assessment is warranted if a project would involve development on a site that is 5 acres or larger where the amount of impervious surface would increase. Although the Proposed Project would not exceed the above density thresholds, it would result in an increase in the amount of impervious surface on a site five acres or larger. Therefore, an analysis of stormwater infrastructure is warranted. The analysis will consider the potential for significant adverse impacts resulting from the Proposed Project. DEP will be consulted in preparation of this assessment.

Stormwater Infrastructure

- Describe existing City sewers and the Water Resource Recovery Facility ("WRRF") serving the Project Site, including the WRRF capacity and any current operational capacity issues at the WRRF. The Proposed Project is located within the service area of the Oakwood Beach WRRF.
- The existing stormwater drainage system and surfaces (pervious or impervious) on the Project Site will be described, and the amount of stormwater generated on the site will be estimated using DEP's volume calculation worksheet.
- The existing sewer system serving the Project Site will be described based on records obtained from DEP. The existing flows to the Oakwood Beach WRRF, which serves the Project Site, will be obtained for the latest twelve-month period, and the average dry weather monthly flow will be presented.
- Any changes to the stormwater drainage plan, sewer system, and surface area expected in the future without the Proposed Actions will be described, as warranted.
- Future stormwater generation from the Proposed Project will be assessed to determine the Proposed Project's potential to result in impacts. Changes to the Project Site's surface area will be described, runoff coefficients and runoff for each surface type/area will be presented, and volume and peak discharge rates from the site will be determined based on the DEP volume calculation worksheet.
- For stormwater management, a description of the Proposed Project's proposed stormwater management infrastructure improvements will be provided as well as any approvals that are necessary to implement these infrastructure improvements.
- Sanitary sewage generation for the Proposed Project will also be estimated. The effects of the incremental demand on the system will be assessed to determine if there will be any impact on operations of the Oakwood Beach WRRF.

Task 8: Transportation

The objective of a transportation analysis is to determine whether a proposed action may have a potential significant adverse impact on traffic operations and mobility, public transportation facilities and services, pedestrian elements and flow, the safety of all roadway users (pedestrians, bicyclists and motorists), on- and off-street parking, goods movement, or access between roadways and land development. The

Proposed Project would generate new vehicle trips and demand for parking, as well as new transit riders and pedestrian traffic. These new trips have the potential to affect the area's transportation systems.

It should be noted that the additional number of marine vessels projected to be going in and out of the proposed AKT is considered insignificant compared to the current maritime traffic on the Arthur Kill. Based on available AIS (Automatic Identification System) vessel frequency data for the period from January 1, 2016 to December 31, 2017, there are about 50 vessel trips a day in either direction passing the Project Site along the Arthur Kill. The proposed terminal operation would require an average of one (1) vessel movement per day, from inbound or outbound cargo vessels, or an inbound or outbound feeder barge or a wind turbine installation vessel (WTIV). As the Arthur Kill is already an active and heavily used maritime navigational channel today, the addition of the marine traffic associated with the Proposed Project will be minimal in comparison to existing marine traffic and would therefore have minimal, if any, effect on safe navigation or vessel traffic. It should also be noted that the vessel traffic will be the responsibility of the OSW developer and would be analyzed as part of the permitting documents for those OSW projects. As such, the EIS for AKT will not include an assessment of any potential impacts that offshore wind development will have on navigation and vessel traffic.

Travel Demand and Screening Assessment

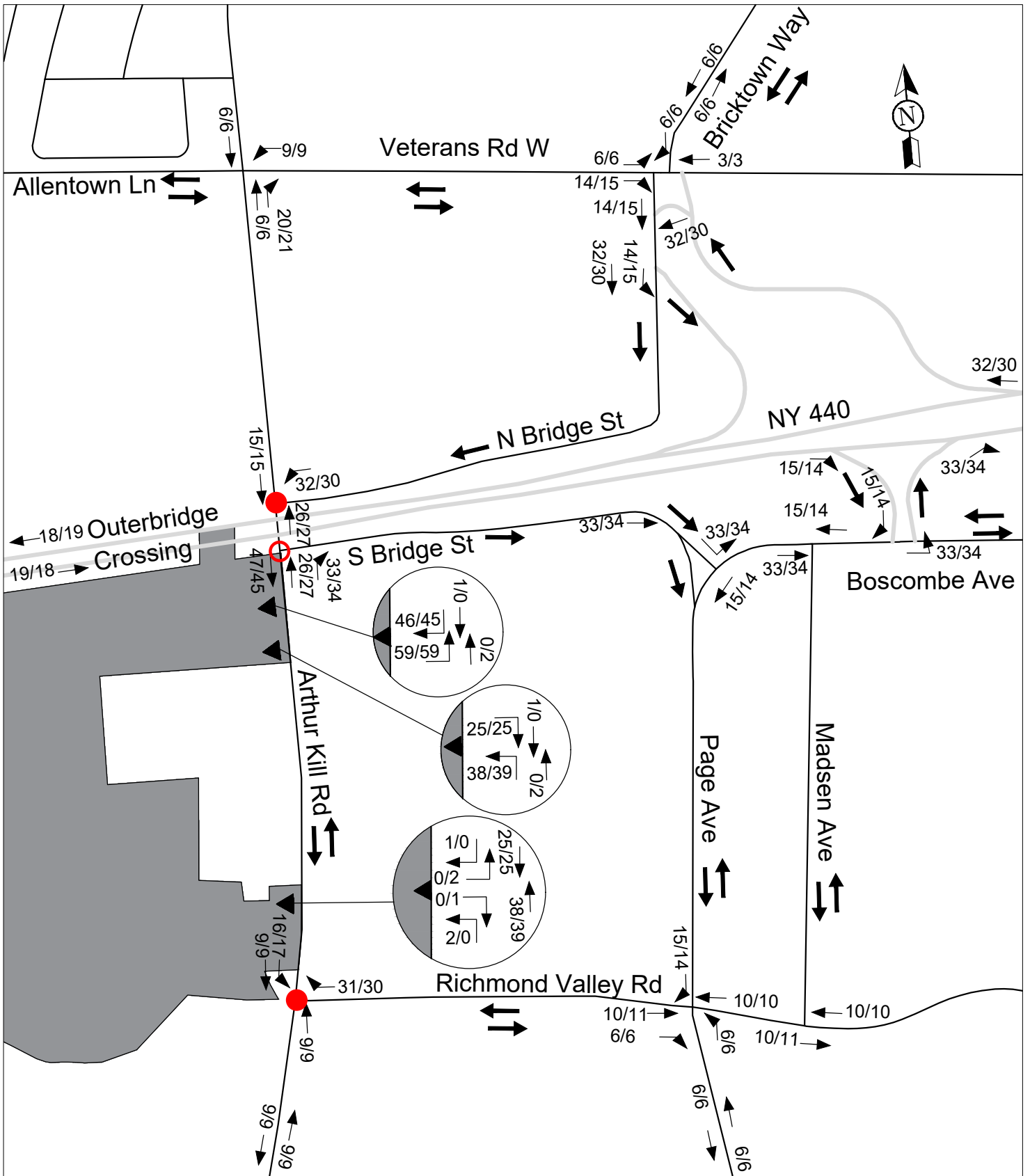
A detailed travel demand forecast (a Level 1 screening assessment) has been prepared for the Proposed Project using standard sources, including the 2021 *CEQR Technical Manual* and U.S. Census data, along with data provided by the Applicant. The travel demand forecast provides the numbers of person and vehicle trips by peak hour and mode of travel, including the number of trips by transit and the numbers of pedestrians traversing the area's sidewalks, corner areas, and crosswalks. The results of this forecast have been summarized in a Travel Demand Forecast (TDF) Technical Memorandum (refer to **Appendix 1**). In addition to the travel demand forecast, the TDF Technical Memorandum includes detailed traffic assignments (a Level 2 screening assessment). Based on the screening assessments, a total of three intersections have been identified for detailed traffic impact analysis in two peak hours. Operation of the Project Site's driveways in the future with the Proposed Actions will also be analyzed. As discussed in the TDF Technical Memorandum, detailed analyses of transit, ferry, and pedestrian conditions do not appear to be warranted based on *CEQR Technical Manual* guidance and will not be included in the EIS.

Traffic

Based on *CEQR Technical Manual* guidance, a quantified traffic analysis is typically required if a proposed action would result in 50 or more vehicle trip ends in a peak hour at one or more intersections. As shown in the travel demand forecast provided in the TDF Technical Memorandum in **Appendix 1**, the Proposed Project would generate an estimated 170 vehicle trips during each of the AM and PM peak hours, respectively, which would coincide with staffing shift changes. Therefore, under *CEQR Technical Manual* guidance, a detailed analysis of the Proposed Project's potential impacts to traffic conditions during these periods is warranted, and will be provided in the EIS. Vehicle trips in each of these peak hours were assigned to the local street network, and a total of three intersections (two signalized and one uncontrolled) where project-generated traffic is likely to exceed the 50-trip *CEQR Technical Manual* analysis threshold were selected for detailed analysis (see **Figure 7**). These include the following:

1. Arthur Kill Road @ North Bridge Street (signalized)
2. Arthur Kill Road @ South Bridge Street (uncontrolled)
3. Arthur Kill Road @ Richmond Valley Road (signalized)

The following outlines the anticipated scope of work for conducting a traffic impact analysis for the Proposed Project:



Legend:

- Project Site
- 8/8 = Incremental AM/PM Peak Hour Vehicle Trips
- Analyzed Signalized Intersection
- Analyzed Unsignalized Intersection
- Proposed Project Site Entrance

Arthur Kill Terminal Figure 7
 Project Increment Peak Hour Traffic Volumes and Analyzed Intersections

- Conduct a count program for traffic analysis locations that includes a mix of automatic traffic recorder (ATR) machine counts and intersection turning movement counts. Turning movement count data will be collected at each analyzed intersection during the weekday AM and PM peak hours, and will be supplemented by a minimum of three weekdays of continuous ATR counts. Vehicle classification count data will be collected during each peak hour at representative intersections along each of the principal corridors in the study area. The turning movement counts and vehicle classification counts will be conducted concurrently with the ATR counts. Where applicable, available information from recent studies in the vicinity of the study area will be compiled, including data from such agencies as the New York City Department of Transportation (DOT) and DCP.
- Inventory physical data at each of the analysis intersections and adjacent street geometry, including street widths, number of traffic lanes and lane widths, pavement markings, turn prohibitions, bicycle routes and curbside parking regulations. Signal phasing and timing data for each signalized intersection included in the analysis will be obtained from DOT.
- Determine existing traffic operating characteristics at each analyzed intersection including capacities, volume-to-capacity (v/c) ratios, average vehicle delays, and levels of service (LOS) per lane group, per intersection approach, and per overall intersection. This analysis will be conducted using the 2000 Highway Capacity Manual (HCM) methodology with the latest approved Highway Capacity Software (HCS).
- Based on available sources, U.S. Census data and standard references including the *CEQR Technical Manual*, estimate the demand from other major developments planned in the vicinity of the Project Site by the 2025 analysis year. This will include total peak hour person and vehicular (auto and truck) trips, and the distribution of trips by auto and other modes. Mitigation measures accepted for all No-Action projects as well as other DOT initiatives will be included in the future No-Action network, as applicable.
- Compute the future 2025 No-Action traffic volumes based on approved background traffic growth rates for the study area (one percent per year) and demand from major development projects expected to be completed in the future without the Proposed Actions. Incorporate any planned changes to the roadway system anticipated by 2025, and determine the No-Action v/c ratios, delays, and levels of services at analyzed intersections.
- Using data provided by the Applicant, Census data, and data from standard references including the *CEQR Technical Manual*, develop a travel demand forecast for the Proposed Project based on the anticipated operations at the proposed AKT. For each analyzed peak hour, determine the net change in vehicle trips expected to be generated by the Proposed Project. Assign the net project-generated trips in each analysis period to likely approach and departure routes, and prepare traffic volume networks for the 2025 future with the Proposed Actions condition for each analyzed peak hour.
- Determine the v/c ratios, delays, and LOS at analyzed intersections and each of the new access locations for the With-Action condition and identify significant adverse traffic impacts in accordance with *CEQR Technical Manual* criteria.
- Identify and evaluate potential traffic mitigation measures, as appropriate, for any significantly impacted locations in the study area in consultation with the lead agency and DOT. Potential traffic mitigation could include both operational and physical measures such as changes to lane striping, curbside parking regulations and traffic signal timing and phasing, and the installation of a new traffic signal. Where impacts cannot be fully or partially mitigated, they will be described as unavoidable adverse impacts.

Task 9: Air Quality

CEQR Technical Manual criteria require an air quality assessment for actions that can result in potentially significant air quality impacts. The Proposed Action would not introduce any new sensitive receptor to the Project Site. However, it would introduce new mobile and stationary sources to the neighborhood. Mobile source impacts could arise when an action increases or causes a redistribution of traffic, creates any other mobile sources of pollutants, or adds new uses near existing mobile sources, as well as from vehicles using parking facilities, parking lots, or garages. Stationary source impacts could occur when new stationary sources such as heating, ventilation and air conditioning (HVAC) emission stacks and on-site diesel equipment exhaust, are introduced to a neighborhood. As detailed below, the air quality analysis for the Proposed Project will include an analysis of the potential impacts on air quality from the on-site accessory parking, and provide screening assessments for mobile sources (vehicular and marine traffic) and stationary sources (HVAC and onsite activities).

Mobile Source Analysis

VEHICULAR TRAFFIC AND PARKING

As discussed in Task 8, “Transportation,” the peak hour traffic generated by the Proposed Project would be less than the CEQR screening threshold of 170 peak hour auto trips for CO per intersection and 23 heavy duty diesel vehicles or equivalents (HDDV) for arterial roads for PM_{2.5}. As a result, a qualitative and screening analysis is anticipated for the mobile source on-road operation.

The Proposed Project would include a total of 121 accessory parking spaces, with approximately 109 surface parking spaces planned for the warehouse/tenant office area, and another 12 surface parking spaces for the Cole House owner office area. As such, a detailed mobile source air quality assessment will be included in the EIS to estimate the potential air quality impacts from on-site parking facilities. Refer to the Air Quality Methodology Memo included as **Appendix 2** for details.

MARINE TRAFFIC

The additional number of marine vessels going in and out of the proposed AKT is considered insignificant compared to the current maritime traffic on the Arthur Kill. Based on available AIS (Automatic Identification System) vessel frequency data for the period from January 1, 2016 to December 31, 2017, there are about 50 vessel trips a day in either directions at the project site.⁴ The proposed terminal operation would require an average of one (1) vessel movement per day, from inbound or outbound cargo vessels, or an inbound or outbound feeder barge or a wind turbine installation vessel (WTIV). As the Arthur Kill is already an active and heavily used maritime navigational channel today, the addition of the marine traffic associated with the Proposed Project will be minimal in comparison to existing marine traffic and thus not be considered a major new emission source. In addition, the vessels coming to AKT would be regulated and compliant with the U. S. Environmental Protection Agency’s (USEPA’s) emission standards and regulations for Marine Vessels. Therefore, a qualitative mobile source assessment for marine traffic will be included in the EIS.

Stationary Source Analysis

Operational stationary source air quality emissions would be emitted from the logistics and deliveries activities, idling/operating activities of marine vessels while at berth, onsite material loading activities

⁴ MRCE Memorandum of May 4, 2022 for Navigational Risk Assessment – Task 11 (Risks to Arthur Kill Channel Vessel Traffic

within the proposed terminal laydown and assembly area, as well as (HVAC systems for the 22,472 gsf warehouse/office building and 4,212 gsf office building. The following screening assessments will be conducted to evaluate the potential air quality impacts:

- Screening assessment for HVAC equipment for the proposed warehouse/office space and the existing Cole House based on fuel type, distance to the nearest sensitive receptor and the development site using screening figures in the *CEQR Technical Manual Air Quality Appendix*.
- Industrial screening assessment from the onsite transport and handling equipment to the potential sensitive receptors (day care and medical offices) on both sides of Arthur Kill Road near the Project Site per *CEQR Technical Manual*.
- The applicant is in the process of verifying if the proposed facility would require Title V permit or State Air Facility Permit. If these permits are required, an air quality impact analysis for the facility will be included in the EIS.

General Conformity Analysis

Since the project is located in an Ozone (8-hr) nonattainment / PM_{2.5} maintenance area, General Conformity analyses for both construction and on-site operational (i.e., NONROAD equipment used by AKT's tenant, excluding marine vessels) activities are required as part of USACE Section 404/10/408 Permits to ensure the Federal action(s) would not interfere with the NY State Implementation Plan (SIP) to attain and maintain the National Ambient Air Quality Standards (NAAQS). Although, not typically required for a CEQR review, the results of the General Conformity analyses will be included as part of this Environmental Impact Statement.

Task 10: Greenhouse Gas (GHG) Emissions and Climate Change

Greenhouse Gas Emissions

Increased greenhouse (GHG) emissions are changing the global climate, which is predicted to lead to wide-ranging effects on the environment, including rising sea levels, increases in temperature, and changes in precipitation levels. Although this is occurring on a global scale, the environmental effects of climate change are also likely to be felt at the local level. According to the *CEQR Technical Manual*, a GHG emissions assessment is typically conducted only for larger projects undergoing an EIS, since these projects have a greater potential to be inconsistent with the City's GHG reduction goal to a degree considered significant. As discussed in the EAS, the Proposed Project would not exceed 350,000 gsf, and would not be a power generator, and therefore a GHG assessment is not warranted pursuant to CEQR. However, given the large scale and nature of the project, the EIS will include a qualitative discussion of greenhouse gas emissions and climate change. As applicable, relevant measures to reduce energy consumption and GHG emissions that could be incorporated into the Applicant's Proposed Project will be discussed, and the potential for those measures to reduce GHG emissions from the Proposed Project will be assessed to the extent practicable. As noted above, the Proposed Project will support New York State's OSW goals, which will ultimately help to reduce GHG emissions.

Climate Change

As the Project Site is located within the current 100- or 500-year flood zone, the EIS will include a discussion of the Proposed Project's resiliency to climate change. The potential effects of climate change on the Proposed Project will be evaluated based on the best available information, following the methodology outlined in the guidance document entitled *The New York City Waterfront Revitalization Program: Climate Change Adaptation Guidance* (DCP, March 2017). The evaluation will focus on potential future sea and storm levels and the interaction with the Proposed Project's infrastructure and uses.

Task 11: Noise

The DEIS will assess the potential effects of operational noise generated by the Proposed Project on nearby sensitive receptors. The additional marine vessels going in and out of the proposed AKT could be considered a substantial new mobile noise source. However, as the Arthur Kill waterway is already an active and heavily used maritime navigational channel today, the addition of the marine vessels associated with the Proposed Project would be minimal in comparison. Studies prepared for the draft Joint Permit Application have shown that there are currently about 50 vessel trips a day in either direction in Arthur Kill in the vicinity of the Project Site. The proposed terminal operation would require an average of one (1) vessel movement per day, from inbound or outbound cargo vessels, or an inbound or outbound feeder barge or a wind turbine installation vessel (WTIV), representing a minimal increase of approximately two percent in maritime traffic in Arthur Kill. As such, the additional number of marine vessels going in and out of the proposed AKT is considered insignificant compared to the current maritime traffic on the Arthur Kill and would thus not be considered a major new noise generator. A qualitative assessment will be included in the EIS, as detailed in the Noise Methodology Memo included as **Appendix 3**.

As described above, the Proposed Project's operational activities would include the staging, assembly and pre-commissioning of wind turbine generators (WTGs) and other offshore wind (OSW) components before they are loaded onto vessels for transportation to and installation at offshore wind farms. No active wind farms or turbines are proposed on the Project Site. The proposed uses in the renovated Cole House building and the tenant warehouse/office building would be accessory to the proposed manufacturing use. Therefore, the Proposed Project would not introduce new sensitive noise receptors to the Project Site. In addition, per ZR 42-20, uses within the M1-1 district are subject to performance standards and include decibel limits depending on the octave band and specific manufacturing district. The Proposed Project would comply with all existing zoning regulations pursuant to ZR 42-20. However, as operations at the Project Site would include some noise-generating on-site equipment (e.g., crane crawlers, self-propelled modular transporters, forklifts, manlifts, etc.) which are anticipated to operate within 1,500 feet of several existing sensitive receptors (such as 4885 and 4849 Arthur Kill Road) with a direct line of site to those receptors, a detailed stationary source noise analysis is warranted and will be included in the DEIS.

The following tasks will be performed in compliance with *CEQR Technical Manual* guidance:

- Based on the traffic studies conducted for Task 8, "Transportation," a screening analysis will be conducted to determine whether there are any locations where there is the potential for the Proposed Project to result in significant mobile source noise impacts (i.e., doubling Noise PCEs) due to project-generated traffic. If it is determined that existing Noise PCEs would double at any sensitive receptor, a detailed analysis would be conducted in accordance with *CEQR Technical Manual* guidance.
- Appropriate noise descriptors for purposes of both the mobile source and stationary source noise analyses will be selected. Based on CEQR criteria, the noise analyses will examine the L_{10} and the one-hour equivalent ($L_{eq(1)}$) noise levels.
- Existing noise data will be collected at the receptor locations adjacent to the Project Site in order to measure existing noise levels generated by nearby traffic and marine activity along the Arthur Kill, as well as at receptor locations adjacent to existing sensitive receptors near the Project Site that could be affected by the Proposed Project's stationary noise sources. At each receptor site, 20-minute measurements will be performed during typical weekday AM, midday, and PM peak periods (coinciding with the traffic and/or on-site activity peak periods). In addition, as a shift change for the Proposed Project would occur between 5:30 and 6:30 AM, an additional noise monitoring period will occur between 5:30 and 6:30 AM to account for additional vehicle trips generated by the Proposed

Project. Noise measurements will be recorded in conformance with *CEQR Technical Manual* procedures, and measured noise level descriptors will include equivalent noise level (L_{eq}), maximum level (L_{max}), minimum level (L_{min}), and statistical percentile levels such as L_1 , L_{10} , L_{50} , and L_{90} . A summary table of existing measured noise levels will be provided as part of the EIS.

- Other noise monitoring information (i.e., measurement photos, traffic counts, and field notes) would be recorded simultaneously during noise measurements per *2021 CEQR Technical Manual* guidance.
- Following procedures outlined in the *CEQR Technical Manual* for assessing mobile source and stationary source noise impacts and the cumulative effects of each, it may be necessary to project existing and future No-Action and With-Action noise levels at the noise receptor locations based on acoustical fundamentals. If warranted, all projections will be made with L_{eq} noise descriptor.
- In the event significant adverse noise impacts are identified, mitigation measures required to avoid or reduce such impacts will also be examined and discussed in the DEIS, per Task 15, "Mitigation."

Task 12: Public Health

Public health is the organized effort of society to protect and improve the health and well-being of the population through monitoring; assessment and surveillance; health promotion; prevention of disease, injury, disorder, disability, and premature death; and reducing inequalities in health status, as defined in the *CEQR Technical Manual*. The goal of CEQR with respect to public health is to determine whether adverse impacts on public health may occur as a result of a proposed project, and, if so, to identify measures to mitigate such effects.

Although no adverse impact on public health is anticipated, a public health assessment may be warranted if an unmitigated significant adverse impact is identified in other CEQR analysis areas, such as air quality, hazardous materials, or noise, according to the *CEQR Technical Manual*. For the Proposed Project, a preliminary public health assessment will be conducted that will consist of a summary of the Proposed Project's potential to result in unmitigated significant adverse impacts in the areas of air quality, water quality, hazardous materials, and noise. If unmitigated significant adverse impacts are identified for the Proposed Project in any of these technical areas and the lead agency determines that a public health assessment is warranted, an analysis will be provided for the specific technical area or areas.

Task 13: Neighborhood Character

Neighborhood character is established by numerous factors, including land use patterns, the scale of its development, the design of its buildings, the presence of notable landmarks, and a variety of other physical features that include traffic and pedestrian patterns, noise, etc. The Proposed Project has the potential to alter certain elements contributing to the affected area's neighborhood character. Therefore, a neighborhood character analysis will be provided in the EIS.

A preliminary assessment of neighborhood character will be provided in the EIS to determine whether changes expected in other technical analysis areas—land use, zoning, and public policy; historic and cultural resources; urban design and visual resources; transportation; and noise—may affect a defining feature of neighborhood character. The preliminary assessment will:

- Identify the defining features of the existing neighborhood character.
- Summarize changes in the character of the neighborhood that can be expected in the future With-Action condition and compare to the future No-Action Condition.

- Evaluate whether the Proposed Project has the potential to affect these defining features, either through the potential for a significant adverse impact or a combination of moderate effects in the relevant technical areas.

If the preliminary assessment determines that the Proposed Project could affect the defining features of neighborhood character, a detailed analysis will be conducted in accordance with the *CEQR Technical Manual* guidance.

Task 14: Construction

Construction impacts, though temporary, can have a disruptive and noticeable effect on the adjacent community, as well as people passing through the area. Construction impacts can be significant when construction activity has the potential to affect transportation conditions, archaeological resources and the integrity of historic resources, community noise levels, air quality conditions, or mitigation of hazardous materials. Projects with overall construction periods lasting longer than two years and that are near to sensitive receptors (i.e., residences, open spaces, etc.) should undergo a preliminary impact assessment, according to the *CEQR Technical Manual*. Construction of the Proposed Project is expected to take place over a period of 20 to 23 months, and is therefore considered short-term and does not warrant a detailed construction analysis. This chapter of the EIS will provide a qualitative discussion following guidance in the *CEQR Technical Manual*. The qualitative assessment will describe the proposed construction program and phasing, and will qualitatively examine the potential short-term construction impacts of the proposed construction on the Project Site, as follows:

- **Transportation Systems:** A qualitative review of the construction plan and construction-period traffic generation will be prepared. Given the 32.5-acre size of the Project Site, all construction staging activities are expected to take place on-site, and no closure/reduction of adjacent travel lanes or sidewalks would be anticipated during construction.
- **Air Quality:** The construction air quality assessment will provide a qualitative discussion of both mobile source emissions from construction equipment and worker and delivery vehicles, and fugitive dust emissions. General conformity analysis will also be included for construction activities in this section as part of USACE Section 404/10/408 Permits.
- **Noise:** The construction noise impact section will contain a qualitative discussion of noise from the Proposed Project's construction activity.
- **Protection of Environmental Features:** The potential construction-related impacts on natural resources will be discussed (e.g., impacts from ground disturbance, in-water work and stormwater runoff) and the measures that would be employed to avoid impacts to these features, such as a mitigation and avoidance measures and a stormwater protection plan, would be described.
- **Other Technical Areas:** As appropriate, the construction assessment will discuss other areas of environmental concern, including Land Use and Neighborhood Character, Socioeconomic Conditions, Community Facilities, Open Space, Historic and Cultural Resources, and Hazardous Materials, for potential construction-related impacts.

Task 15: Mitigation

Where significant adverse impacts that could result from the Proposed Project have been identified in Tasks 2 through 14, this chapter will describe the practicable measures that would be implemented to mitigate those impacts. These measures will be developed and coordinated with the responsible

City/State agencies, as necessary. Where impacts cannot be fully mitigated, they will be disclosed as unavoidable adverse impacts.

Task 16: Alternatives

Pursuant to CEQR, the purpose of an alternatives section in an EIS is to examine development options that would reduce or eliminate impacts resulting from the Proposed Project while substantively meeting the goals and objectives of the Proposed Actions. The specific alternatives to be analyzed will be better defined once the full extent of the Proposed Project's impacts have been identified. At this time, it is expected that the EIS will include two alternatives: (1) a No-Action alternative, which describes the conditions that would exist if the Proposed Actions were not implemented, and is considered throughout the EIS as the No-Action Condition, and (2) a No Unmitigated Impact alternative, which assesses a change in density or program design in order to avoid the potential for any unmitigated significant adverse impacts that may be associated with the Proposed Project. The specifics of these alternatives will be finalized as project impacts become clarified. The analysis of each alternative will be qualitative, except in those technical areas where significant adverse impacts of the Proposed Project have been identified.

Task 17: Summary EIS Chapters

The EIS will include the following three summary chapters, in accordance with CEQR guidance:

- **Unavoidable Adverse Impacts:** summarizes any significant adverse impacts that are unavoidable if the Proposed Actions are implemented regardless of the mitigation employed (or if mitigation is not feasible).
- **Growth-Inducing Aspects of the Proposed Project:** which generally refer to "secondary" impacts of the Proposed Actions that trigger further development.
- **Irreversible and Irretrievable Commitments of Resources:** which summarizes the Proposed Actions and their impact in terms of the loss of environmental resources (loss of vegetation, use of fossil fuels and materials for construction, etc.), both in the immediate future and in the long term.

Task 18. Executive Summary

The executive summary will utilize relevant material from the body of the EIS to describe the Proposed Project, the environmental impacts, measures to mitigate those impacts, and alternatives to the Proposed Actions. The executive summary will be written in enough detail to facilitate drafting of a notice of completion by the lead agency.

Appendix 1

Draft Transportation Planning Factors and Travel Demand Forecast Memorandum



DRAFT
TECHNICAL MEMORANDUM

TO: New York City Department of City Planning

FROM: Philip Habib & Associates

DATE: November 14, 2022

PROJECT: Arthur Kill Terminal (PHA No. 202020)

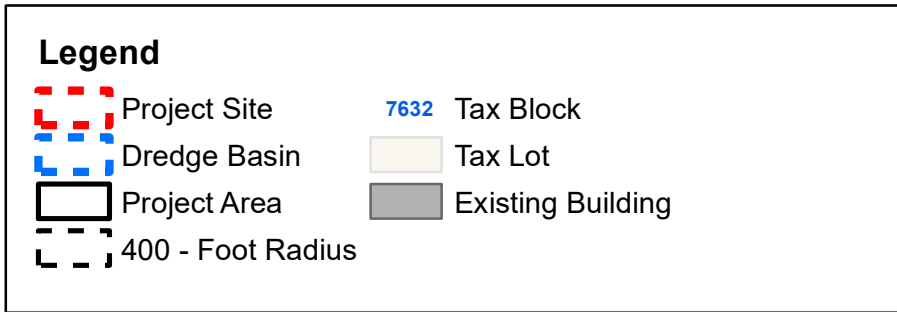
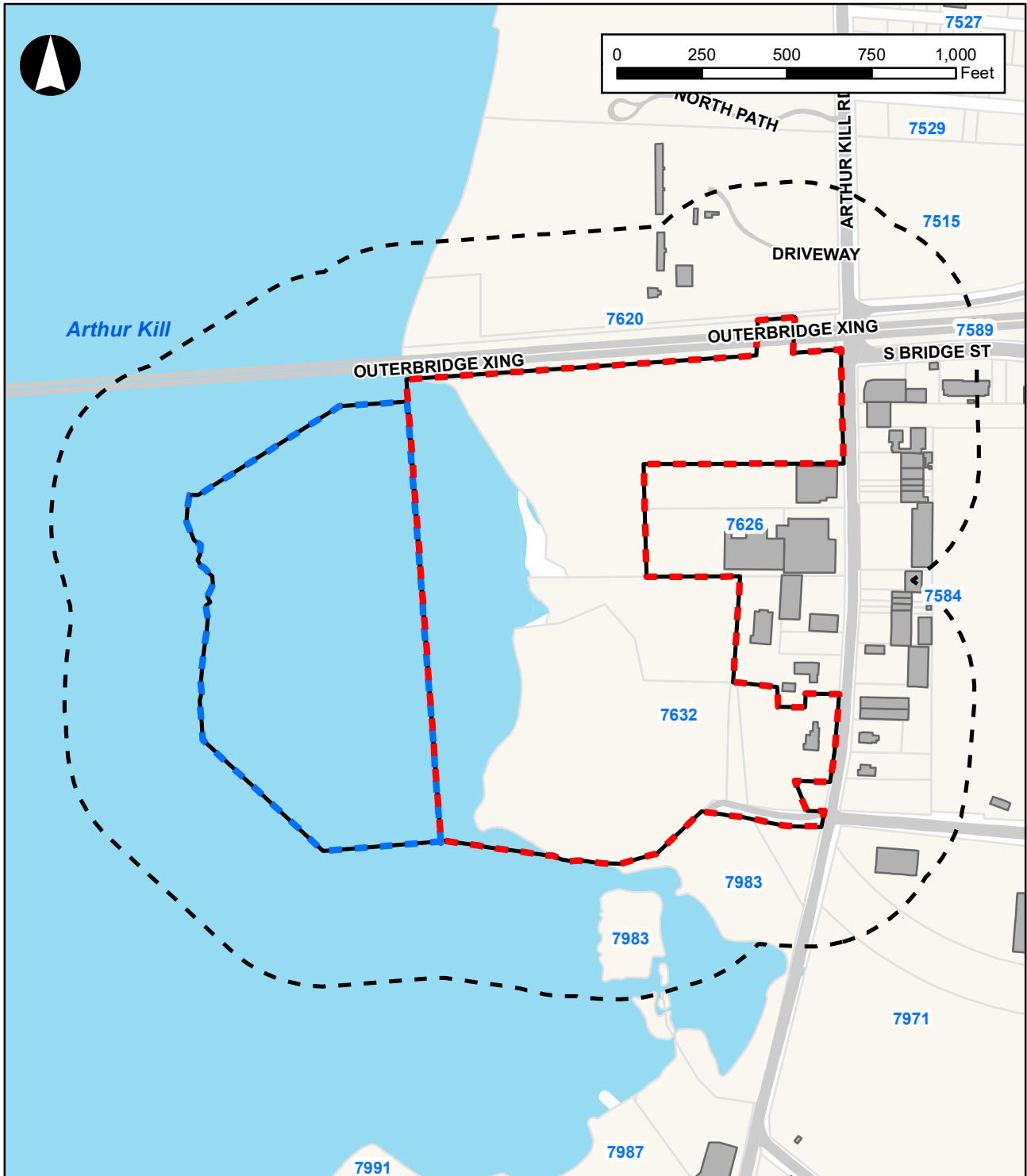
RE: Travel Demand Forecast

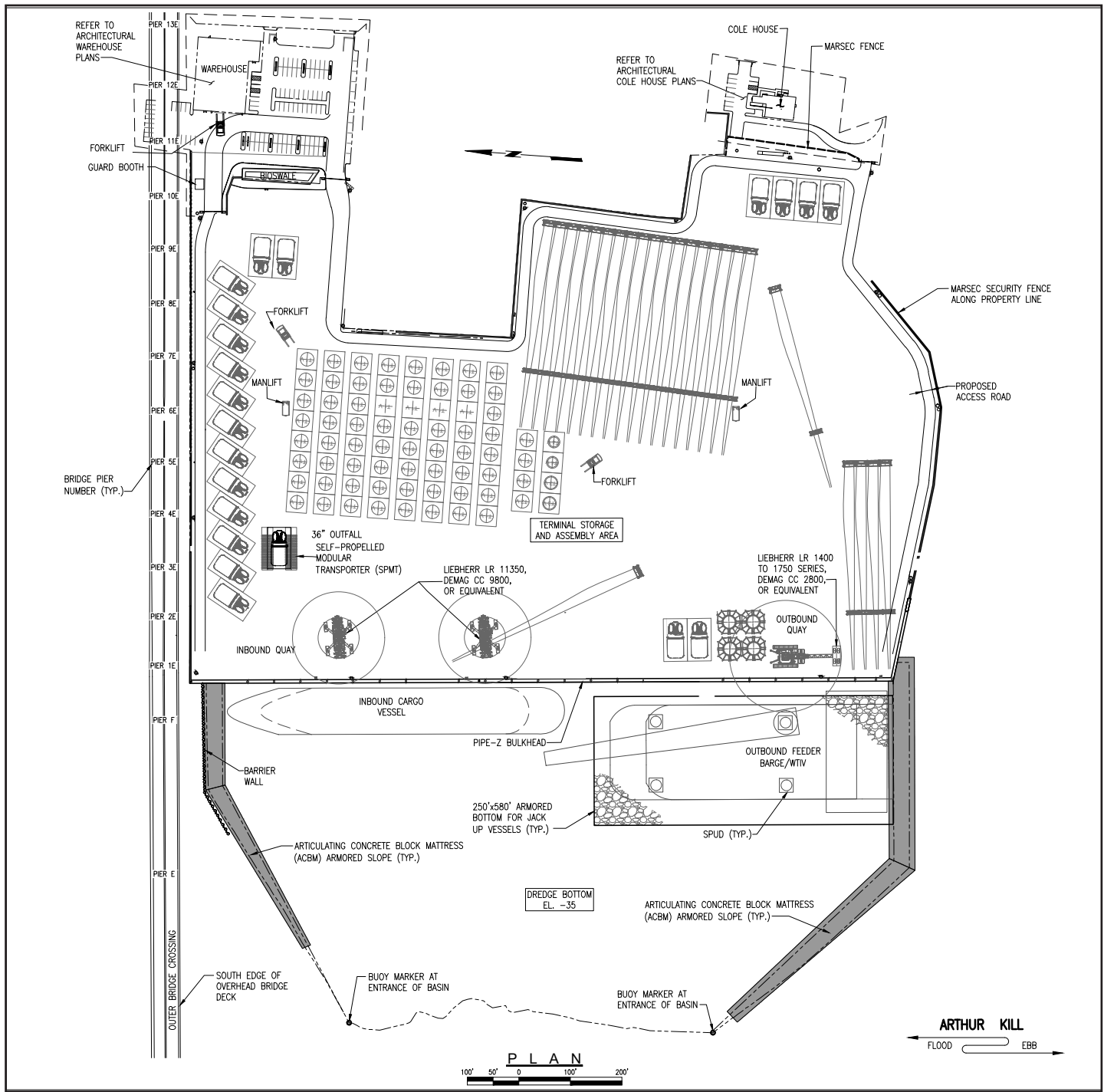
This memorandum provides a preliminary travel demand forecast and trip assignment for the Arthur Kill Terminal project. Estimates of the peak travel demand generated by the Proposed Actions are provided, along with a discussion of trip assignment methodologies and study area definitions.

THE PROPOSED ACTIONS

The Applicant, Arthur Kill Terminal LLC, is requesting discretionary actions to facilitate the redevelopment of an approximately 32.5-acre property (the “Project Site”) along the Arthur Kill waterfront in Community District 3 in western Staten Island. As shown in **Figure 1**, the Project Site is generally bounded to the north by the Outerbridge Crossing (a cantilever bridge carrying Route 440 over the Arthur Kill between Staten Island and New Jersey), to the east by Arthur Kill Road, to the south by the mapped but unbuilt Richmond Valley Road and the shoreline of Mill Creek, and to the west by the Arthur Kill waterway.

The Proposed Actions would facilitate development of the Project Site as Arthur Kill Terminal (AKT), an approximately 32.5-acre state-of-the-art port for the staging, assembly, and pre-commissioning of wind turbine generators (WTGs) and other offshore wind (OSW) components (the “Proposed Project”). The WTGs would be assembled at the Project Site prior to being transported and installed at future offshore wind farms that are to be built off the East Coast of the United States. The proposed staging and assembly port would not house functioning or operating wind turbines. As shown in **Figure 2**, the Proposed Project includes the construction of a marine terminal with a 1,365 linear-foot (lf) quay, an approximately 28.5-acre laydown and storage area upland of the quay, as well as a two-story (48-foot-tall including the mechanical bulkhead) tenant building located at the northeast corner of the Project





Arthur Kill Terminal

Figure 2
Illustrative Site Plan

Site containing warehouse space (for tools, spare parts, and consumables) and accessory office space, totaling approximately 22,472 gross square feet (gsf), with 109 accessory parking spaces, and the adaptive reuse of an existing two-story (33-foot-tall), 4,212 gsf residential structure (the “Cole House”) at the southeast corner of the site as an owner office and visitor area with 12 accessory parking spaces. All of the proposed uses are allowed under the existing M1-1/M3-1 zoning, and the office/warehouse/visitor spaces are accessory to the operation of the port facility. The Proposed Project is intended to help New York State meet its clean energy goal of developing, building, and interconnecting nine gigawatts (GW) of offshore wind energy capacity by 2035. The 32.5-acre Project Site and the proposed approximately 18-acre basin for vessel operations (the “Dredge Basin”) comprise the 50-acre Project Area. Two new curb cuts on Arthur Kill Road south of its intersection with South Bridge Street would provide access to the proposed accessory warehouse/office building and parking area on the northern portion of the Project Site. An existing curb cut north of the intersection of Arthur Kill Road and Richmond Valley Road would also be modified to provide access to the Cole House parking spaces. Lastly, under the Proposed Actions, the mapped but unbuilt portion of Richmond Valley Road west of Arthur Kill Avenue at the southern end of the Project Site would be demapped. A new curb cut at this location would provide access to a private driveway servicing the Cole House and the southern portion of the Project Site. This driveway would function as a secondary access point, primarily for emergency access/egress, and would not be in regular use.

With an estimated construction period of 20 to 23 months, it is anticipated that the Proposed Project would be developed and operational by the end of 2025.

ANALYSIS FRAMEWORK

In order to assess the potential effects of the Proposed Actions, both “future without the Proposed Actions” (No-Action) and “future with the Proposed Actions” (With-Action) conditions are analyzed for an analysis year of 2025. Under the No-Action scenario, it is assumed that the Proposed Project would not be constructed, and that the Project Site would remain undeveloped with the exception of the existing 4,212 gsf Cole House which would remain as a single-family residence. Under the With-Action scenario, the Proposed Project would include a 1,365-foot quay capable of berthing inbound and outbound vessels simultaneously, and a 28.5-acre Operations Area. There would also be a total of 22,472 gsf of new development (excluding parking), including approximately 15,266 gsf of warehouse space and 7,206 gsf of office space, and the adaptive reuse of 4,212 gsf of single-family residential space as office space. Compared to the No-Action condition, the Proposed Actions would result in a net incremental increase in floor area of 15,266 gsf of warehouse space, 11,418 gsf of office space and approximately 121 accessory parking spaces. There would also be a net reduction of 4,212 gsf of residential space.

TRANSPORTATION PLANNING ASSUMPTIONS

Employment at the Project Site would vary depending on a number of factors including the size of a tenant's off-shore wind farm project, the phase of project development, the length of the installation period, the installation methodology, and the number of vessels employed. Based on information provided by a potential tenant, it is anticipated that peak employment would occur during a wind farm project's pre-assembly/offshore installation phase. During this phase, the facility would operate 24 hours per day, seven days per week, and it is anticipated that up to 200 tenant workers (160 site workers and 40 office workers) would be employed at the Project Site each day. There would be substantially fewer tenant workers on site each day during other project phases which would involve site mobilization and demobilization. It is anticipated that tenant workers would be divided equally between two 12-hour shifts – 6:00 a.m. to 6:00 p.m., and 6:00 p.m. to 6:00 a.m. For travel demand forecasting purposes, it is conservatively assumed that all workers from one shift would arrive in the same one-hour period that all workers from the previous shift would depart, i.e., 5:30 a.m. to 6:30 a.m. and 5:30 p.m. to 6:30 p.m. Although some workers would likely be absent for sick leave, vacation, etc., on any given day, the forecast also conservatively assumes 100 percent attendance. As on-site welfare facilities, including a canteen, would be provided, it is expected that few if any workers would leave the Project Site during the workday.

In addition to tenant workers, approximately four site security and three management staff are also expected to work at the Project Site each day. Security personnel would work in shifts to ensure 24/7 coverage, while management staff would typically work normal weekday business hours (i.e., 9 a.m. to 5:00 p.m.). Although travel demand from site security/management staff is generally not expected to coincide with the peak hours for tenant worker travel demand, it was conservatively assumed for travel demand forecasting purposes that management staff would arrive during the AM shift change for tenant workers and depart during the PM shift change. As discussed below in "Trip Generation," based on anticipated staffing levels, the Proposed Project would generate a net total of approximately 103 inbound and 100 outbound worker trips in the AM peak hour and approximately 100 inbound and 103 outbound worker trips in the PM peak hour.

Modal split and vehicle occupancy for workers at the Project Site were derived from American Association of State Highway and Transportation Officials (AASHTO) Census Transportation Planning Products (CTPP) 2012-2016 reverse journey-to-work 5-year data for the Staten Island census tracts in proximity to the Project Site (tracts 226 and 248). As shown in **Table 1**, it is estimated that 89.9 percent of workers would travel to and from the Project Site by auto with an average auto occupancy of 1.07 persons per auto. (The data indicate that there would be few if any trips by taxi/rideshare services.) An estimated 10.1 percent of workers would travel by transit. It should be noted that the nearest rail transit station (the Metropolitan Transportation Authority (MTA) Staten Island Railway Arthur Kill station) is located more than ½ mile from the Project Site, and that sidewalks are not provided along some segments of Arthur Kill Road which is the most direct path to this station. It is therefore assumed that all transit trips would start or end their journey on the MTA New York City Transit (NYCT) S78 bus route

which serves the rail station and has stops along Arthur Kill Road adjacent to the Project Site. Lastly, given the Project Site’s waterfront location, it is anticipated that few if any workers would walk to work.

TABLE 1: Transportation Planning Assumptions

WORKERS	WORKERS PER SHIFT ¹	MODAL SPLIT ²		AUTO OCCUPANCY ²
		Auto	Transit	
First Shift (6 a.m. - 6 p.m.)				
Site Workers	80	89.9%	10.1%	1.07
Office Workers ³	23			
Total	103			
Second Shift (6 p.m. - 6 a.m.)				
Site Workers	80			
Office Workers	20			
Total	100			
Daily Total	203			

Notes:

Source: Data provided by Arthur Kill Terminal, LLC, unless otherwise noted.

¹ Assumes up to 80 site workers and 20 office workers per tenant shift during periods of peak pre-assembly and installation activity. Travel demand from site security (approximately 4 workers total) not included as it is not expected to coincide with peak travel periods for

² Based on AASHTO CTPP 2012-2016 reverse journey-to-work 5-year data for Staten Island census tracts 226 and 248.

³ Includes three site management staff on-site during first shift.

In addition to worker trips, there would also likely be some trips generated each day by the visitor area at the Cole House. However, they are expected to be relatively small in number and would likely not occur during the peak hours for worker travel demand identified above when the Cole House staff and other on-site workers would be arriving/departing. It should also be noted that development of the Proposed Project would displace existing residents at the Cole House. However, to be conservative, no credit is assumed for the travel demand generated by this displaced residential use.

OSW components are too large to transport by road and would be delivered to and offloaded from the Project Site by vessel. Most tools and equipment would also be brought to the Project Site by vessel. Consequently, truck trips generated by OSW operations are expected to consist of one delivery of materials and consumables by tractor-trailer each day. However, these truck trips are not expected to occur during the 5:30 a.m. to 6:30 a.m. and 5:30 pm. to 6:30 p.m. peak hours for worker travel demand.

It is also anticipated that there would be some additional truck trips each day associated with the Proposed Project’s office component, including deliveries of supplies and consumables, mail/package deliveries, and waste pick-up. These truck trips, which would likely amount to no more than one or two trucks arriving and departing in any one hour, are also not expected to occur during the peak hours for worker travel demand.

TRIP GENERATION

The incremental change in peak hour person and vehicle trips expected to result from the Proposed Actions by the 2025 analysis year was derived based on the assumptions regarding the travel demand characteristics and projected future workforce shown in **Table 1** and described above. **Table 2** shows estimates of the incremental change in peak hour person trips and vehicle trips that would occur in 2025 with development of the Proposed Project compared to the No-Action condition (which assumes that the Project Site would remain undeveloped). As noted above and shown in **Table 2**, it is expected that the Proposed Project would generate its greatest levels of travel demand during the one-hour periods when tenant worker shift changes would occur—5:30 a.m. to 6:30 a.m. (the AM peak hour), and 5:30 pm. to 6:30 p.m. (the PM peak hour). During the AM peak hour, the Proposed Project would generate a net total of approximately 103 inbound and 100 outbound person trips, while during the PM peak hour, it would generate approximately 100 inbound and 103 outbound person trips. Peak hour vehicle trips would total approximately 86 inbound to and 84 outbound from the Project Site in the AM and 84 inbound and 86 outbound in the PM. (As noted previously, these would be comprised of autos as truck trips are not expected to occur in the peak hours for worker travel demand.) Peak hour transit (bus) trips would increase by a net total of approximately 11 inbound and 10 outbound in the AM peak hour and 10 inbound and 11 outbound in the PM.

LEVEL 1 SCREENING ASSESSMENT

The *City Environmental Quality Review (CEQR) Technical Manual* describes a two-level screening procedure for the preparation of a “preliminary analysis” to determine if quantified operational analyses of transportation conditions are warranted. As discussed in the following sections, the preliminary analysis begins with a trip generation (Level 1) analysis to estimate the numbers of person and vehicle trips attributable to the proposed action. According to the *CEQR Technical Manual*, if a proposed action is expected to result in fewer than 50 peak hour vehicle or ferry trips, and fewer than 200 peak hour transit or pedestrian trips, further quantified analyses are not warranted. When these thresholds are exceeded, detailed trip assignments (a Level 2 assessment) are to be performed to estimate the incremental trips that could occur at specific transportation elements and to identify potential locations for further analysis. If the trip assignments show that the proposed action would generate 50 or more peak hour vehicle trips at an intersection, 200 or more peak hour rail trips at a station, 50 or more peak hour bus trips in one direction along a bus route, 25 or more peak hour trips by Citywide Ferry Service in a single direction on a single route or 50 or more at a ferry landing, or 200 or more peak hour pedestrian trips traversing a sidewalk, corner area or crosswalk, then further quantified operational analyses may be warranted to assess the potential for significant adverse impacts on traffic, transit, pedestrians, vehicular and pedestrian safety, and parking.

Traffic

As shown in **Table 2**, the number of incremental vehicle trips generated by the Proposed Actions—170 (inbound and outbound combined) in each of the AM and PM peak hours—would exceed the 50-trip threshold in each period, and a Level 2 screening analysis is therefore warranted for these periods to determine which if any intersections would require quantified analysis.

TABLE 2: Travel Demand Forecast

PERSON TRIPS	TRIPS BY AUTO				TRANSIT (BUS) TRIPS				TOTAL PERSON TRIPS			
	AM		PM		AM		PM		AM		PM	
	Peak Hour 5:30 a.m. - 6:30 a.m.		Peak Hour 5:30 p.m. - 6:30 p.m.		Peak Hour 5:30 a.m. - 6:30 a.m.		Peak Hour 5:30 p.m. - 6:30 p.m.		Peak Hour 5:30 a.m. - 6:30 a.m.		Peak Hour 5:30 p.m. - 6:30 p.m.	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
First Shift (6 a.m. - 6 p.m.)	92	0	0	92	11	0	0	11	103	0	0	103
Second Shift (6 p.m. - 6 a.m.)	0	90	90	0	0	10	10	0	0	100	100	0
Total	92	90	90	92	11	10	10	11	103	100	100	103

AUTO TRIPS	AM		PM			
	Peak Hour 5:30 a.m. - 6:30 a.m.	In	Out	Peak Hour 5:30 p.m. - 6:30 p.m.	In	Out
First Shift (6 a.m. - 6 p.m.)	86	0	0	86		
Second Shift (6 p.m. - 6 a.m.)	0	84	84	0		
Total	86	84	84	86		

Notes:

Conservatively assumes 100% of tenant workers would arrive/depart within the one hour period at the start/end of their shift, and that three management staff would arrive in the AM peak hour and depart in the PM peak hour.

Truck and visitor trips associated with office and warehouse uses not expected to occur during peak worker travel periods.

Transit

According to the general thresholds used by the MTA and specified in the *CEQR Technical Manual*, detailed transit analyses are generally not required if a proposed action is projected to result in fewer than 200 peak hour rail or bus transit riders. If a proposed action would result in 50 or more bus passengers being assigned to a single bus route in one direction, or if it would result in an increase of 200 or more passengers at a single subway station or on a single subway line, a detailed bus and/or subway analysis would be warranted. Transit analyses typically focus on the weekday AM and PM commuter peak hours as it is during these periods that overall demand on the subway and bus systems is usually highest.

As shown in **Table 2**, it is estimated that the Proposed Actions would generate a total of approximately 21 incremental transit trips (inbound and outbound combined) in each of the AM and PM peak hours. As these numbers of trips would be less than the 200-trip *CEQR Technical Manual* analysis threshold, a detailed analysis of transit conditions under the Proposed Actions is not warranted.

Citywide Ferry Service (CWFS)

Based on *CEQR Technical Manual* guidance, a quantified analysis of conditions on CWFS routes and landings is typically required if a proposed action would generate 25 or more peak hour ferry trips in a single direction on a single route or 50 or more at a ferry landing. As there are no ferry landings proximate to the Project Site, the Proposed Actions are expected to generate little if any demand on the CWFS. Therefore, a detailed analysis of CWFS conditions under the Proposed Actions is not warranted and not included in the EIS.

Pedestrians

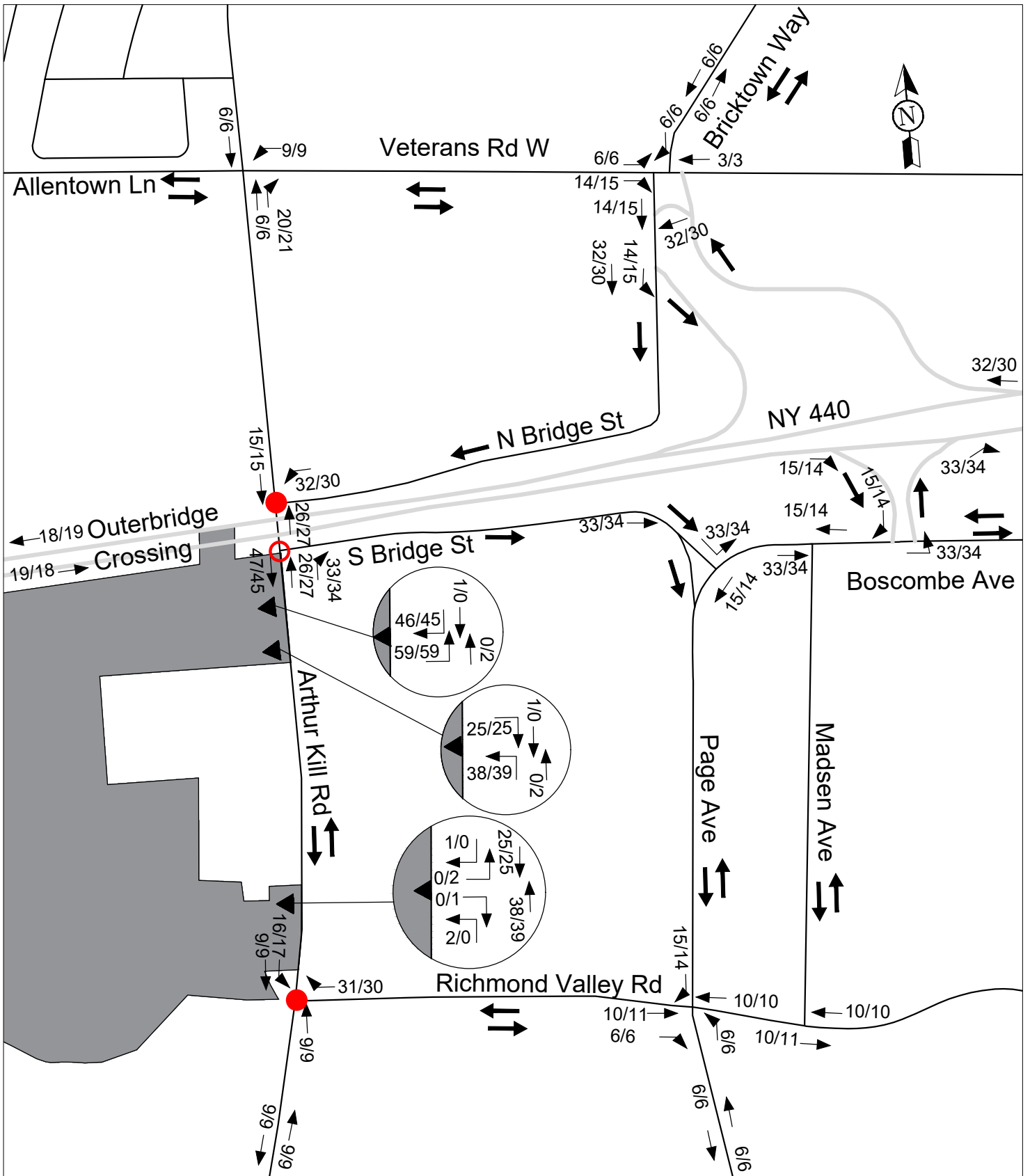
According to *CEQR Technical Manual* guidance, a quantified analysis of pedestrian conditions is typically required if a proposed action would result in 200 or more peak hour pedestrian trips at any pedestrian element (sidewalk, corner area or crosswalk). As shown in **Table 2**, the Proposed Actions would generate an incremental demand of approximately 21 total pedestrian trips (inbound and outbound combined) en route to and from nearby bus stops in each of the AM and PM peak hours. As the numbers of trips in each of these periods would be less than the 200-trip threshold, a detailed analysis of pedestrian conditions under the Proposed Actions is not warranted.

LEVEL 2 SCREENING ASSESSMENT

Traffic

Area Street Network

The street network in the vicinity of the Project Site is shown in **Figure 3**. As discussed above, access to the Project Site would be provided by four curb cuts on Arthur Kill Road which borders the site on the east (see **Figure 2**). **Arthur Kill Road** is a minor arterial roadway that operates with one moving lane in each direction. It has a mapped width of 80 feet, but the roadway is typically only 30 feet in width except for limited segments where it has been built out to the mapped street line adjacent to new development. It is a New York City Department of Transportation (NYCDOT) designated local truck route and is traversed by NYCT S78 local buses. To the north of the Project Site, Arthur Kill Road intersects South Bridge Street and North Bridge Street, which flank the approach span to the Outerbridge Crossing on the south and north, respectively, and Veterans Road West. **South Bridge Street** originates at Arthur Kill Road and operates one-way eastbound with one moving lane and parking along one or both curbs. It terminates at an intersection with Page Avenue and Boscombe Avenue. **Page Avenue**, which extends southward from the intersection, operates with one southbound lane, two northbound lanes, and parking along one or both curbs. It is a designated Local Truck Route. **Boscombe Avenue** extends eastward from the intersection and operates with two moving lanes in each direction separated by a narrow raised median. It is also a designated Local Truck Route and provides access to on- and off-ramps for northbound **New York State Route 440 (NY 440)**, a principal arterial expressway and designated Through Truck Route connecting the Outerbridge Crossing to the south with the Staten Island Expressway (I-278) to the north. The South Bridge Street/Page Avenue/Boscombe Avenue intersection



Legend:

- Project Site
- Analyzed Signalized Intersection
- Analyzed Unsignalized Intersection
- 8/8 = Incremental AM/PM Peak Hour Vehicle Trips
- Proposed Project Site Entrance

is signalized, and there is a channelized right turn lane from South Bridge Street onto southbound Page Avenue.

North Bridge Street is a minor arterial that extends southbound and westbound from Veterans Road West to Arthur Kill Road, and both of these intersections are signalized. It operates one-way southbound with one moving lane and provides access to and from southbound NY 440. **Veterans Road West**, which is also a minor arterial, intersects Arthur Kill Road to the north of the Project Site and extends to the east and north. It operates two-way with one to two moving lanes in each direction, is a designated Local Truck Route, and is traversed by NYCT S74, S78 and S84 buses. Its intersections with Arthur Kill Road and with North Bridge Street are signalized.

At the south end of the Project Site is **Richmond Valley Road**, a two-way local street which extends eastward from a signalized intersection with Arthur Kill Road. (A mapped but unbuilt segment of Richmond Valley Road borders the Project Site on the south.) It operates with one moving lane in each direction and is a designated Local Truck Route. East of the Project Site it intersects Page Avenue at a signalized intersection.

Traffic Assignment and Analyzed Intersections

As shown in **Table 2** and discussed above, the Proposed Actions are expected to result in an incremental increase of approximately 170 vehicle trips during each of the weekday AM and PM peak hours. As these traffic volumes would exceed 50 trips in each peak hour (the *CEQR Technical Manual* Level 1 screening threshold for a detailed analysis), an assignment of incremental traffic volumes was prepared for each period to help identify individual intersections for analysis (a Level 2 screening assessment).

The assignment of worker auto trips to the street network in proximity to the Project Site was based on the directional distribution shown in **Table 3**, which was derived from 2012-2016 American Community Survey (ACS) five-year reverse journey-to-work data. Based on the ACS data, the majority of worker trips (approximately 78 percent) are expected to have origin points on Staten Island. Approximately 17 percent would originate in New Jersey, and the remaining five percent would originate in other boroughs (Brooklyn, Manhattan and Queens). Based on this distribution and likely travel routes, approximately 37 percent of worker auto trips were assigned to/from the north via NY 440 which, as described above, is a principal arterial expressway and provides access to the Staten Island Expressway (I-278). Seventeen percent were assigned to New Jersey via NY 440 to/from the south. The remaining 46 percent were assumed to access the site primarily via the local street network, including Arthur Kill Road, Bricktown Road, Richmond Valley Road and Page Avenue. All tenant workers were assumed to park on-site, accessing the Project Site via the two planned curb cuts on Arthur Kill Road south of its intersection with South Bridge Street. Management staff and visitors were assumed to utilize the parking at the Cole House via the existing curb cut at that location.

TABLE 3: Directional Distribution of Worker Auto Trips

	Staten Island			Brooklyn	Manhattan	Queens	New Jersey
	North Shore	Mid-Island	South Shore				
% Distribution	11%	19%	48%	1%	2%	2%	17%

Notes: Based on 2012-2016 ACS five-year reverse journey-to-work data.

The assignment of incremental peak hour vehicle trips at intersections in proximity to the Project Site in the AM and PM peak hours is shown in **Figure 3**. As shown in **Figure 3**, a total of three intersections (two signalized, and one uncontrolled) were selected for detailed analysis as they would exceed the 50-trip threshold in the AM and/or PM peak hours. These include the following:

1. Arthur Kill Road @ North Bridge Street (signalized)
2. Arthur Kill Road @ South Bridge Street (uncontrolled)
3. Arthur Kill Road @ Richmond Valley Road (signalized)

In addition to these intersections, operation of the Project Site's driveways in the future with the Proposed Actions will also be analyzed.

Street User Safety

Under *CEQR Technical Manual* guidance, an evaluation of street user safety is typically needed for locations within traffic and pedestrian study areas that have been identified as high crash locations. These are defined as a location identified as a Vision Zero intersection or along a Vision Zero corridor, or where five or more pedestrian/bicyclist injury crashes have occurred in any consecutive 12 months of the most recent three-year period for which data are available.¹ Based on these criteria, no intersections in the vicinity of the Project Site are classified as high crash locations (see **Table 4** for a summary of crash data). In addition, as shown in **Table 2**, the Proposed Actions would result in the addition of no more than 21 pedestrians to nearby streets (primarily en route to/from nearby bus stops). It would also not geometrically or operationally redesign or reconfigure any study area intersection, and the Project Site is not located within a DOT-designated Senior Pedestrian Focus Area (SPFA) nor in proximity to sensitive land uses such as hospitals, schools, parks, nursing homes, or senior housing.

¹ Vision Zero seeks to eliminate all deaths from traffic crashes regardless of whether on foot, bicycle, or inside of a motor vehicle. Vision Zero corridors and intersections are identified as locations that disproportionately account for pedestrian fatalities and severe injuries, thus prioritizing them for safety interventions.

TABLE 4: Summary of Motor Vehicle Crash Data 2017-2019

Intersection		Pedestrian Injury Crashes			Bicycle Injury Crashes			Total Pedestrian/ Bicycle Injury Crashes			Total Crashes		
		2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
North-South	East-West												
Arthur Kill Rd	Veterans Rd W/Allentown Ln	1	0	0	0	0	0	1	0	0	6	12	13
	N Bridge St	0	0	0	0	0	0	0	0	0	1	4	1
	S Bridge St	0	0	0	0	0	0	0	0	0	2	1	2
	Richmond Valley Rd	0	0	0	0	0	0	0	0	0	6	1	5
	Nassau Pl	0	0	0	0	0	0	0	0	0	0	2	0
	Averill Pl/Ellis St	0	0	0	0	0	0	0	0	0	0	1	2
	Lion St/St Andrews Pl	0	0	0	0	0	0	0	0	0	1	0	1
Veterans Rd W	N Bridge St/Bricktown Way	0	0	0	0	0	0	0	0	0	1	1	1
Boscombe Av	Madsen Av	0	0	0	0	0	0	0	0	0	1	4	7
	Page Av/S Bridge St	0	0	0	0	0	0	0	0	0	1	1	3
Page Av	Richmond Valley Rd	0	0	0	1	0	0	1	0	0	8	14	9

PARKING

Tenant operations at the Project Site are expected to generate a peak demand of approximately 86 parking spaces during the first work shift and 84 spaces during the second work shift. As a total of approximately 109 on-site parking spaces would be provided for tenant use, it is anticipated that all of this demand would be accommodated on-site. The 12 additional on-site accessory parking spaces that would be provided at the Cole House are also expected to be sufficient to accommodate all of the parking demand associated with the approximately three management and four site security staff employed at the Project Site, as well as any potential visitors.

As all project-generated parking demand would be accommodated by on-site accessory parking, the Proposed Actions would not result in, nor contribute to, a shortfall of on-street or off-street parking in the vicinity of the Project Site.

SUMMARY OF CONCLUSIONS

Based on a preliminary travel demand forecast and vehicle trip assignment, incremental vehicle trips from the Proposed Project would exceed the *CEQR Technical Manual* 50-trip analysis threshold in the AM and/or PM peak hour at a total of three intersections along Arthur Kill Road – North Bridge Street (signalized), South Bridge Street (uncontrolled) and Richmond Valley Road (signalized). A detailed analysis of AM and PM peak hour traffic conditions at these three intersections is therefore warranted and will be included in the EIS. Detailed analyses of transit, ferry and pedestrian conditions were not found to be warranted based on *CEQR Technical Manual* guidance and will not be included in the EIS.

Appendix 2

Air Quality Analysis Methodology Memorandum

Memo

Date: October 31st, 2022

Project: Arthur Kill Terminal

To: Mauricio Garcia, Yin Qing Liu (NYCDCP)

From: Ronald Ying / JP Magron (HDR)

Subject: Arthur Kill Terminal – Proposed Air Quality Methodology for Draft SOW

Introduction

This memorandum summarizes the air quality analysis methodology for the Air Quality chapter of the Arthur Kill Terminal (AKT) EIS. The Proposed Action may affect ambient air quality by pollutants produced by on-road sources such as motor vehicles and non-road sources such as the marine vessels that would dock at the AKT Terminal. Those emission sources are referred to as “mobile sources.” Emission from a fixed location, such as buildings heating and hot water system and diesel-powered heavy lift machinery introduced by AKT’s tenants, are usually referred to as “stationary sources.” An air quality assessment studies the potential impact from both stationary and mobile emission sources during the construction and operational phases of the project to the sensitive receptors nearby. It is noted that the Proposed Action would not introduce any new sensitive receptors to the Project Site. This air quality assessment will follow the methodology outlined by the 2021 CEQR Technical Manual (December 2021 Edition) to determine the potential impacts on the construction and operation phases.

Methodology

Mobile Source Screening

The peak hour traffic generated by the Proposed Project would be less than the CEQR screening threshold of 170 peak hour auto trips for CO per intersection and 23 HDDV for PM2.5. As a result, a qualitative and screening analysis is anticipated for the mobile source on-road operation. Outerbridge Crossing can be construed as an atypical roadway per CEQR TM Chapter 17, Section 210. However, since the proposed project will introduce an industrial use in an industrial district, no sensitive receptor will be located within 200 feet of the atypical roadway and, therefore, no quantitative assessment is assumed. In conclusion, a screening analysis is proposed to ensure CEQR compliance regarding mobile source air pollutants increment induced by the project.

Mobile Source – Parking Facility

The project is expected to create a new parking facility onsite.

A total of approximately 109 surface parking spaces are planned for the warehouse/tenant office area, and another 12 surface parking spaces are planned for the Cole House for the owner office area. This brings the total number of surface parking spaces on the Project Site to 121.

Using the proposed onsite parking facilities, emissions from the vehicles could potentially affect pollutant levels at nearby sensitive land uses. A detailed analysis will be conducted to estimate the potential air quality impacts. In addition, background traffic volumes will be gathered on the following roadways to establish the pollutant contributions from on-street vehicles:

- Outerbridge Crossing
- Arthur Kill Road

Hourly parking in and out data from weekdays will be estimated. The peak hour ins and outs will be selected as representative volume.

The pollutants of concern for parking facilities are carbon monoxide (CO) and fine particulate matter (PM_{2.5}). Per CEQR guidance, the pollutant concentrations will be estimated at locations on the near and far pedestrian sidewalks to ensure that the maximum cumulative effects from on-street traffic and parking emissions are estimated.

EPA Motor Vehicle Emission Simulator ver. 3 (MOVES 3) will be used to determine the CO and PM_{2.5} emission factors for vehicles entering, exiting, and idling within the parking facility and vehicles traveling on nearby streets¹. Vehicles exiting the parking will be assumed to idle for one minute before departing, and the speed within the surface parking area will be assumed to be 5 miles per hour (mph). Speeds on the nearby streets are assumed to be 25-30 mph².

Contributions from on-street CO and PM_{2.5} vehicular emissions at these receptor locations will be calculated through dispersion modeling analyses using the latest EPA's AERMOD dispersion model using five consecutive years of meteorological data.

Fugitive dust will be estimated using equations from Section 13.2.1-3 of EPA's AP-42 for roadways with more than 5,000 vehicles a day. The formulas are based on an average fleet weight, which varies according to the vehicular mix for a given roadway, and a silt loading factor—a silt loading factor is assumed to be 0.1 g/m².

Cumulative on-street, parking area, and background CO and PM_{2.5} concentrations will be provided as part of the analysis. The increment for each pollutant will be compared against the di minimis thresholds set forth in the CEQR Technical Manual.

Mobile Source – Marine Vessels

The additional marine vessels going in and out of the proposed AKT is considered insignificant compared to the current maritime traffic on the Arthur Kill. On one hand and based on available AIS (Automatic Identification System) vessel frequency data for the period from January 1, 2016 to December 31, 2017, there is about 50 vessel trips a day in either directions by the project

¹ Traffic volume data could be retrieved from reliable sources such as NYS DOT traffic data (<https://gisportalny.dot.ny.gov/portalny/apps/webappviewer/index.html?id=28537cbc8b5941e19cf8e959b16797b4rather>), or NYC DOT TIMS database

² If a transportation impact analysis is not required to establish existing vehicle speed, speed will be referenced from resources such as NYC DOT TIMS database or the free Uber Movement website to verify if the posted speed on Arthur Kill Road is an appropriate estimation of the analysis.

site.³ On the other hand, it is expected that the proposed terminal operation would require an average of one (1) vessel movement per day, from inbound or outbound cargo vessels, or an inbound or outbound feeder barge or a wind turbine installation vessel (WTIV). As the Arthur Kill is already an active and heavily-used maritime navigational channel today, the addition of the marine traffic will be minimal compared to existing marine traffic and thus not be considered a major new emission source. In addition, the vessels coming to AKT would be regulated and compliant with the USEPA’s emission standards and regulations for Marine Vessels. Therefore, a qualitative assessment will be required.



Figure 1: AKT Conceptual Layout Plan

Stationary Source

Operational stationary air quality emissions would be emitted from the onsite activities, such as logistics and deliveries activities, idling/operating activities of marine vessels while at berth, onsite material loading activities within the terminal laydown and assembly areas, and heating, ventilation, and air conditioning (HVAC) systems among the buildings on site (which would include a 22,472-sf warehouse containing accessory office space and the renovation of the existing 4,212 Cole House building which would be converted into office space with a visitors areas). Based on preliminary facility design O&M guidelines, AKT’s typical transport and handling equipment would include crawler cranes, ring cranes, rubber-tired forklifts and

³ MRCE Memorandum of May 4, 2022 for Navigational Risk Assessment – Task 11 (Risks to Arthur Kill Channel Vessel Traffic)

telescoping manlifts, as well as 36-axle self-propelled modular transporters (SPMT) with power packs per **Table 1** below:

Table 1: AKT Typical Transportation and Handling Equipment

Equipment	Type	Engine Power (HP)
Liebherr LR 11350	Crawler Crane	1000
Demag CC 9800	Crawler Crane	516
Demag CC 2800	Crawler Crane	530
36-axle SPMT with Power Pack	SPMT	502
Forklifts	Rubber Tired	25 - 300
Telescoping Manlift	Rubber Tired	25 - 300

Hoteling marine vessels docking at AKT would include the WTIV, Jackup Feeder Vessel, and Cargo Vessels. The WTIV and Jackup Feeder would hotel on the outbound quay (area 5 of **Figure 1**). As illustrated in **Figure 2**, wind turbine components are lifted from the quayside onto the vessel deck using the on shore crane or the crane on board.



Figure 2: Wind turbine components loading activities to WTIV

The cargo vessel would hotel on the inbound quay (area 3 of **Figure 1**). As illustrated in **Figure 3**, wind turbine components are delivered to AKT by the the cargo vessel.



Figure 3: Typical Cargo Vessels

While there are potential sensitive receptors (day care and medical offices) on both sides of Arthur Kill Road near the Project Site, it is expected that the wind turbine assembly activities and material loading – which are the areas 3, 4, 5 and 6 above in **Figure 1** with the bulk of the heavy emitting diesel equipment – will occur beyond the 400-foot threshold from any sensitive receptors on Arthur Kill Road. Therefore, an industrial screening assessment is assumed for these activities. At the time of writing this methodology memo, the applicant is in the process of verifying if the proposed facility would require Title V permit or State Air Facility Permit. If these permits are required, an air quality impact analysis for the facility will be included in the EIS.

Construction Air Quality Impact

Construction air quality impacts may arise from on-road sources, such as the heavy truck traffic for material hauling and non-road sources from dredging and other construction activities. A qualitative assessment will be provided since the proposed terminal is located in an industrial-zoned district and the construction is considered short-term (2-year) based on currently available information.

General Conformity

Given the future need for federal permits under Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 408 Approval (under Section 14 of the Rivers and Harbors Appropriation Act of 1899, as amended and codified in 33 USC 408 [Section 408]) from the USACE NY District, a General Conformity (40 CFR 93) will be required to ensure that the action(s) taken by the federal agency will not interfere with the NY State Implementation Plan (SIP) to attain and maintain the National Ambient Air Quality Standards (NAAQS).

Since the project is located in an Ozone (8-hr) nonattainment / PM_{2.5} maintenance area, it is anticipated that General Conformity analyses for the construction activities and on-site operational activities, for the equipment listed in **Table 1** above, will be required. Therefore, this quantitative analysis, although required for Federal compliance and not CEQR, will be provided in this EIS in order to meet the request from NYSDEC during Scoping. It should be noted that the Operational Emissions will only include on-site terminal activities (from offloading, storing, marshalling, loading); and not any of the marine emissions for inbound (manufacturer to AKT)/outbound (AKT to OSW Lease Area) vessel traffic. These marine emissions are the responsibility of the OSW Developers as part of their own Federal regulatory review process.

Air Quality Assessment Methodology Summary

The table below summarize the air quality assessments level of effort:

Assessment	Level of Effort
Mobile Source (Operation)	Mobile Source Screening
Mobile Source (Parking)	Quantitative Assessment
Stationary Source (HVAC)	HVAC Screening
Stationary Source (Onsite Activities)	Industrial Screening
Construction	Qualitative Assessment
General Conformity	Quantitative Assessment

Appendix 3

Noise Monitoring Approach Memorandum



Philip Habib & Associates

Engineers and Planners • 102 Madison Avenue • New York, NY 10016 • 212 929 5656 • 212 929 5605 (fax)

TO: New York City Department of City Planning

FROM: Philip Habib & Associates

SUBJECT: Arthur Kill Terminal – Noise Monitoring & Analysis Approach for EIS Analysis

DATE: November 10, 2022

The purpose of this memorandum is to describe the noise analysis approach for the Arthur Kill Terminal Environmental Impact Statement (EIS). The Arthur Kill Terminal project entails a series of land use actions (the “Proposed Actions”) to facilitate the construction of an approximately 32-acre state-of-the-art port designed for the staging, assembly and pre-commissioning of wind turbine generators (WTGs) and other offshore wind (OSW) components before they are loaded onto vessels for transportation to and installation at offshore wind farms (the “Proposed Project”). No active wind farms or turbines are proposed on the Project Site. The Project Site encompasses Block 7620, Lot 1, and Block 7632, Lots 6, 50, 150, and 151 in the Richmond Valley neighborhood of Staten Island Community District 3.

The Proposed Actions include a City Map change, a landfill action, a zoning text amendment, zoning authorizations, a zoning certification, and special permit. The Proposed Project would include an on-site warehouse and office building with approximately 15,266 square feet (sf) of warehouse space and 7,206 sf of accessory office use, located at the northeast corner of the Project Site, and the adaptive reuse of an existing 4,212 sf residential structure (the “Cole House”) at the southeast corner of the site. The warehouse/office building would provide 109 surface accessory parking spaces. The Cole House would provide 12 surface accessory parking spaces. The warehouse would be used for storage of tools, spare parts and consumables. At the southeast corner of the Project Site, the existing Cole House and surrounding natural landscaped area would be preserved to the maximum extent possible and adaptively reused as the Owner’s office area and an educational visitor area. The Cole House would be preserved and aesthetically/structurally rehabilitated and improved to meet all code requirements to the maximum extent possible. The visitor area at the Cole House is expected to provide a public observation deck on the second floor and several rooms on the first floor dedicated to the history of the house, the Richmond Valley area of Staten Island, the history of the site, and information about the offshore wind industry and workforce and educational training opportunities in New York. It should be noted that these uses at the Cole House would be considered accessory to the proposed manufacturing uses at the Project Site, and therefore would not be considered a noise sensitive receptor. It is expected that the Proposed Project would be constructed over a 20 to 23-month period and would be completed and operational within the 2025 Analysis Year.

This memorandum presents a summary of the selection of noise receptor locations and describes the noise monitoring approach to determine existing ambient noise levels at the Project Site. As the Proposed Actions would not introduce any new sensitive receptors to the Project Site, the measured existing noise levels will be used as part of the noise analysis to examine whether there are any off-site

locations where there is potential for the Proposed Actions to result in significant adverse mobile source (i.e. the doubling of Noise Passenger Car Equivalents [PCEs]) or stationary source noise impacts, using the methodologies described in Chapter 19, “Noise,” Section 300 of the *CEQR Technical Manual*. In the event significant adverse noise impacts are identified, mitigation measures required to avoid or reduce such impacts will also be examined and discussed, if necessary.

Selection of Noise Monitoring Locations

As the first step in this process, a field visit was performed in the morning hours during April 2022 to develop a list of proposed receptor locations. According to PHA’s field observations, motor-vehicle traffic is the dominant noise source throughout the Project Area. Roadways in the vicinity of the Project Site include Arthur Kill Road along the eastern side of the Project Site, the Outerbridge Crossing to the north, and Richmond Valley Road extending to the east.

In general, the levels of existing noise at each receptor location are primarily influenced by the amount of traffic on immediately adjacent or nearby roadways including Arthur Kill Road and the Outerbridge Crossing; there are no elevated train lines or nearby stationary noise sources in the vicinity of the Project Site that could significantly contribute to the area’s ambient noise levels.

A total of four noise receptor locations were selected due to their proximity to the Project Site and were generally located along the perimeter of the Project Site. The four selected noise receptor locations surrounding the Project Site are described in **Table 1** and shown in **Figure 1**. These receptors would represent the nearby sensitive noise receptors with the greatest potential to experience significant noise increases as a result of the Proposed Actions. Such existing sensitive receptors include the buildings at 4849 and 4885 Arthur Kill Road. 4849 Arthur Kill Road is occupied by a radiology facility and 4885 Arthur Kill Road contains an urgent care center, and both are thus considered sensitive receptors for CEQR purposes. It should be noted that while the building at 4915 Arthur Kill Road is classified as a hospital/health use, the site is occupied by an animal hospital, and therefore is not considered a sensitive receptor. Sensitive receptors further from the Project Site would be less likely to experience significant noise increases as a result of the Proposed Actions.

Table 1: Noise Receptor Locations

Receptor ¹	Receptor Frontages	Receptor Location
1	Arthur Kill Road (Cole House)	Approximately 235 feet north of Richmond Valley Road. In front of the Cole House.
2	Arthur Kill Road (Outerbridge Crossing)	Approximately 205 feet south of the Outerbridge Crossing
3	Arthur Kill	Approximate midpoint of the Project Site’s western frontage along Arthur Kill (approximately 610 feet south of the Outerbridge Crossing)
4	4885 Arthur Kill Road (western frontage)	Approximate midpoint of 4885 Arthur Kill Road’s (Block 7632, Lot 23) western frontage facing the Project Site (approximately 620 feet north of Richmond Valley Road and 200 feet west of Arthur Kill Road)

Notes:

¹ Receptor locations shown in Figure 1.


These four receptor locations shall provide an effective and conservative representation of existing ambient noise levels at the Project Site.




Legend

 Project Site

 Existing Buildings

 7632 Tax Blocks

 1 Tax Lots

 1 Noise Receptor Location

Noise Monitoring

PHA will conduct noise monitoring at four noise receptor locations along the Project Site's eastern and western frontages (refer to **Table 1** and **Figure 1**). Noise measurements will include 20-minute spot noise level measurements during the typical weekday for the Proposed Project (Tuesday, Wednesday, Thursday) AM 1 (5:30-6:30 AM), AM2 (8:00-9:00 AM), midday (12:00-1:00 PM), and PM (5:00-6:00 PM) peak periods at the three receptor locations where vehicular traffic (Receptor Locations 1 and 2) or marine activity (Receptor Location 3) is the main source of ambient noise levels, and the one receptor location where project-generated stationary noise could contribute to ambient noise levels at nearby sensitive receptors (Receptor Location 4). Traffic counts and other noise monitoring information (i.e., measurement photos and field notes) will be conducted simultaneously during each noise measurement per 2021 *CEQR Technical Manual* guidance.

Traffic Noise Monitoring and Analysis

As discussed above, 20-minute spot noise measurements will be conducted at all four receptor locations. These will include receptor locations 1 through 4, where noise measurements will be conducted during the typical weekday peak periods (AM, midday, PM). In addition, as a shift change for the Proposed Project would occur between 5:30 and 6:30 AM, an additional noise monitoring period will occur between 5:30 to 6:30 AM to account for additional vehicle trips generated by the Proposed Project. The noise monitors will be mounted at a height of approximately five feet above the ground surface on a tripod and approximately six feet or more away from any large sound-reflecting surface to avoid major interference with sound propagation. Additionally, where vehicular traffic is the dominant source of ambient noise (i.e., Receptor Locations 1 and 2), vehicular traffic will be counted and classified during each spot noise measurement and used to predict future vehicular traffic in the analysis. In the event there are significant differences between traffic counts during the noise measurement and the existing traffic condition presented in the EIS's transportation analysis, existing noise measurements will be adjusted based on the difference between the vehicle counts conducted during noise measurement and the existing traffic condition collected and summarized in the EIS's Transportation chapter.

Pursuant to CEQR guidance, future noise levels from vehicular traffic will be calculated using the proportional modeling technique outlined in Chapter 19, "Noise" of the 2021 *CEQR Technical Manual*. Values calculated using this proportional modeling will be used directly, and as adjustment factors accounting for site-specific differences, to determine future noise levels. For any roadways fronting the Project Site that experience low existing traffic volumes, preliminary assessments using the proportional modeling technique may cause noticeable increases in noise levels. To more accurately forecast noise at these locations, a refined analysis using Traffic Noise Modeling (TNM) may be necessary. TNM is a computerized model developed for the Federal Highway Administration (FHWA) that calculates the noise contribution of each roadway segment to a given noise receptor.

Equipment Used During Noise Monitoring

Measurements will be performed using a Sound Level Meter (SLM) Type 1 instrument, in accordance with American National Standards Institute (ANSI) Standard S1.4-1983 (R2006); specifically, a Brüel & Kjær Type 4189 ½-inch microphone connected to a Brüel & Kjær Model 2250 SLM. The SLM will have a laboratory calibration date within one year of the date of the measurements and the SLMs will be calibrated before and after readings with a Brüel & Kjær Type 4231 Sound Level Calibrator using the appropriate adaptor. Measured quantities will include the L_{eq} , L_1 , L_{10} , L_{50} , and L_{90} values and ⅓-octave

bands. A windscreen will be used during all sound measurements, except for calibration. All measurement procedures will be based on the guidelines outlined in ANSI Standard S1.13-2005.

Sound Weighting

Sound is often measured and described in terms of its overall energy, taking all frequencies into account. However, the hearing process is not the same at all frequencies. Therefore, noise measurements are often adjusted or weighted as a function of frequency to account for human perception and sensitivities of sound. The most common weighting networks used are the A- and C-weighted scales (dBA and dBC scales, respectively).

The dBA scale is correlated with annoyance measures and is most responsive to the mid-frequencies (500 Hz to 4,000 Hz), which human ears are most sensitive to. While the dBA scale is typically used for environmental assessments, the dBC scale is largely used for describing and evaluating environmental noise sources that have high values in the lower frequencies (i.e., below 500 Hz), such as stationary industrial and mechanical noise sources (i.e. power substations). The dBC scale is also often used for measuring the peak value of a sound of stationary sources.

Measurements in dBC are more common for projects dealing with stationary mechanical noise sources. However, measurements in dBA are normally used in environmental assessments. As the Proposed Project will analyze the potential for both mobile and stationary source impacts on existing sensitive receptors, measurements at all receptor locations will be made on the dBA scale, whereas measurements at Receptor Location 4 will also be made on the dBC scale, where appropriate.

Other Noise Concerns

Stationary Sources

Mechanical Equipment

The building mechanical systems (i.e., heating, ventilation, and air conditioning [HVAC] systems) for any/all buildings associated with the Proposed Actions would be designed to meet all applicable noise regulations (i.e., Subchapters 5, §24-227 of the New York City Noise Control Code, the New York City Department of Buildings Code) and to avoid producing levels that would result in any significant increase in ambient noise levels. Additionally, as the Project Area is located within an M1-1 district, the Proposed Project's industrial uses will be required to meet certain performance standards related to noise, as is pursuant to ZR Section 42-21 (*Performance Standards Regulating Noise*). Specifically, for all industrial uses at the Project Site, the sound pressure level (measured in the "C" scale) from any activity, whether open or enclosed, may not exceed the maximum permitted decibel levels as outlined in ZR Section 42-213 (*Maximum Permitted Decibel Levels*).

Operational Activities

As described above, the Proposed Project's operational activities would include the staging, assembly and pre-commissioning of wind turbine generators (WTGs) and other offshore wind (OSW) components before they are loaded onto vessels for transportation to and installation at offshore wind farms. No active wind farms or turbines are proposed on the Project Site. The closest sensitive receptors to the Project Site include a single-family house located at 4924 Arthur Kill Road, which is across the street

from the Cole House building, as well as a radiology facility at 4849 Arthur Kill Road and a medical urgent care facility at 4885 Arthur Kill Road, both of which are adjacent to the Project Site. Per ZR 42-20, uses within the M1-1 district are subject to performance standards and include decibel limits depending on the octave band and specific manufacturing district. The Proposed Project would comply with all existing zoning regulations pursuant to ZR 42-20. However, as operations at the Project Site would include some noise-generating on-site equipment which are anticipated to operate within 1,500 feet of the existing sensitive receptors described above, with a direct line of site to those receptors, a detailed stationary source noise analysis is warranted and will be included in the DEIS. A list of on-site equipment that could affect nearby sensitive receptors is presented in **Table 2** and shown in **Figure 2**.

Table 2: Proposed Project's Operational Equipment List

Equipment ¹	Type	Sound Power Level (in dB)
Liebherr LR 11350	Crawler Crane	112
Demag CC 9800	Crawler Crane	109
Demag CC 2800	Crawler Crane	109
36-Axle SPMT with Power Pack	SPMT	111 ²
Forklifts	Rubber Tired	112
Telescoping Manlift	Rubber Tired	110

Notes:

¹ See **Figure 2** for accompanying Equipment Site Layout Plan

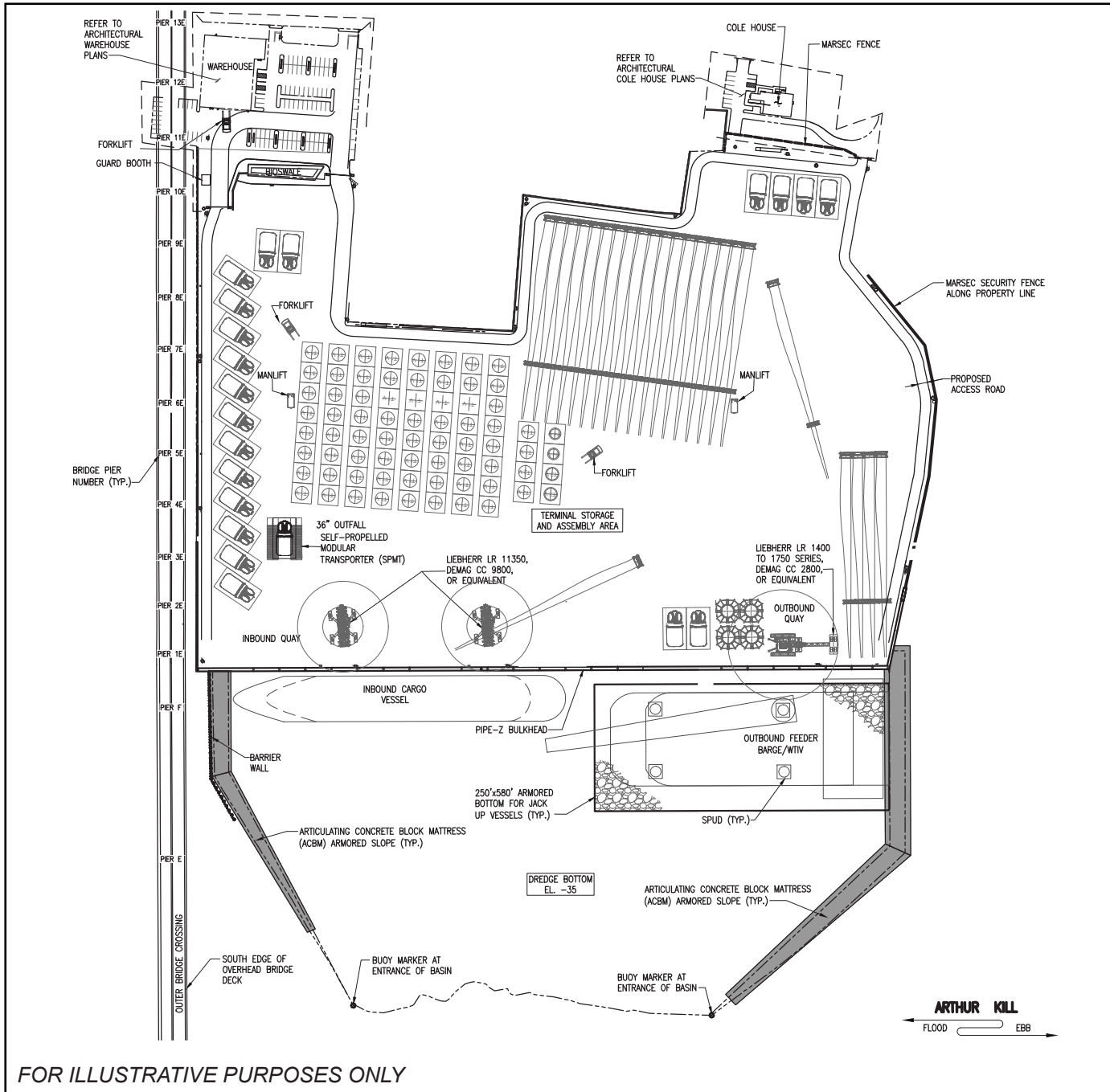
² As the sound power level of the SPMT is not readily available, it is conservatively assumed to have a similar sound power level to that of a generator, which has an average sound power level of 111 dB.

Noise Modeling for Operational Noise

Noise effects from operational activities will be evaluated using the CadnaA model, a computerized model developed by DataKustik for noise prediction and assessment. The model takes into account the reference sound pressure levels of the noise sources at 50 feet, attenuation with distance, ground contours, reflections from barriers and structures, attenuation due to shielding, etc. The CadnaA model is based on the acoustic propagation standards promulgated in International Standard ISO 9613-2. The CadnaA model is a state-of-the-art tool for noise analysis and is approved for stationary noise level prediction by the *CEQR Technical Manual*.

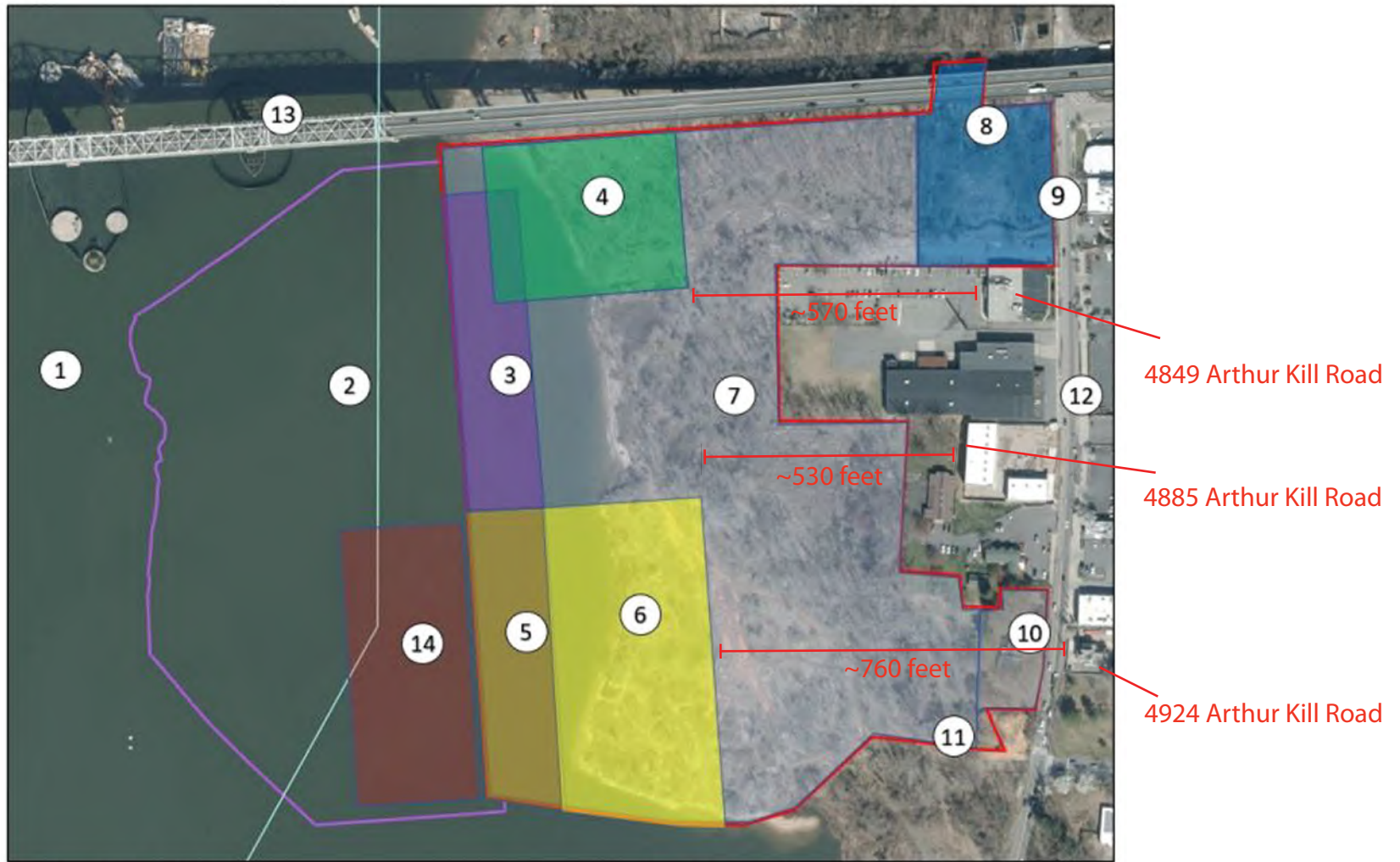
Geographic input data to be used with the CadnaA model includes CAD drawings defining likely site work areas, adjacent building footprints and heights, locations of streets, and locations of sensitive receptors. For each analysis, the geographic location and operational characteristics – including equipment usage rates (percentage of time operating at full power) for each piece of equipment operating at the Project Site, as well as noise control measures – will be input into the models. Reflections and shielding by barriers and project elements erected on the Project Site and shielding from adjacent barriers will also be accounted for in the model, where appropriate.

Various data sources and literature, such as the FTA Noise and Vibration Manual, FHWA Roadway Construction Noise model, and equipment noise levels available from manufacturers will be considered in consultation with DCP. Off-road equipment will be represented as point sources within the CadnaA model. The model will produce A-weighted $L_{eq(1)}$ noise levels at each receptor location for each analysis period, as well as the contribution from each noise source.



Arthur Kill Terminal

Figure 2a
Conceptual Arthur Kill Terminal Layout



- 1. Arthur Kill
- 2. Dredge Basin
- 3. Inbound Quay
- 4. Inbound Storage and Assembly Area
- 5. Outbound Quay
- 6. Pre-Assembly Area
- 7. Storage Area

- 8. Tenant Area (Warehouse & Office)
- 9. Main Entrance
- 10. Owner Area (Office & Visitor Center)
- 11. Secondary Gate
- 12. Arthur Kill Road
- 13. Outerbridge Crossing
- 14. Jack-up Vessel Pad

Construction Noise

Construction noise impacts may arise from mobile sources such as heavy truck traffic for material hauling and non-road sources from dredging and other construction activities. A qualitative assessment will be provided since the proposed terminal is located in an industrial-zoned district with a limited number of sensitive receptors within 400-feet of the site (including a non-conforming residential structure at 4924 Arthur Kill Road that predates the 1961 zoning amendment; a radiology facility at 4849 Arthur Kill Road; a medical urgent care facility at 4885 Arthur Kill Road; and an office building at 4864 Arthur Kill Road), and the construction is considered short-term (less than 2-years) based on currently available information.

Mobile Sources

Marine Vessels

Existing marine traffic would be monitored via the proposed receptor location 3. As the Arthur Kill waterway is already an active and heavily used maritime navigational channel today, the addition of the marine vessels associated with the Proposed Project would be minimal in comparison. Studies prepared for the Joint Permit Application have shown that there are currently about 50 vessel trips a day in either direction in Arthur Kill in the vicinity of the Project Site. The proposed terminal operation would require an average of one (1) vessel movement per day, from inbound or outbound cargo vessels, or an inbound or outbound feeder barge or a wind turbine installation vessel (WTIV), representing a minimal increase of approximately two percent in maritime traffic in Arthur Kill. As such, the additional number of marine vessels going in and out of the proposed AKT is considered insignificant compared to the current maritime traffic on the Arthur Kill and would thus not be considered a major new noise generator.

It should also be noted that, while cargo vessels supporting operations of the Proposed Project would enter and exit – as well as idle along the northern portion of the Project Site’s bulkhead (see **Figure 2**) – such vessels would have sound emissions similar to vessels currently in use in nearby waterways. Additionally, the International Maritime Organization (IMO) has established noise limits for vessels as a special agency of the United Nations whose primary purpose is to develop and maintain a regulatory framework for shipping including issues pertaining to safety, environmental concerns, legal matters, technical cooperation, maritime security, and the efficiency of shipping. The IMO publishes regulatory guidance documents on these issues (IMO 1981, 1975) and published “Noise Levels on Board Ships,” which contains the Code on Noise Levels on Board Ships (resolution A.468(XII)), developed to promote noise control at a national level within the framework of internationally agreed-upon guidelines. In terms of sound generation limits on vessels, resolution A.468 limits noise levels to 70 dBA at designated listening stations at the navigation bridge and windows during normal sail and operational conditions. In addition, the IMO further limits noise to 75 dBA at external areas and rescue stations with recommended limits 5 dBA lower. The vessels that would enter, exit, and idle at the Project Site are expected to comply with these IMO noise standards. Further, while the four existing sensitive receptors (4924, 4849, 4885, and 4864 Arthur Kill Road) would be located within 1,500 feet of the future vessels when docked and idling along the bulkhead line, it is unlikely that the buildings at 4924 and 4864 Arthur Kill Road would have a direct line of sight to such vessels. Therefore, the mobile source noise analysis will only focus on incremental vehicle trips generated by the Proposed Project.

Aircraft Noise

An initial aircraft noise impact screening analysis would be warranted if any new receptors would be located within a 65 dB(A) DNL contour. Since the Project Site is not located within an existing 65 dB(A) DNL contour, and as the Proposed Actions would not introduce any new sensitive receptors to the Project Site, no initial aircraft noise impact screening analysis is warranted.