176 Dikeman Street

Environmental Assessment

Prepared by:
Philip Habib & Associates, an AKRF Division

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Environmental Assessment

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Instructions for Completing Part 1

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

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

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

A. Project and Applicant/Sponsor Information.

Name of Action or Project: 176 Dikeman Street		
Project Location (describe, and attach a general location map): Brooklyn Block 574, Lots 1, 30 & 31		
Brief Description of Proposed Action (include purpose or need): The Applicant is seeking financial assistance from the New York City Industrial Development Agency (NYCIDA) to facilitate the construction of the Proposed Project an approximately 244,568-gross-square-foot (167,028 zoning square feet) facility to be used as a production studio. The Proposed Project which would consist of four soundstages that would be able to support two productions, aims to fill the demand for a state-of-the-art purpose-built production facility. The facility would be entirely self-contained and would meet the design standards of high-end productions including approximately 40' tall clear heights, with column free soundstages averaging over 16,700 square feet (sf) each with abundant HVAC and electric capacity required to meet today's increased infrastructure requirements. The Proposed Project would also contain approximately 202 parking spaces and five loading berths. The property is currently enrolled in the Department of Environmental Conservation's ("NYSDEC") Brownfield Cleanup Program ("BCP") under BCP Site. No. C224256. Additionally, the Applicant is pursuing LEED Gold Certification, underscoring the Applicant's dedication to comprehensive sustainability.		
Name of Applicant/Sponsor: Applicant is NYM 145 Wolcott, LLC; Sponsor is Bungalow Projects	Telepho[redacted] E-Mail:	
Address:		
City/PO: New York	State: NY	Zip Code: 10279
Project Contact (if not same as sponsor; give name and title/role): Susi Yu, contact information same as above.	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor): Same as sponsor.	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:

B. Government Approvals

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

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Council, Town Board, or Village Board of Trustees ☐Yes ☑No		
b. City, Town or Village Planning Board or Commission ☐Yes ☑No		
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☑Yes ☐No	NYCEDC Industrial Development Agency Financial Assistance	February 28, 2025
e. County agencies ☐Yes ☑No		
f. Regional agencies ☐Yes ☑No		
g. State agencies ☐Yes ☑No		
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

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

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

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

C. Planning and Zoning

C.1. Planning and zoning actions.

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

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

C.2. Adopted land use plans.

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

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

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

If Yes, identify the plan(s):

NYSDEC Remediation Site C224526, New York City Waterfront Coastal Zone

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

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
The site is zoned M2-1 under the New York City Zoning Resolution. See Figure B-3 in Attachment B, "Land Use, Zoning and Public Policy".

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

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

C.4. Existing community services.

a. In what school district is the project site located? New York City Community School District 15

b. What police or other public protection forces serve the project site?
New York City Police Department Precinct 76, New York State Police - SP Brooklyn

c. Which fire protection and emergency medical services serve the project site?
FDNY Engine 202/Ladder 101, New York Presbyterian Brooklyn Methodist Hospital, NYU Langone Health- Cobble Hill, the Brooklyn Hospital Center

d. What parks serve the project site?
Coffey Park, Louis Valentino Jr. Park and Pier, Pier 44 Waterfront Garden, Red Hook Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Commercial

b. a. Total acreage of the site of the proposed action? 1.95 acres
b. Total acreage to be physically disturbed? 1.95 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 1.95 acres

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

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

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: 24 months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

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

If Yes, show numbers of units proposed.

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

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

If Yes,

i. Total number of structures 1

ii. Dimensions (in feet) of largest proposed structure: 87.62 height; 200 width; and 275 length

iii. Approximate extent of building space to be heated or cooled: 244,568 square feet

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

If Yes,

i. Purpose of the impoundment: _____

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

_____

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

_____

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

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

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

_____

D.2. Project Operations

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

If Yes:

i .What is the purpose of the excavation or dredging? Remove non-native fill and soil to accommodate building construction

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

- Volume (specify tons or cubic yards): 21,460 cubic yards
- Over what duration of time? 2 months

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

Site-wide remedial excavation will be performed to remove non-native fill and soil with localized excavations to remove petroleum- and tar-impacted soil. There will also be localized excavations for stormwater detention tanks, elevator pitts, and pile capc.

iv. Will there be onsite dewatering or processing of excavated materials? ☑ Yes ☐ No

If yes, describe. Localized dewatering will be required to reach the base of remedial and detention tank excavations. Dewatered fluids will be transported and disposed of off-site at a facility permitted to treat the waste in accordance with applicable permits.

v. What is the total area to be dredged or excavated? 1.95 acres

vi. What is the maximum area to be worked at any one time? 1.95 acres

vii. What would be the maximum depth of excavation or dredging? 20 feet

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

ix. Summarize site reclamation goals and plan: _____

The excavation will remove non-native fill and soil at the site to prepare for construction.

_____

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

If Yes:

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

_____

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

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☑ No
If Yes, describe:

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

- acres of aquatic vegetation proposed to be removed:
- expected acreage of aquatic vegetation remaining after project completion:
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access):
- proposed method of plant removal:
- if chemical/herbicide treatment will be used, specify product(s):

v. Describe any proposed reclamation/mitigation following disturbance:

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

i. Total anticipated water usage/demand per day: 66,034 gallons/day

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

- Name of district or service area: New York City Water Supply System
- Does the existing public water supply have capacity to serve the proposal? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No
- Do existing lines serve the project site? ☑ Yes ☐ No

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

- Describe extensions or capacity expansions proposed to serve this project:
- Source(s) of supply for the district:

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

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

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

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

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

i. Total anticipated liquid waste generation per day: 24,547 gallons/day

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

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

- Name of wastewater treatment plant to be used: Red Hook Wastewater Resource Recovery Facility (WRRF)
- Name of district: Red Hook WRRF
- Does the existing wastewater treatment plant have capacity to serve the project? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No

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

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

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

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

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

_____

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

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

If Yes:

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

_____ Square feet or _____ acres (impervious surface)

_____ Square feet or _____ acres (parcel size)

ii. Describe types of new point sources. _____

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

_____

- If to surface waters, identify receiving water bodies or wetlands: _____
- Will stormwater runoff flow to adjacent properties? ☐ Yes ☐ No

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

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

If Yes, identify:

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

_____

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

_____

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

_____

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

If Yes:

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

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

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

If Yes:

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

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

_____

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

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

_____

_____

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

If Yes:

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

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

See Appendix I, "Travel Demand Factors Memorandum" for more information.

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

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

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

_____

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

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

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

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

If Yes:

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

135,564,042 annual Btu

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

Via grid/local utility (Con Edison)

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

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

i. During Construction:

- Monday - Friday: 7am-5pm
- Saturday: Occasionally as needed
- Sunday: -
- Holidays: -

ii. During Operations:

- Monday - Friday: 7am-12am
- Saturday: Occasionally as needed
- Sunday: Occasionally as needed
- Holidays: -

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

If yes:

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

Construction will likely produce noise, but it will be temporary. Noise associated with construction would be limited to typical construction activities and would be subject to compliance with the NYC Noise Code and US EPA noise emission standards for construction equipment.

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

Describe: _____

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

If yes:

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

Outdoor lighting on roof terraces with no incidence on neighbors. Outdoor lighting is located at the top of the building to feature aspects of the building's character.

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

Describe: _____

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

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

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

If Yes:

i. Product(s) to be stored _____

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

iii. Generally, describe the proposed storage facilities: _____

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

If Yes:

i. Describe proposed treatment(s):

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

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

If Yes:

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

- Construction: average of appx 137 tons per week (unit of time)
- Operation : approximately 18.4 tons per week (unit of time)

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

- Construction: Construction waste will be recycled and reused as possible to limit waste by a carting company.
- Operation: Food waste from catering will be composted. Office waste will be separated and recycled by tenants. Sets will be donated to charity for reuse.

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

- Construction: Private carter
- Operation: Private carter

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

If Yes:

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

ii. Anticipated rate of disposal/processing:

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

iii. If landfill, anticipated site life: _____ years

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

If Yes:

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

_____

_____

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

_____

_____

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

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

_____

_____

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

If Yes: provide name and location of facility: _____

_____

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

_____

_____

E. Site and Setting of Proposed Action

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

a. Existing land uses.

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

☑ Urban ☑ Industrial ☑ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)

☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

See Figure B-2 in Attachment B, "Land Use, Zoning and Public Policy"

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	1.95	1.95	0
• Forested	0	0	0
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	0	0	0
• Agricultural (includes active orchards, field, greenhouse etc.)	0	0	0
• Surface water features (lakes, ponds, streams, rivers, etc.)	0	0	0
• Wetlands (freshwater or tidal)	0	0	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: _____ _____			

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

i. If Yes: explain: _____

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

If Yes,

i. Identify Facilities:

South Brooklyn Community High School, PS 015, BASIS Independent Brooklyn Upper School, Red Hook Neighborhood School, BumbleBeesRus Daycare, Rainbow Palace Daycare, Red Hook Neighborhood Senior Center

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

If Yes:

i. Dimensions of the dam and impoundment:

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

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

_____

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

If Yes:

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

- If yes, cite sources/documentation: _____

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

_____

_____

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

_____

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

If Yes:

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

See Attachment C, "Hazardous Materials" for further discussion.

_____

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

If Yes:

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

☐ Yes – Spills Incidents database — Provide DEC ID number(s): _____

☑ Yes – Environmental Site Remediation database — Provide DEC ID number(s): Site C224256

☐ Neither database

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

_____

_____

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

If yes, provide DEC ID number(s): C224256, C224214, C224213, C224302, C224043, C224199, C224300, 224238

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

C22425 (project site): see Attachment C; Sites C224256, C224214 C224213, C224302, C224043,C224199, and C224300 are part of the Brownfield Cleanup Program; Site 224238 is part of the State Superfund Program

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

- If yes, DEC site ID number: Site C224256
- Describe the type of institutional control (e.g., deed restriction or easement): Easement to be established in the upcoming RAWP.
- Describe any use limitations: Prohibitions on the use of groundwater (such as farming or gardening) to prevent future exposure
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☑ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? 100 feet

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

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

Urban land, till substratum	100 %
	%
	%

d. What is the average depth to the water table on the project site? Average: 7-12 feet

e. Drainage status of project site soils:

☐	Well Drained:	% of site
☑	Moderately Well Drained:	100 % of site
☐	Poorly Drained	% of site

f. Approximate proportion of proposed action site with slopes:

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

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

h. Surface water features.

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

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

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

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

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

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

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

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

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

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

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

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

i. Name of aquifer: Brooklyn-Queens Sole Source Aquifer

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

_____ _____ _____

_____ _____ _____

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No

If Yes:

i. Describe the habitat/community (composition, function, and basis for designation): _____

_____

ii. Source(s) of description or evaluation: _____

iii. Extent of community/habitat:

- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

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

If Yes:

i. Species and listing (endangered or threatened): _____

Common Tern

_____

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

If Yes:

i. Species and listing: _____

_____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No

If yes, give a brief description of how the proposed action may affect that use: _____

_____

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

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

If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No

i. If Yes: acreage(s) on project site? _____

ii. Source(s) of soil rating(s): _____

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No

If Yes:

i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

_____

_____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No

If Yes:

i. CEA name: _____

ii. Basis for designation: _____

iii. Designating agency and date: _____

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

If Yes:

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

ii. Name: S/NR-eligible former Wittemann Brothers Bottlers Supplies and Machinery Co, S/NR-eligible Red Hook Pentecostal Holiness Church

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

Wittemann Bros Bottlers: Brick masonry construction with character-defining features; Red Hook Penecostal Church: Late Gothic Revival type architecture

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

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

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

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

If Yes:

i. Identify resource: _____

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

iii. Distance between project and resource: _____ miles.

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

If Yes:

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

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

F. Additional Information

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

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

G. Verification

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

Applicant/Sponsor Name Susi Yu Date 2/28/2025

Signature  Title VP/Treasurer

PRINT FORM

Attachment A

Project Description

I. INTRODUCTION

The Applicant, NYM 215 Moore, LLC, is seeking approval from the New York City Economic Development Corporation (NYCEDC) for financial assistance from the New York City Industrial Development Agency (NYCIDA) to facilitate the construction of the Proposed Project, an approximately 244,568-gross-square-foot facility to be used as a film/television production studio in the Red Hook section of Brooklyn on an 85,000 square foot industrial site at 176 Dikeman Street (Brooklyn Block 574, Lots 1, 30 and 31, "the Project Area"). The Proposed Project would consist of four soundstages that would be able to support two productions. The facility would be entirely self-contained and would meet the design standards of high-end productions including approximately 40' tall clear heights, with column free soundstages averaging over 16,700 square feet (sf) each with abundant HVAC and electric capacity required to meet today's increased infrastructure requirements. The Proposed Project would also contain approximately 202 parking spaces and five loading berths. See **Figure A-1** for an illustrative ground floor plan.

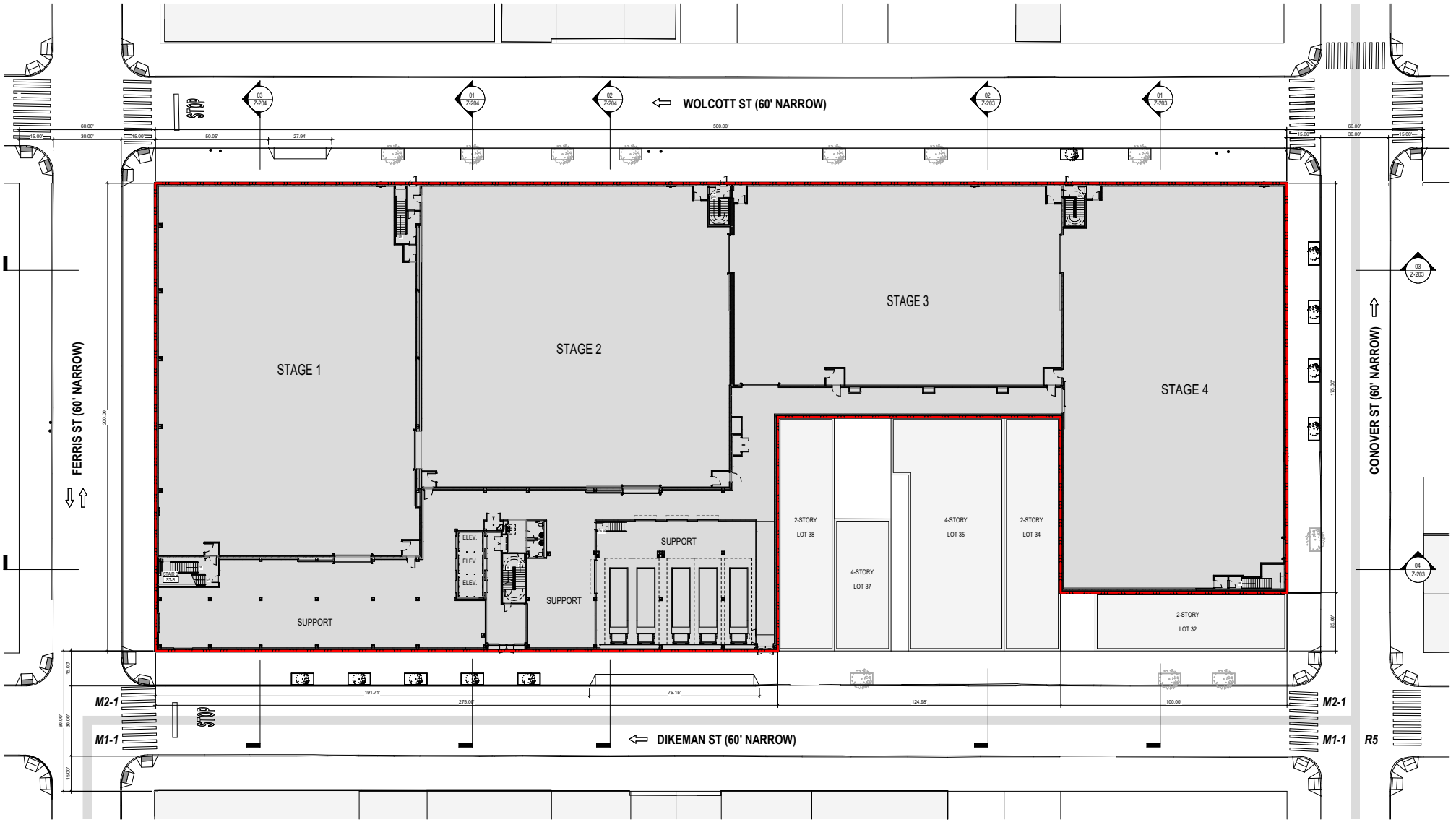
The Proposed Project is subject to environmental review under the New York State Environmental Quality Review Act ("SEQRA") and its implementing regulations set forth in Title 6 of the New York Codes, Rules, and Regulations (6 NYCRR) Part 617. Actions determined not to have a significant impact on the environment, or Type II Actions as promulgated by 6 NYCRR § 617.5, are not subject to environmental review. Actions that are subject to environmental review are Type I Actions and Unlisted Actions. Type I Actions are those actions that are listed in 6 NYCRR § 617.4. Unlisted Actions are all other actions not listed as Type I or Type II. The Proposed Project is considered a Type I Action.

This Environmental Assessment (EA) has been prepared to assist and guide decision-makers in reaching their conclusions and to ensure that they have a full understanding of the environmental effects of the Proposed Project. The SEQRA regulations are intended to permit the analysis of environmental factors and to clarify social and environmental issues in the early planning and decision-making stages of major projects. This assessment provides a way to systematically consider environmental effects with other aspects of project planning and design.

II. EXISTING CONDITIONS

The Project Area, shown in **Figure A-2**, comprises of the properties identified as Brooklyn Block 574, Lots 1, 30, and 31, known by the addresses 176 Dikeman Street and 184-200 Conover Street, and has a lot area of approximately 85,000 sf. As of May 2024, former Lots 1, 23 and 24 on Block 574 were merged into what is now known as Block 574, Lot 1. Lot 1 currently has a total lot size of 80,000 sf and is currently used for vehicle storage. Block 574, Lot 30 is a 2,500-sf lot currently occupied by a three-story, approximately 2,475 gross square foot (gsf) three-story walkup residential building. Block 574, Lot 31 is also a 2,500-sf lot occupied by a two-story, approximately 1,113 gsf two-family residential building.

Surrounding the Project Area, land uses comprise a mix of manufacturing, industrial, and residential uses, along with parking and vacant open space. On the same block as the Project Area is a mix of manufacturing, commercial, and residential buildings. Lots 30, 31, and 37 are multi-family residential buildings at 2,250-gsf, 1,000-gsf, and 5,548-gsf respectively. Lots 32 and 35 are office buildings at 4,153-gsf and 11,325-gsf, respectively. Lots 34 and 38 are both industrial buildings used as warehouses at 3,900-gsf and 4,750-gsf, respectively. North of the Project Area comprises mainly parking and vacant open space, including a



176 Dikeman Street EAS

Figure A-1
Ground Floor Plan

Figure A-2

Aerial View of the Project Area

Legend

Project Area

parking facility for a transportation services business. Also in the area are some single and two-family residential buildings along Sullivan Street and some manufacturing facilities and commercial and retail space. Further west of the Project Area, open space and parking are located along the shoreline. The Louis Valentino Jr. Park and Pier is located further to the southwest between the southern shoreline and Coffey Street.

The areas directly south and directly east of the Project Area contain additional vacant parcels and manufacturing and industrial facilities, including food products suppliers and storage space, but also contain a greater concentration of residential buildings than the areas to the west or north of the Project Area, including both single and two-family buildings and multi-family residences. Directly across Conover Street to the east is the South Brooklyn Community High School. The block to the north across Wolcott Street houses a mixed-use building containing residences and a food bank. The buildings further south across Coffey Street also contain primarily manufacturing and industrial uses, with contracting services, design studios, and other construction products manufacturing businesses.

The Project Area is served by the B61 bus line running north and south on Van Brunt Street. The B61 provides access between Downtown Brooklyn and the southwestern corner of Prospect Park. The B57 bus line, which provides service between the Surrounding Area to Maspeth, Queens, has stops located to the east of the Project Area. The Smith-9th Streets subway station serving the F/G trains is located approximately 1 mile to the east of the Project Area. The Red Hook Ferry Terminal, approximately 0.25 mile from the Project Area, is served by the South Brooklyn Ferry, with access to Brooklyn Bridge Park. The IKEA Express Ferry also provides access during select hours between Erie Basin Park and Pier 11 in Manhattan. There are also Citi Bike docks located at the intersections of Coffey Street/Conover Street, Van Brunt Street/Van Dyke Street, and Ferris Street/Coffey Street.

The Project Area, and the majority of the surrounding area are mapped within an M2-1 district. The M2-1 district covers the entire western shoreline south of the Brooklyn Bridge, extending as far east as Van Brunt Street in its northern portion, but further south is bounded by Conover Street to the east. M2-1 districts permit a base height of the lesser of 60 feet or four stories, above which a 20-foot setback on narrow streets and a 15-foot setback on wide streets is required. A rear yard or rear yard equivalent is also generally required. An M2-1 district requires buildings to be located underneath a "sky exposure plane," and does not have limitations on the maximum height of a building.

III. PROJECT PURPOSE AND NEED

New York City is North America's second-most popular filming location: in 2021, it captured 15% of television programs (second to Los Angeles at 35%) and in 2022, 180 television series and 86 films were shot in New York City. New York City also has the second largest pool of television and film employees. Prior to the COVID-19 pandemic and the recent Hollywood strikes, soundstage occupancy rates averaged approximately 95% in the New York City market for several years, suggesting that the market had been operating at capacity. The Mayor's Office of Media and Entertainment indicated that New York City has turned away substantial top-flight movie productions due to the lack of high-end, purpose-built soundstages with infrastructure required to support them. Further, only 15% of soundstage inventory in New York City is purpose-built and meets the infrastructure requirements of modern-day productions; the majority of the New York City soundstage inventory consists of converted warehouses without the proper ancillary production support and office spaces. The Proposed Project aims to fill the demand for a state-of-the-art purpose-built production facility in New York City with proper ancillary support and office spaces.

IV. DESCRIPTION OF THE PROPOSED PROJECT

The Proposed Project is an approximately 244,568 gsf facility to be used as a production studio. The Proposed Project would consist of four soundstages that would be able to support two productions. The facility would be entirely self-contained and would meet the design standards of high-end productions including approximately 40' tall clear heights, with column free soundstages averaging over 16,700 sf each with abundant HVAC and electric capacity required to meet today's increased infrastructure requirements. The Proposed Project would also contain approximately 202 parking spaces and five loading berths.

The Proposed Project would rise to a height of approximately 100.55 feet on its southwestern portion, with 15-foot setbacks provided above a height of 65 feet from each street line where applicable. In other areas, the Proposed Project would rise to a maximum height of approximately 87 feet without setback. The four soundstages would each have a frontage on Wolcott Street, with the mill, offices, and ancillary support spaces located on the Dikeman Street frontage. It is anticipated that construction of the Proposed Project would be completed in 2027.

Attachment B

Land Use, Zoning, and Public Policy

I. INTRODUCTION

As discussed in **Attachment A, "Project Description,"** the Applicant is seeking approval from the New York City Economic Development Corporation (NYCEDC) for financial assistance from the New York City Industrial Development Agency (NYCIDA) to facilitate the construction of the Proposed Project, an approximately 244,568-gross-square-foot (gsf) facility to be used as a film/television studio in the Red Hook neighborhood of Brooklyn on an 85,000 square foot industrial site at 176 Dikeman Street (Brooklyn Block 574, Lots 1, 30 and 31, "the Project Area"). The Proposed Project, which would consist of four soundstages that would be able to support two productions, aims to fill the demand for a state-of-the-art purpose-built production facility. The facility would be entirely self-contained and would meet the design standards of high-end productions including approximately 40' tall clear heights, with column free soundstages averaging over 16,700 square feet (sf) each with abundant HVAC and electric capacity required to meet today's increased infrastructure requirements. The Proposed Project would also contain approximately 202 parking spaces and five loading berths.

II. PRINCIPAL CONCLUSIONS

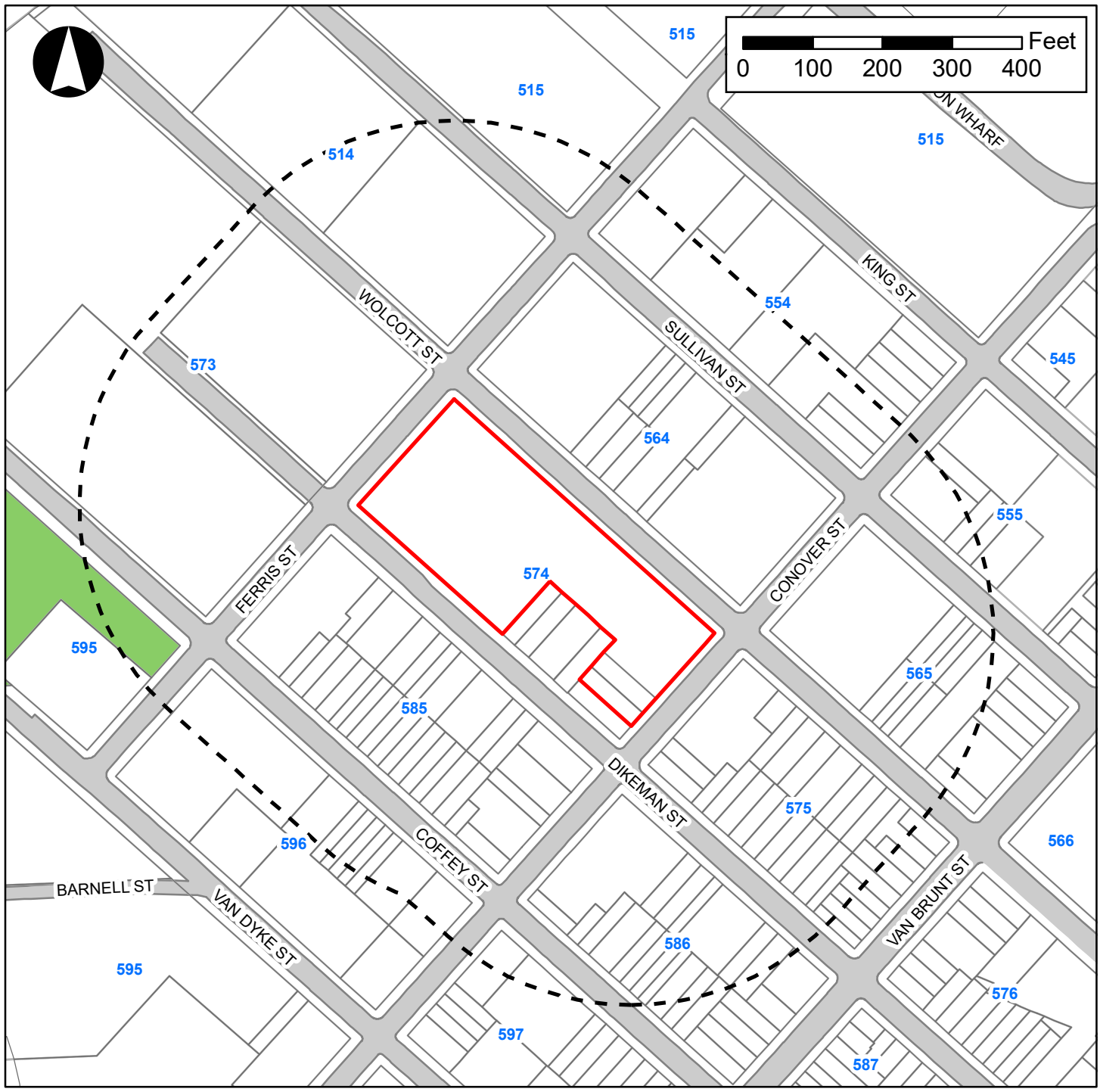
No significant adverse impacts on land use, zoning, or public policy would occur because of the Proposed Project. The Proposed Project would not directly displace any land uses so as to adversely affect surrounding land uses, nor would the Proposed Project generate land uses that would be incompatible with existing land uses, zoning, or public policy in the surrounding area.

III. METHODOLOGY

As shown in **Figure B-1**, land use, zoning, and public policy are addressed and analyzed for two geographical areas for the Proposed Project. The study areas include: (1) the Project Area (the Primary Study Area) (Block 574, Lots 1, 30 and 31); and (2) a Secondary Study Area that has the potential to experience indirect impacts as a result of the Proposed Project. The Secondary Study Area extends an approximate 400-foot radius from the boundary of the Primary Study Area. The Secondary Study Area is generally bounded by the midblock between King and Sullivan Streets to the north, midblock between Conover and Van Brunt Streets to the east, midblock between Coffey and Van Dyke Streets to the south, and midblock past Ferris Street towards the waterfront to the west.

Existing land uses within the Primary and Secondary Study Areas were determined based on the New York City Primary Land Use Tax Lot Output ("PLUTO") data files for 2024 and January 2025 field visits; no discrepancies between PLUTO data files and existing field conditions were observed. New York City Zoning and Land Use ("ZoLa"), New York City Zoning maps, and the *Zoning Resolution of the City of New York* ("ZR") were consulted to describe existing zoning districts in each of the study areas. Relevant public policy documents, recognized by the New York City Department of City Planning ("DCP") and other city agencies were utilized to describe existing public policies pertaining to the Primary and Secondary Study Areas.

Figure B-1
Study Areas



Legend

- Project Area (Primary Study Area)
- 400 Foot Radius (Secondary Study Area)
- 574 Tax Lot
- Open Space

III. EXISTING CONDITIONS

Land Use

Primary Study Area (Project Area)

The Primary Study Area is the Project Area (Block 574, Lots 1, 30, and 31) bounded by Wolcott Street to the north, Conover Street to the east, Dikeman Street to the south, and Ferris Street to the west in the Red Hook neighborhood of Brooklyn in Community District 6. The Project Area in its entirety is approximately 85,000 square feet (sf).

As summarized in **Table B-1**, the Project Area comprises three lots. As of May 2024, former lots 1, 23, and 24 on Block 574 have been merged into what is now known as Block 574, Lot 1. Lot 1 has a total lot size of 80,000 sf and is currently vacant. Block 574, Lots 30 and 31 are both 2,500 sf rectangular lots with 25 feet of frontage along Conover Street. These lots are both currently occupied by residential buildings. Lot 30 is occupied by a 2,250 gross-square-foot (gsf) three-story walk-up residential building, and Lot 31 is occupied by a 1,012 gsf two-story single-family home.

TABLE B-1
Existing Land Uses within the Primary Study Area

Tax Lot	Lot Size (sf)	Land Use
1	80,000	Vacant
30	2,500	2,250-gsf residential building
31	2,500	1,012-gsf residential building

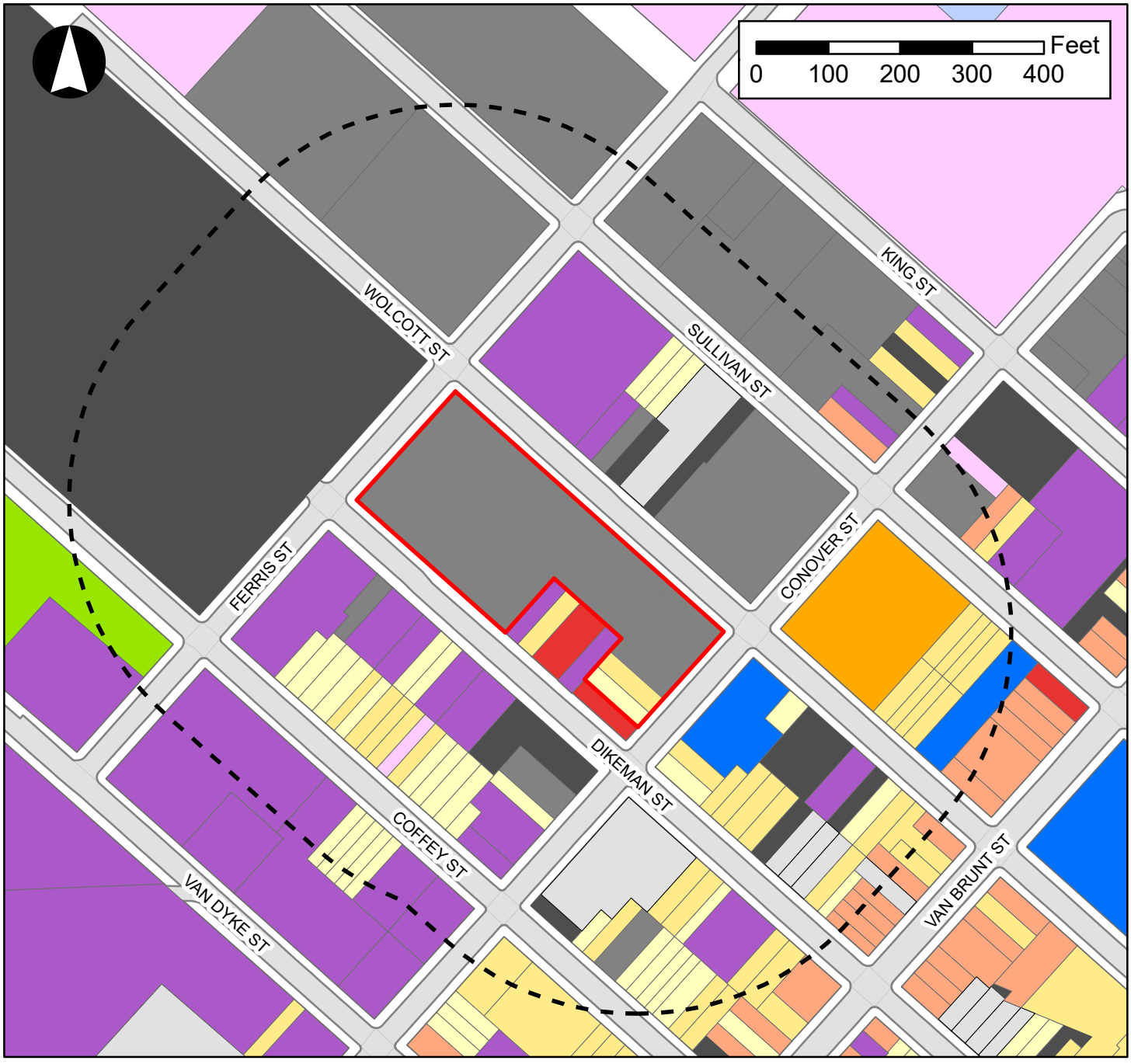
Secondary Study Area (400-foot Radius)

As shown in **Figure B-2**, immediately west of the Project Area are vacant lots and lots used for parking. North of the Project Area are industrial uses with some vacant land and three one- and two-family residential buildings. East of the Project Area has a wide mix of uses including multi-family residential buildings, a church, a school, industrial and manufacturing uses, and mixed commercial and residential buildings. South of the Project Area are primarily residential buildings, parking facilities, and light industrial uses.

As shown in **Table B-2** below, a majority of the lots within the study area are residential uses at 55.6 percent. Of all residential lots, one- and two-family residential buildings are the most common, and are 10.8 percent of the total building area. Multi-family walkup and elevator buildings are common as well, which have a combined 24.6 percent of the total building area. After residential uses, industrial and manufacturing land uses are the most common, with 15.4 percent of total lots, 23.1 percent of total lot area and 34.2 percent of total building area in the Secondary Study Area. Parking facilities are common throughout the Secondary Study Area and represent 8.5 percent of all lots and 21.5 percent of the total lot area. As shown in **Figure B-2**, vacant land is interspersed throughout the study area and makes up 12 percent of total lots and 24 percent of total lot area.

All others, or no data, presents 4.3 percent of all lots and 4.9 percent of the study area lot area. lots serve many purposes that are not identified in the standard land use table. Some serve as storage and/or parking facilities for construction equipment; and others are vacant or serve as parking spaces for nearby industrial uses. Many of these lots are accessory to adjacent industrial or manufacturing land uses or are used for truck and vehicle storage. **Table B-2** provides an overview of all land uses within the Secondary Study Area, which corresponds with **Figure B-2**.

Figure B-2
Land Use



Legend

- Project Area
- 400 Foot Radius

Land Use

- One & Two Family Buildings
- Multi-Family Walkup Buildings
- Multi-Family Elevator Buildings
- Mixed Commerical/Residential Buildings
- Commercial/Office Buildings
- Industrial/Manufacturing
- Transportation/Utility
- Public Utilities & Institutions
- Open Space
- Parking Facilities
- Vacant Land
- All Others or No Data

Table B-2: Existing Land Uses within the Secondary Study Area

Land Use	Number of Lots	Percentage of Total Lots	Lot Area (sf)	Percentage of Total Lot Area (%)	Building Area (sf)	Percentage of Total Building Area (%)
All Residential	65	55.6%	170,130	22%	219,564	38%
One and Two-Family Residential	*32*	*27.4%*	*61,570*	*8.0%*	*63,161*	*10.8%*
Multi-Family Walkup Residential	*29*	*24.8%*	*65,006*	*8.5%*	*99,098*	*17.0%*
Multi-Family Elevator Residential	*1*	*0.9%*	*34,400*	*4.5%*	*44,400*	*7.6%*
Mixed Commercial/ Residential	*3*	*2.6%*	*9,154*	*1.2%*	*12,905*	*2.2%*
Commercial/Office	2	1.7%	7,500	1.0%	15,478	2.7%
Industrial/Manufacturing	18	15.4%	177,361	23.1%	199,910	34.2%
Transportation/ Utility	1	0.9%	2,000	0.3%	1,990	0.3%
Public Facilities & Institutions	2	1.7%	22,890	3.0%	30,575	5.2%
Open Space	0	0.0%	0	0.0%	0	0.0%
Parking Facilities	10	8.5%	165,200	21.5%	48,945	8.4%
Vacant Land	14	12.0%	184,405	24.0%	0	0.0%
Other/No Data	5	4.3%	37,952	4.9%	67,325	11.5%
Total	117	100.0%	767,438	100.0%	583,787	100.0%

Source: NYCDCP (PLUTO 2024v1)
Notes: Includes all lots fully or mostly within the 400-foot radius. As Louis Valentino, Jr. Park and Pier is mostly located outside of the boundaries of the 400-foot radius, it was not included in this analysis.

Zoning

Primary Study Area (Project Area)

With the enactment of the 1961 Zoning Resolution, the entirety of the Project Area was an M2-1 zoning district and has remained that way since (refer to **Figure B-3**). M2 districts typically serve as a buffer between light and heavy industrial districts. These districts are mainly found within Brooklyn's waterfront areas such as the Project Area, as well as Sunset Park waterfronts. The four M2 districts have different floor area ratios (FAR) and parking requirements. In M2-1 districts, the FAR is 2.0 and the maximum base height before setback is 60 feet. Parking requirements in these districts vary according to use.

Secondary Study Area (400-foot Radius)

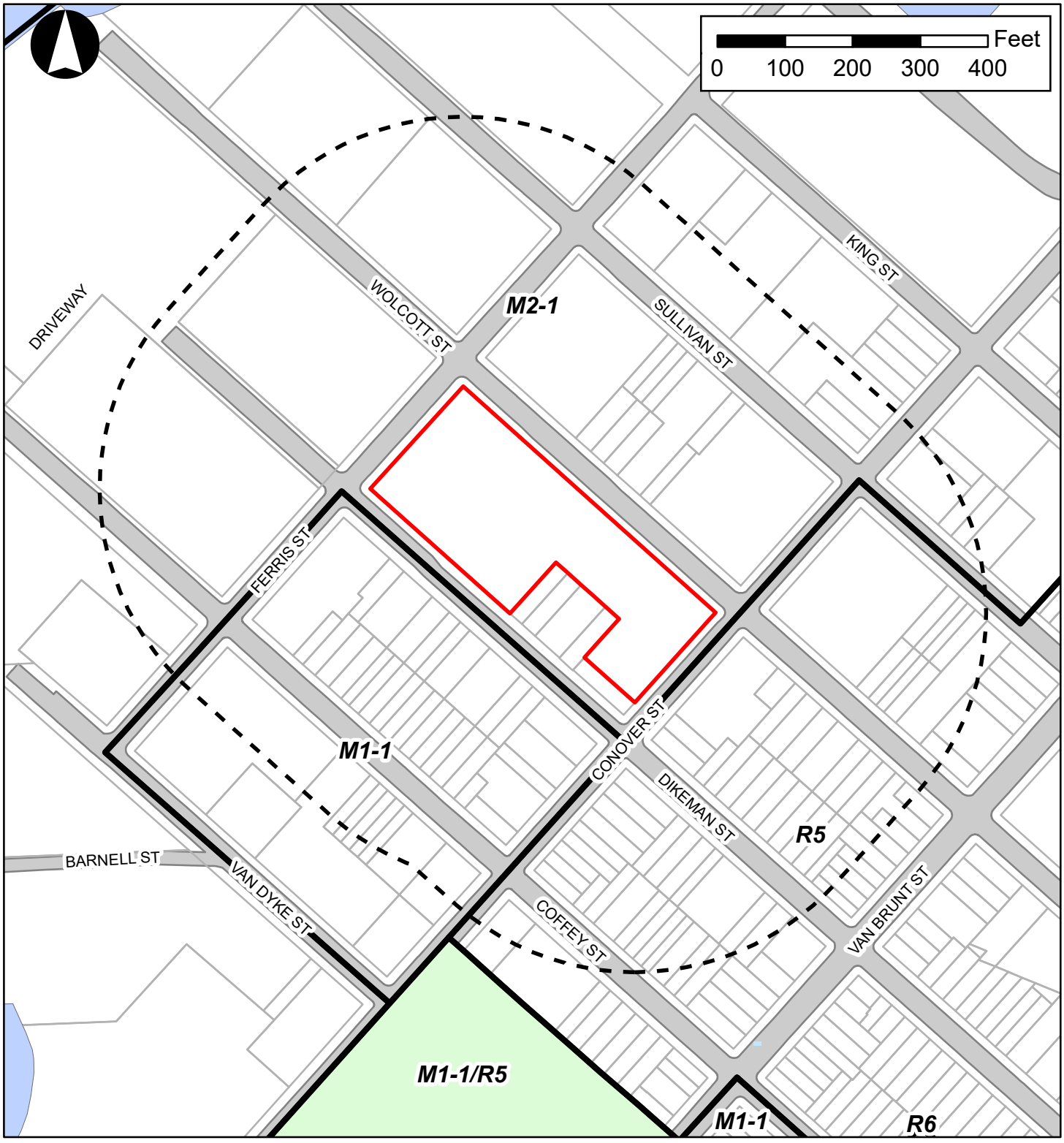
In addition to the above-described M2-1 district, which is also mapped within the Secondary Study Area, R5 and M1-2 are present in the Secondary Study Area. As shown in **Figure B-3,** the Secondary Study Area industrial districts are generally located west of Conover Street, while the residential districts are generally located east of Conover Street. Zoning classifications within the Secondary Study Area are described below in **Table B-3**.

Table B-3: Existing Zoning Districts within the Secondary Study Area

Name	Definition/General Use	Maximum FAR
R5	R5 districts are widely mapped in medium-density areas. The FAR requirements typically result in either small apartment buildings or three- and four-story attached houses.	R: 1.50 C: 0.0; CF: 2.4 M: 0.0
M1-1	M1 districts are often buffers between M2 or M3 districts and adjacent residential or commercial districts. M1 districts typically include light industrial uses, which must meet the stringent M1 performance standards.	R: 0.0; C: 1.0; CF: 2.4; M: 1.0
M2-1	M2 districts are often buffers between light industrial and heavy industrial uses. M2 districts are typically found along the Brooklyn waterfront.	R: 0.0; C: 2.0; CF: 4.8; M: 2.0

Source: Zoning Resolution of the City of New York
Notes: R=Residential; C=Commercial; CF=Community Facility; M=Manufacturing

Figure B-3
Existing Zoning



Legend

- Project Area
- 400 Foot Radius
- M1-1 Zoning District

Public Policy

Public Policies Applicable to the Primary and Secondary Study Areas

Waterfront Revitalization Program (WRP)

As shown in **Figure B-4**, the Project Area and Secondary Study Area are located within the City's designated coastal zone. Proposed projects that are located within the designated boundaries of New York City's Coastal Zone must be assessed for their consistency with the City's WRP. A WRP consistency assessment for the Proposed Project is summarized below. The WRP Consistency Assessment Form and analysis were completed as part of the New York City Environmental Quality Review (CEQR) requirements and a copy of the WRP Consistency Assessment Form that was attached to the CEQR Environmental Assessment Statement (EAS) is provided in **Appendix V**.

PlaNYC and OneNYC

In April 2007, the Mayor's Office of Long-Term Planning and Sustainability released *PlaNYC: A Greener, Greater New York* (PlaNYC). In 2015, *One New York: The Plan for a Strong and Just City* (OneNYC) was released by the Mayor's Office of Long-Term Planning and Sustainability and the Mayor's Office of Recovery and Resiliency. OneNYC builds upon the sustainability goals established by PlaNYC and focuses on growth, equity, sustainability, and resiliency. Goals outlined in the report include ensuring access to affordable, high-quality housing and thriving neighborhoods (ensuring that neighborhoods will be well served). OneNYC has since been updated to OneNYC 2050—a nine-volume long-term strategic plan to "confront our climate crisis, achieve equity, and strengthen our democracy" in New York City.

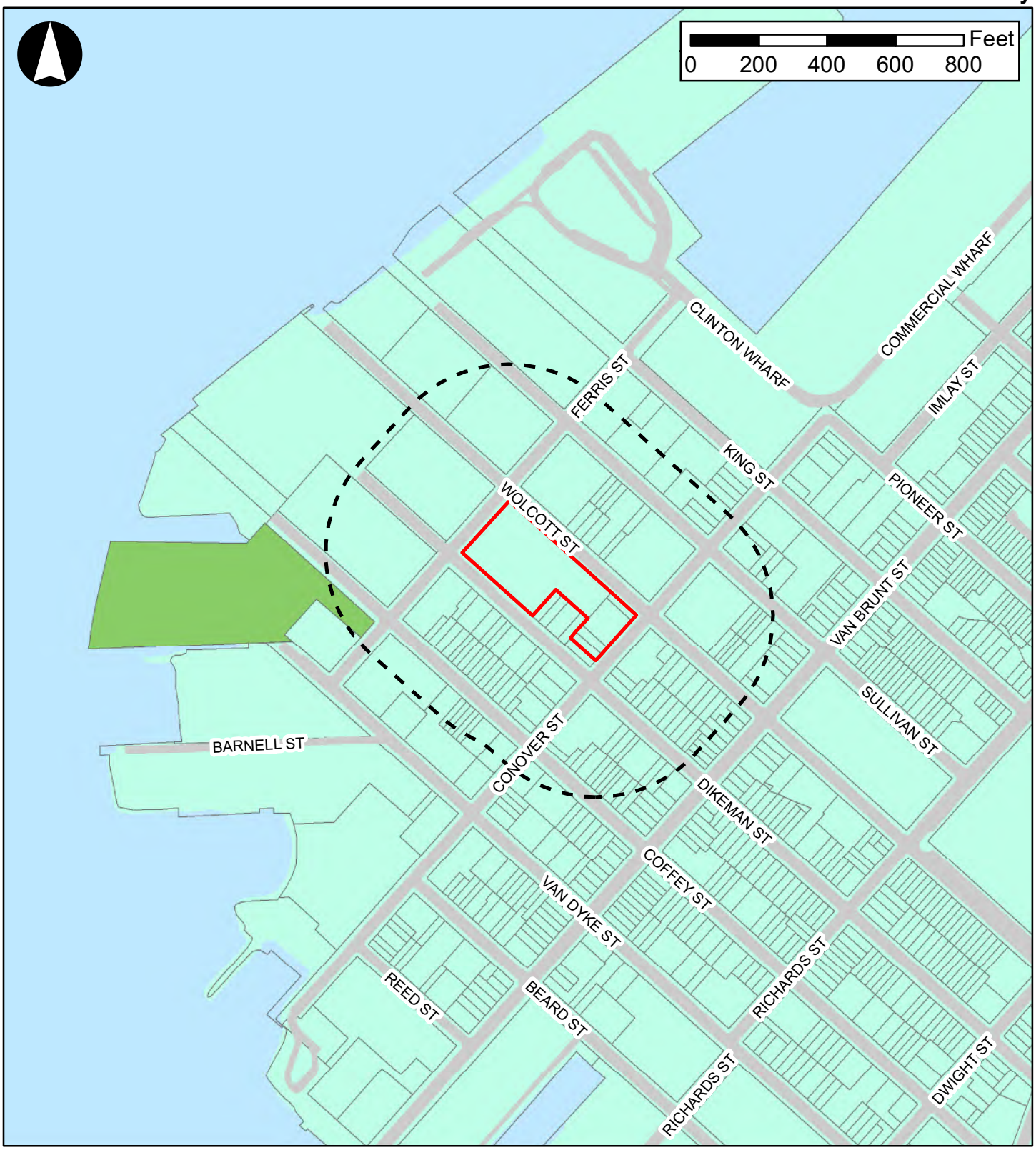
Overall, OneNYC 2050 outlines 30 strategic initiatives organized around 8 overarching goals: a vibrant democracy; an inclusive economy; thriving neighborhoods; healthy lives; equity and excellence in education; a livable climate; efficient mobility; and modern infrastructure. In addition, in April 2023, the Adams' administration released *PlaNYC: Getting Sustainability Done*, which provides an action plan for a cleaner, greener and more just city for all. *PlaNYC: Getting Sustainability Done* builds on the prior four plans while facing the challenges and seizing the opportunities that are specific to today. The action plan is based on the following nine principles: (1) act with urgency and focus on implementation; (2) achieve near-term benefits for New Yorkers while implementing long-term goals; (3) center environmental justice and health equity in New York City's work; (4) create economic activity through climate action; (5) strengthen private sector investments through both incentives and mandates; (6) lead by example as a City; (7) make full use of unprecedented Federal and State fundings; (8) implement climate budgeting to align City resources with sustainability and resilience goals; and (9) streamline the City's procurement processes to expedite project delivery.

Rebuild, Renew, Reinvent: A Blueprint for New York City's Economic Recovery

In 2022, the New York City Mayor released the economic recovery plan, *Rebuild, Renew, Reinvent: A Blueprint for New York City's Economic Recovery* ("the Economic Recovery Plan"). The Economic Recovery Plan was released with long-term strategies to make New York City's economy more equitable and accessible, particularly in response to the COVID-19 pandemic. To accelerate New York City's economic recovery, and build a more resilient economy, the five overarching strategies discussed in the Economic Recovery Plan are:

- Restart our city's economic engines and reactivate the public realm.
- Support small businesses, entrepreneurship, and a more equitable economy.
- Drive inclusive sector growth and build a future-focused economy.
- Connect New Yorkers to quality jobs and in-demand skills.

Figure B-4
Coastal Zone Boundary



Legend

- Project Area
- 400-Foot Radius
- Open Space
- Water
- NYC Coastal Zone

- Plan and build for inclusive growth now and in the future.

V. THE FUTURE WITH THE PROPOSED PROJECT

In the future with NYCIDA financial assistance, a 244,568 gsf self-contained film/television studio with four soundstages would be built in Red Hook, Brooklyn at 176 Dikeman Street.

Land Use

The Proposed Project would facilitate the development of a production studio to meet the growing demand for television and film production in New York City. A production studio is classified as Use Group VIII land use and is permitted under the M2-1 zoning district. The Proposed Project is site-specific and would not generate land uses that would be incompatible with surrounding land uses, nor would it directly displace land uses in such a way as to adversely affect surrounding land uses or have a substantial effect on the area's land use pattern.

Zoning

The Proposed Project would not involve changes to the underlying zoning at the Project Site or within the Secondary Study Area.

Public Policy

Waterfront Revitalization Plan (WRP)

As the Project Area is located within the City's designated Coastal Zone (see **Figure B-4**), the Proposed Project is subject to review for consistency with the policies of the WRP. The WRP includes policies designed to maximize the benefits derived from economic development, environmental preservation, and public use of the waterfront, while minimizing the conflicts among those objectives. The WRP Consistency Assessment Form (CAF) (see **Appendix V**) lists the WRP policies and indicates whether the Proposed Project would promote or hinder that policy, or if that policy would not be applicable. Based on the CAF completed for the Proposed Project, two WRP policies (policies 1, 6, and 7) required further assessment. Assessment of the applicable WRP policies was prepared and is also provided in **Appendix V.** The assessment found that the Proposed Project would be consistent with all applicable WRP policies. Therefore, the Proposed Project is not expected to result in any significant adverse impacts related to the WRP.

PlaNYC and OneNYC

The Proposed Project is consistent with the City's sustainability goals, including those outlined in *OneNYC*. Notably, the Proposed Project would support the plan's land use goals of focusing development in areas that are served by mass transit; increasing walk-to-work opportunities; creating jobs in proximity to established and/or growing residential neighborhoods; and fostering walkable retail destinations. The Proposed Project would be in close proximity to the B61 bus route and several other transit options and would therefore be consistent with the *OneNYC* goal of focusing development in areas that are served by mass transit and fostering walkable retail destinations. Overall, the Proposed Project would be supportive of the applicable goals and objectives of *OneNYC*.

Rebuild, Renew, Reinvent: A Blueprint for New York City's Economic Recovery

The Economic Recovery Plan was released with long-term strategies to make New York City's economy more equitable and accessible, particularly in response to the COVID-19 pandemic. The Proposed Project would not hinder the advancement of the Economic Recovery Plan, but as stated above, it would promote job creation in the area by facilitating the development of a production studio that is anticipated to introduce new creative jobs to New York City.

Attachment C

Hazardous Materials

I. INTRODUCTION

As discussed in **Attachment A, "Project Description,"** the Applicant is seeking financial assistance from the New York City Industrial Development Agency (NYCIDA) facilitate the construction of the Proposed Project, an approximately 244,568-gross-square-foot facility to be used as a film/television production studio in the Red Hook section of Brooklyn on an 85,000 square foot industrial site at 176 Dikeman Street (Brooklyn Block 574, Lots 1, 30 and 31, "the Project Area"). The Proposed Project, which would consist of four soundstages that would be able to support two productions, aims to fill the demand for a state-of-the-art purpose-built production facility. The facility would be entirely self-contained and would meet the design standards of high-end productions including approximately 40' tall clear heights, with column free soundstages averaging over 16,700 square feet (sf) each with abundant HVAC and electric capacity required to meet today's increased infrastructure requirements. The Proposed Project would also contain approximately 202 parking spaces and five loading berths.

II. REMEDIAL ACTION WORK PLAN

Under previous ownership, the Project Area was enrolled in the New York State Department of Environmental Conservation ("NYSDEC)" Brownfield Cleanup Program ("BCP") as Site No. C224256. Under the previous BCP iteration, a Remedial Investigation ("RI") was completed in two phases between 2018 and 2021, and the NYSDEC approved the Phase I RI and Phase II RI reports on April 28, 2022, and March 16, 2023, respectively (see **Appendix II and III**). The NYSDEC issued comments to a draft Remedial Action Work Plan ("RAWP"); however, the previous owner withdrew Site No. C224256 from the BCP on December 13, 2023, with the intention of transferring ownership. The site was acquired by the current owner, NYM 145 Wolcott, LLC on April 25, 2024, and the current owner entered into a BCA as a volunteer on May 21, 2024.

Since the current owner has entered into the new BCA, an updated RAWP has been drafted and is under NYSDEC review (**Appendix III**). The RAWP identifies and evaluates remedial action alternatives and recommends remedies to remove petroleum- and tar-like contaminant sources contributing to VOC and SVOC impacts to soil, groundwater, and soil vapor at the site; remediate VOC and SVOC impacts to groundwater; prevent exposure to SVOC, metals, PCB, and pesticide-impacted non-native fill; and mitigate intrusion of VOC-impacted soil vapor.

As described in the draft RAWP, the remediation would include the following:

1. Development and implementation of a CHASP and CAMP for the protection of on-site workers, visitors, the community, and the environment including during remediation and construction
2. To facilitate site remediation, demolition and removal of subsurface obstructions (e.g., remnant foundation elements) and the surficial building slab and asphalt and concrete gravel cover by the contractor and management of removed construction and demolition (C&D) debris in accordance with 6 NYCRR Part 360 and 361 regulations. Review and certification of C&D transport and disposal methodologies is not a requirement of the Remedial Engineer (RE). The RE is responsible for documenting that C&D debris is not comingled with contaminated site soil and fill.

3. Collection of groundwater samples for groundwater treatability analysis and feasibility study and design of in-situ groundwater treatment system to address petroleum- and tar impacted groundwater in the northern, northwestern, central, and eastern parts of the site
4. Recovery of LNAPL via vacuum-enhanced fluid recovery (VEFR) at wells MW-002, MW-008, and MW-012
5. Decommissioning of existing on-site groundwater monitoring wells in accordance with NYSDEC CP-43
6. Implementation of soil erosion, pollution and sediment control measures in compliance with applicable laws and regulations
7. Design and construction of support of excavation (SOE) systems to facilitate the Track 4 remedial excavation
8. Excavation and removal of about 13,100 cubic yards of non-native fill and soil to depths between 1-foot bgs and about 16 feet bgs, including the following areas:
    - Site-wide remedial excavation to about 1 feet bgs for removal of non-native fill exceeding the RUI SCOs
    - Excavation to depths between about 4 and 16 feet bgs in the northern, northwestern, eastern, and central parts of the site to remove soil with petroleum and tar-like impacts (i.e., based on analytical data and nuisance conditions) and remove soil from the northern, northwestern, central, and eastern contaminant source areas above the groundwater table with target VOCs and/or SVOCs above the Part 375 Protection of Groundwater (PGW) SCOs (i.e., 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, 2-butanone, naphthalene, npropylbenzene, toluene, total xylenes, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, indeno[1,2,3-cd]pyrene, and phenol).
9. Screening for indications of contamination (by visual means, odor, and monitoring with a PID) of excavated material during intrusive site work
10. Appropriate off-site disposal of excavated non-native fill and soil in accordance with federal, state, and local rules and regulations for handling, transport, and disposal
11. Dewatering to reach remedial excavation depths, and treatment and discharge of dewatering fluids in accordance with applicable regulations and municipal permit requirements
12. Decommissioning and removal of any encountered underground storage tanks (UST) in accordance with 6 NYCRR Part 613 and NYSDEC DER-10 Section 5.5
13. Completion of in-situ groundwater treatment via chemical injections to address petroleum- and/or tar-related groundwater impacts on the northern, northwestern, central, and eastern parts of the site
14. Collection and analysis of documentation soil samples, including quality assurance/quality control (QA/QC) samples, in accordance with DER-10 at base of the remedial excavation
15. Import of fill clean fill (i.e., soil meeting the lower of Part 375 RUI and PGW SCOs as defined by 6 NYCRR Part 375-6.5, or virgin, native crushed stone to backfill remedial excavations and facilitate EC installation
16. Installation and operation of an SMD system in portions of the site that are not occupied by a mechanically ventilated parking garage and installation of a vapor barrier membrane beneath the building slab and around the sub-grade portions of the foundation walls to mitigate against potential vapor intrusion
17. Installation of a site cover system consisting of a concrete building foundation slab and underlying vapor barrier membrane system to prevent future exposure to remaining contaminated soil
18. Installation of a groundwater monitoring wells in the cellar of the new building for post remediation groundwater monitoring and contingency treatment, if warranted
19. Completion of an SVI evaluation after the new building is constructed
20. Establishment of use restrictions (i.e., institutional controls [IC]) including prohibitions on the use of groundwater from the site and prohibitions on sensitive site uses, such as farming or vegetable gardening in remaining site soil, to prevent future exposure to remaining contamination

21. Recording of an environmental easement (EE) referencing ECs and ICs to prevent future exposure to remaining contamination
22. Publication of an SMP for long-term management of remaining contamination as required by the EE, including plans for: 1) IC/EC implementation, 2) monitoring, 3) operation and maintenance, and 4) reporting
23. Post-remediation groundwater monitoring of groundwater monitoring wells installed following completion of the remedial excavation for a minimum of eight quarters

Conclusion

The RAWP must be approved by NYSDEC and will comply with all applicable federal, state, and local laws, regulations and requirements. With the implementation of the recommended remedial actions established in the RAWP, and as approved by NYSDEC, it is concluded that the Proposed Development would not result in potential adverse impacts related to hazardous materials. As such, no significant impact related to hazardous materials would occur as a result of the Proposed Project and no further analysis is needed.

Appendix I:

Travel Demand Factors Memorandum

Philip Habib & Associates, an AKRF Division
Engineers and Planners • 440 Park Avenue South • New York, NY 10016 • 212 929 5656 • 212 929 5605

TECHNICAL MEMORANDUM

TO: **New York City Economic Development Corporation (NYCEDC)**

FROM: **Philip Habib & Associates (PHA), an AKRF Division**

DATE: **February 28, 2025**

PROJECT: **176 Dikeman Street**

RE: **Transportation Planning Factors and Travel Demand Forecast**

This memorandum summarizes the transportation planning factors to be used for the analyses of traffic, parking, transit, and pedestrian conditions for the proposed 145 Wolcott Street - Bungalow Film Studios development. Estimates of the peak travel demand in the future with the Proposed Actions are also provided, along with a discussion of trip assignment methodologies and study area definitions.

THE PROPOSED ACTION

The Applicant (NYM 145 Wolcott, LLC) is seeking approval from the New York City Economic Development Corporation (NYCEDC) for New York City Industrial Development Agency (NYCIDA) financial assistance to facilitate the development of an approximately 244,568-gross square foot (gsf) film and television production studio (the "Proposed Project") in the Red Hook neighborhood of Brooklyn at 176 Dikeman Street (Block 574, Lots 1, 30 and 31). The Proposed Development would house four soundstages and accessory facilities for stage support, accessory offices, as well as below-grade accessory parking (202 spaces). Construction of the Proposed Project is expected to begin in 2025 with all elements completed in 2027.

ANALYSIS FRAMEWORK

The Future without the Proposed Action (No-Action Condition)

Under the 2027 No-Action scenario, the Proposed Action would not be approved. As such, the No-Action condition assumes the development of a last-mile distribution facility with an estimated gross floor area of 244,568 gsf (167,028 zsf). Existing zoning permits such a last mile distribution center in the M2-1 zoning district.

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

Under the 2027 With-Action scenario, approval of the Proposed Action would facilitate the development of a 244,568 gsf film and television production studio, containing four soundstages and accessory facilities for stage support, accessory offices, as well as 202 parking spaces.

Possible Effects of the Proposed Action

A comparison of the No-Action and With-Action scenarios is provided in **Table 1**. The incremental difference between the No-Action condition and the Proposed Project provides the basis by which the potential environmental effects are evaluated in the transportation analysis.

Table 1: Comparison of 2027 No-Action and With-Action Conditions

Use	No-Action	With-Action	Increment
Film & Television Production Studio	0 gsf	244,568 gsf	+244,568 gsf
Last-Mile Freight Distribution Facility	244,568 gsf	0 gsf	-244,568 gsf

TRANSPORTATION PLANNING FACTORS

The transportation planning factors used to forecast travel demand for the future with the Proposed Actions are summarized in **Table 2** and discussed below. Factors are shown for the weekday AM, MD, and PM peak hours (typical peak periods for heaviest travel demand). A forecast for the Saturday midday peak hour was not conducted, as film and television studios typically operate Monday through Friday. It is anticipated that the trips made during the weekend would not exceed the number of trips forecasted during the weekdays.

Film & Television Production Studio (With-Action Condition)

The person trip generation rate of 10.0 trips per 1,000 gsf as well as directional in/out splits for the film and television production studio were based on data from the 2021 *CEQR Technical Manual* and are also consistent with the 2022 *Pier 92/94 Lease Amendment EAS* for a film production studio. The weekday temporal distributions of 12.0 percent, 8.0 percent, and 11.0 percent for the AM, midday, and PM peak periods, respectively, and the taxi occupancy rate of 1.40 persons per vehicle were based on the 2022 *Pier 92/94 Lease Amendment EAS*. The weekday AM, midday, and PM modal splits of 60.0 percent by auto, 0.5 percent by taxi, 19.2 percent by subway/rail, 8.3 percent by bus, and 12.0 percent by walk/other modes, and the auto occupancy rate of 1.12 persons per vehicle were based on 2012-2016 AASHTO CTPP Reverse-Journey-to-Work data for Brooklyn Census Tracts 53, 59, and 85. The weekday truck trip generation rate of 0.36 trips per 1,000 gsf and temporal distributions of 8.7 percent, 9.7 percent, and 5.6 percent for the AM, midday, and PM peak periods, respectively were also based on the 2022 *Pier 92/94 Lease Amendment EAS*.

Last-Mile Distribution Facility (No-Action Condition)

The person trip generation rate of 5.85 trips per 1,000 gsf for the last-mile distribution facility was based on data provided by NYCDOT. Weekday temporal distributions of 11.0 percent, 5.0 percent, and 10.0 percent for the AM, midday, and PM peak periods, respectively, as well as directional in/out splits for last-mile distribution facility were also based on data provided by NYCDOT. The modal splits of 60.0 percent by auto, 0.5 percent by taxi, 19.2 percent by subway/rail, 8.3 percent by bus, and 12.0 percent by walk/other modes, and the auto occupancy rate of 1.12 persons per vehicle were also based on 2012-2016 AASHTO CTPP Reverse-Journey-to-Work data for Brooklyn Census Tracts 53, 59, and 85. The taxi occupancy rate of 1.40 persons per vehicle was based on the 2022 *Pier 92/94 Lease Amendment EAS*. The weekday truck trip generation rate of 3.12 trips per 1,000 gsf and temporal distributions of 10.0 percent, 3.0 percent, and 11.0 percent for the weekday AM, midday, and PM peak periods, respectively were also based on data provided by NYCDOT for the last-mile use.

Table 2: Transportation Planning Factors

Land Use:	**Film & Television Production Studio**		**Last-Mile Distribution Facility**	
Size/Units:	244,568 gsf		244,568 gsf	
Trip Generation:	(1)		(4)	
Weekday	10.0 per 1,000 gsf		5.85 per 1,000 gsf	
Temporal Distribution:	(2)		(4)	
AM	12.0%		11.0%	
MD	8.0%		5.0%	
PM	11.0%		10.0%	
Modal Splits:	(3) All Periods		(3) All Periods	
Auto	60.0%		60.0%	
Taxi	0.5%		0.5%	
Subway / Rail / Subway-to-bus	19.2%		19.2%	
Bus Only	8.3%		8.3%	
Walk/Bike/Other	12.0%		12.0%	
	100.0%		100.0%	
	(1)		(4)	
In/Out Splits:	In	Out	In	Out
AM	74.0%	26.0%	46.0%	54.0%
MD	49.0%	51.0%	53.0%	47.0%
PM	34.0%	66.0%	61.0%	39.0%
Vehicle Occupancy:	(2)(3) All Periods		(2)(3) All Periods	
Auto	1.12		1.12	
Taxi	1.40		1.40	
Truck Trip Generation:	(2)		(4)	
Weekday	0.36 per 1,000 sf		3.12 per 1,000 sf	
Temporal Distribution:	(2)		(4)	
AM	8.7%		10.0%	
MD	9.7%		3.0%	
PM	5.6%		11.0%	
In/Out Splits:	In	Out	In	Out
AM	71.0%	29.0%	1.0%	99.0%
MD	58.0%	42.0%	8.0%	92.0%
PM	55.0%	45.0%	87.0%	13.0%

Notes :

(1) 2021 *City Environmental Quality Review (CEQR) Technical Manual.*

(2) *Pier 92/94 Lease Amendment EAS* , 2022

(3) U.S. Census American Community Survey (ACS) 2012-2016 Reverse Journey to Work (RJTW) Data for Brooklyn Census Tracts 53, 59, and 85.

(4) Based on data provided by NYCDOT for Last-Mile Distribution Facility.

TRIP GENERATION

The net incremental change in person and vehicle trips expected to result from the Proposed Action by the 2027 analysis year were derived based on the net change in land uses shown in **Table 1** and the transportation planning factors shown in **Table 2**. It should also be noted that the trip generation conservatively assumes that the entire production studio space of 244,568 gsf (all four sound stages) would be occupied simultaneously. **Table 3** shows an estimate of the net incremental change in peak hour person trips and vehicle trips (compared to the No-Action condition) that would occur in 2027 with approval of the Proposed Action. Person-trips generated by the Proposed Action would primarily include employees (talent, crew, stagehands, etc.) associated with the proposed studio as well as visitors, while person-trips generated by the as-of-right last-mile distribution facility would primarily include office and distribution center employees as well as drivers of trucks making deliveries.

As shown in **Table 3**, the Proposed Actions would generate a net increase of approximately 135, 124, and 125 person trips (in + out combined) in the weekday AM, midday, and PM peak hours, respectively. Peak hour vehicle trips (including auto, taxi, and truck trips) would increase by a net total of approximately three and 53 trips in the weekday AM and midday peak hours and decrease by a net total of approximately nine vehicle trips in the weekday PM peak hour. It should be noted, for reference, that the last-mile use would generate approximately 77 truck trips in the weekday AM peak hour compared to seven truck trips for the production studio. Additionally in the weekday midday peak period, the last-mile use would generate approximately 23 truck trips compared to nine truck trips for the production studio. Lastly, the last-mile use would generate approximately 84 truck trips in the weekday PM peak period compared to five truck trips for the production studio.

Peak hour person trips by subway/rail would increase by a net total of 27, 24 and 24 trips in the weekday AM, midday, and PM peak hours, respectively. Peak hour person trips by bus only would increase by a net total of approximately 11, 10, and 11 trips in the weekday AM, midday, and PM peak hours, respectively. Additionally, as the closest subway station is greater than one mile from the Project Area, it is anticipated that those traveling to/from the Project Site via subway/rail would connect to a local bus route for the final leg of the journey. As such, as shown in **Table 3**, the Proposed Action are expected to generate an increase of approximately 38, 34, and 35 total bus trips (subway/rail and bus-only combined) in the weekday AM, midday, and PM peak hours, respectively. Lastly, person trips made entirely on foot (walk-only trips) and other modes would increase by approximately 16, 15, and 14 trips during the weekday AM, midday, and PM peak hours, respectively. Total pedestrian trips (including walk-only and transit trips) would increase by a net total of approximately 54, 49, and 49 trips in the weekday AM, midday, and PM peak hours, respectively.

Table 3: Travel Demand Forecast

		With-Action Condition			*No-Action Condition*			*Net Increment (With-Action - No-Action)*		
Land Use:		**Film & Television Production Studio**			**Last-Mile Distribution Facility**			**Net Increment**		
Size/Units:		244,568 gsf			244,568 gsf					
Peak Hour Person Trips:										
	AM	293			158			135		
	MD	196			72			124		
	PM	269			144			125		
Person Trips:										
		In	Out	Total	In	Out	Total	In	Out	Total
AM	**Auto**	130	46	176	45	51	96	85	-5	80
	Taxi	1	0	1	0	0	0	1	0	1
	Subway / Rail / Subway-to-Bus	42	15	57	14	16	30	28	-1	27
	Bus Only	18	6	24	6	7	13	12	-1	11
	Walk/Bike/Other	26	9	35	9	10	19	17	-1	16
	Total	217	76	293	74	84	158	143	-8	135
		In	Out	Total	In	Out	Total	In	Out	Total
MD	**Auto**	59	60	119	23	21	44	36	39	75
	Taxi	0	0	0	0	0	0	0	0	0
	Subway / Rail / Subway-to-Bus	18	19	37	7	6	13	11	13	24
	Bus Only	8	8	16	3	3	6	5	5	10
	Walk/Bike/Other	12	12	24	5	4	9	7	8	15
	Total	97	99	196	38	34	72	59	65	124
		In	Out	Total	In	Out	Total	In	Out	Total
PM	**Auto**	55	106	161	52	34	86	3	72	75
	Taxi	0	1	1	0	0	0	0	1	1
	Subway / Rail / Subway-to-Bus	18	34	52	17	11	28	1	23	24
	Bus Only	8	15	23	7	5	12	1	10	11
	Walk/Bike/Other	11	21	32	11	7	18	0	14	14
	Total	92	177	269	87	57	144	5	120	125
Land Use:		**Film & Television Production Studio**			**Last-Mile Distribution Facility**			**Net Increment**		
Vehicle Trips :										
		In	Out	Total	In	Out	Total	In	Out	Total
AM	**Auto (Total)**	116	41	157	40	46	86	76	-5	71
	Taxi Balanced	1	1	2	0	0	0	1	1	2
	Truck	5	2	7	1	76	77	4	-74	-70
	Total	122	44	166	41	122	163	81	-78	3
		In	Out	Total	In	Out	Total	In	Out	Total
MD	**Auto (Total)**	53	54	107	21	19	40	32	35	67
	Taxi Balanced	0	0	0	0	0	0	0	0	0
	Truck	5	4	9	2	21	23	3	-17	-14
	Total	58	58	116	23	40	63	35	18	53
		In	Out	Total	In	Out	Total	In	Out	Total
PM	**Auto (Total)**	49	95	144	46	30	76	3	65	68
	Taxi Balanced	1	1	2	0	0	0	1	1	2
	Truck	3	2	5	73	11	84	-70	-9	-79
	Total	53	98	151	119	41	160	-66	57	-9

LEVEL 1 SCREENING ASSESSMENT

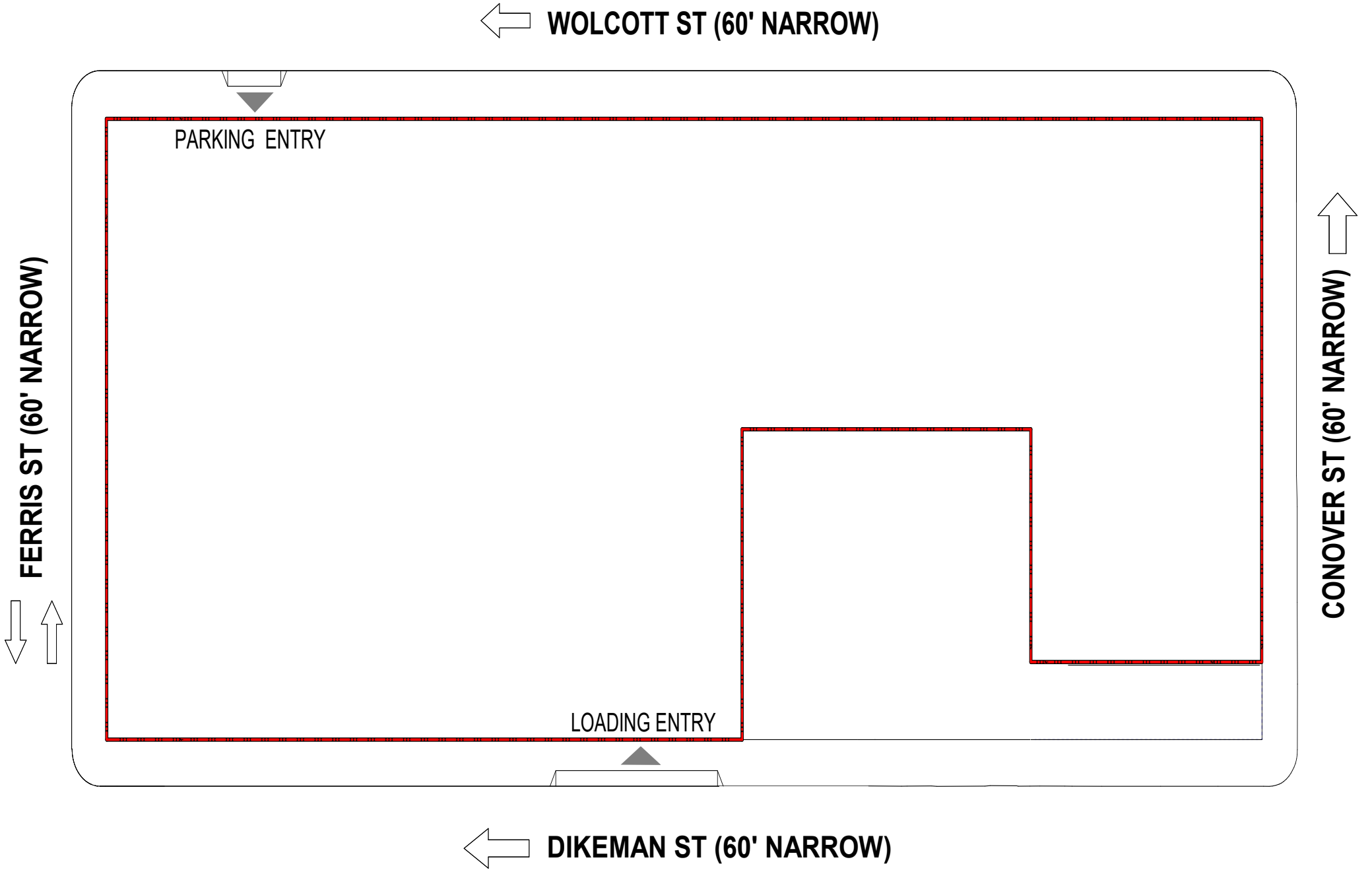
The *CEQR Technical Manual* describes a two-level screening procedure for the preparation of a preliminary analysis to determine if quantified operational analyses of transportation conditions are warranted. As discussed in the following sections, the preliminary analysis begins with a trip generation (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 incremental vehicle trips (including auto, taxi, and truck trips), fewer than 200 peak hour subway or bus trips, or fewer than 200 peak hour 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 subway trips at a station, 50 or more peak hour bus trips in one direction along a bus route, or 200 or more peak hour pedestrian trips at one point along 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, and pedestrians.

Traffic

Based on *CEQR Technical Manual* guidelines, a quantified traffic analysis is typically required if a proposed action would result in 50 or more vehicle trip ends (auto, taxi, and truck trips combined) in a peak hour at one or more intersections. As discussed above, the Proposed Action would result in an incremental increase of three total vehicle trips (an increase of 80 autos, an increase of one taxis, and a decrease of 70 trucks) in the weekday AM peak period, an increase of 53 total vehicle trips (an increase of 67 autos, no change in taxis, and a decrease of 14 trucks) in the weekday midday peak period, and an incremental decrease of nine total vehicle trips (an increase of 68 autos, an increase of two taxis, and a decrease of 79 trucks) in the weekday PM peak period. As the number of incremental peak hour vehicle trips do not exceed the 50-trip threshold in the weekday AM and PM peak hours, a Level 2 screening analysis is not needed for these periods, and traffic impacts are not expected as a result of the Proposed Action for the AM and PM peak periods.

As previously mentioned, in the weekday midday peak period, the Proposed Action would result in an incremental increase of 53 total vehicle trips. Since this exceeds the 50-trip threshold by three trips, the incremental vehicle trips for this peak period have been examined further. As shown in **Table 3** above, in the weekday midday peak hour, there are 35 net incremental 'in' trips and 18 net incremental 'out' trips.

As shown in **Figure 1**, the parking garage entrance is located on Wolcott Street while the loading entrance is both located on Dikeman Street. Wolcott and Dikeman Streets are both one-way northwest-bound streets that connect Conover Street to Ferris Street. Since both Wolcott and Dikeman Streets are one-way streets, all vehicles that access the Proposed Project's parking garage or loading docks must utilize either Wolcott Street or Dikeman Street at Conover Street. To exit, all vehicles must continue on Wolcott Street or Dikeman Street to Ferris Street, which is a two-way street, then to a southeast-bound street to the north or south of the project block. Since all vehicles entering and exiting the site must past different


WOLCOTT ST (60' NARROW)
PARKING ENTRY
FERRIS ST (60' NARROW)
CONOVER ST (60' NARROW)
LOADING ENTRY
DIKEMAN ST (60' NARROW)

intersections, the net incremental 53 total vehicle trips are not concentrated on one intersection. Rather, the 32 incremental 'in' auto trips would access the site by the intersection of Conover Street and Wolcott Street and the three incremental 'in' truck trips would access the site by the intersection of Conover Street and Dikeman Street. The 18 'out' vehicle trips would exit the site by either the Wolcott and Ferris Street or Dikeman and Ferris Street intersections then to a southeast-bound street to the north or south of the project block. As the 53 total net incremental vehicle trips in the weekday midday peak hour would be distributed between intersections around the Project Area, no intersection would likely exceed the 50-trip threshold. As such, further analysis is not needed for this period, and traffic impacts are not expected as a result of the Proposed Action for the midday peak period, in addition to the aforementioned AM and PM peak periods.

Transit

According to the general thresholds used by the Metropolitan Transportation Authority (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 subway or bus transit riders. If a proposed action would result in 50 or more bus passengers being assigned to a single bus line (in one direction), or if it would result in an increase of 200 or more passengers at a single subway station, 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 3** and discussed above, the Proposed Action would generate an incremental increase of 27 and 24 subway trips in the weekday AM and PM peak hours, respectively. The Proposed Actions would also generate an incremental increase of 11 and 11 bus-only trips in the above-mentioned peak hours, respectively. However, it is anticipated that those traveling to/from the Project Site via subway/rail would connect to a local bus route for the final leg of the journey. As such, the Proposed Action would generate an incremental increase of 38 and 35 total bus trips (including bus-only trips and subway/rail trips) in the weekday AM and PM peak hours, respectively. As such, these incremental subway and bus trips fall below the *CEQR Technical Manual* threshold of 200 or more new subway or bus passengers in any peak hour. Therefore, detailed subway and bus analyses are not warranted as a result of the Proposed Actions.

Pedestrians

According to *CEQR Technical Manual* guidelines, 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 3** and discussed above, the Proposed Actions would generate an increment of 54, 49, and 49 total pedestrian trips (including walk-only, subway-to-bus, and bus trips) in the weekday AM, midday, and PM peak hours, respectively. As the number of incremental peak hour pedestrian trips do not exceed the 200-trip threshold in any peak period, a Level 2 screening analysis is not needed, and further pedestrian analysis is not warranted as pedestrian impacts are not expected.

Parking

Under *CEQR Technical Manual* guidance, parking analyses may be warranted if a quantified traffic analysis is necessary based on the Levels 1 and 2 screening analyses. Based on the traffic screening assessment detailed above, the threshold for a quantified traffic analysis is not exceeded and detailed on- and off-street parking analyses are not warranted.

CONCLUSIONS

A transportation forecast was prepared for the Proposed Project, an approximately 244,568 gsf film and television production studio, containing four soundstages and accessory facilities for stage support and accessory offices. Absent approval of the NYCIDA financial asssistance, the development of an as-of-right,approximately 244,568 gsf (167,028 zsf) last-mile distribution facility, would be facilitated.

According to the 2021 *CEQR Technical Manual* guidelines, if a proposed development is expected to result in fewer than 200 peak hour pedestrian, subway, and bus trips, and fewer than 50 peak hour vehicle trips, further quantified analyses are not warranted. To determine the factors used for the travel demand forecast for the proposed production studio, data was based on the 2021 *CEQR Technical Manual*, projects with similar uses (e.g., the 2022 *Pier 92/94 Lease Amendment EAS*), Project Area census data, as well as guidance from NYCDOT. As shown above in **Table 3**, the Proposed Project, as compared to the as-of-right development, would not exceed the CEQR transportation thresholds requiring detailed analyses for traffic, subway, bus, pedestrian, or parking conditions; and therefore, would not likely create any transportation impacts.

Appendix II:

Phase I Environmental Site Assessment

145-65 WOLCOTT STREET
BROOKLYN, NEW YORK
NYSDEC BCP ID: C224256

PHASE I REMEDIAL INVESTIGATION REPORT
REVISION 2

SUBMITTED TO:

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233

PREPARED FOR:

Red Hook JV, LLC

PREPARED BY:

P.W. Grosser Consulting, Inc.
630 Johnson Avenue, Suite 7
Bohemia, New York 11716
Phone: 631-589-6353
Fax: 631-589-8705

Kris Almskog, PG, Vice President krisa@pwgrosser.com
Usman Chaudhry, Senior Hydrogeologist uchaudhry@pwgrosser.com

PWGC Project Number: FPL1901

APRIL 19, 2021

PWGC
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REMEDIAL INVESTIGATION REPORT
145-65 WOLCOTT STREET (C224256)

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P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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CERTIFICATION

I, Kris Almskog, PG, certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Remedial Investigation Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

I certify that all information and statements in this certification are true. I understand that a false statement made herein is punishable as Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

11-11-2020

Signature Date

It is a violation of Article 145 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 145, New York State Education Law.

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P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
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1.0 INTRODUCTION

P.W. Grosser Consulting, Inc. (PWGC) has prepared this Remedial Investigation Report (RIR) to outline procedures, scope of work, and analytical results intended to delineate impacted areas of concern at the Site identified as 145-65 Wolcott Street, Brooklyn, New York 11231.

145-65 Wolcott St. Realty Corp. was accepted into the New York State Department of Environmental Conservation's (NYSDEC) Brownfield Cleanup Program (BCP) as a volunteer as set forth in a Brownfield Cleanup Agreement (BCA), dated February 21, 2018 (Site No. C224256). The property and the BCA were subsequently transferred to a new ownership group led by Red Hook JV, LLC in August 2019.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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2.0 SITE DESCRIPTION AND HISTORY

2.1 Site Description

The Site is located at 146-65 Wolcott St. in Kings County, New York and is identified as Section 30207, Block 547 and Lots 1, 24, and 23 on the New York City Tax Map. The Site is improved with a main warehouse building and portable office trailer buildings. The remainder of the Site is paved parking area. The entire property is approximately 1.8 acres in area.

The Site is currently inactive and has most recently been utilized for bus storage. The property is zoned M2-1 manufacturing. The surrounding properties are utilized as a mix of industrial use, commercial space, and residential uses.

A Site Vicinity map is included as **Figure 1**. A Site Plan with Historical Sampling Locations, including the surrounding properties, is included as **Figure 2**.

2.2 Site History

The environmental site history is detailed in a combined Phase I / Phase II Environmental Site Assessment (ESA) Report prepared by Volumetric Techniques, Ltd. (VTL) dated February 9, 2015 (VTL). The summary of the property's environmental history detailed below is based upon the findings of the VTL ESA.

Certified Environmental Site Assessment (VTL), February 9, 2015

The Site consists of 1.8 acres over three adjacent tax lots. The Site encompasses approximately 80% of a city block and is bound by Wolcott Street to the northeast, Conover Street to the southeast, Dikeman Street to the southwest and Ferris Street to the northwest. There are several adjacent property lots in the south corner of the block that are not included as part of this Site. The property is improved with a 25,000 ft^2 warehouse structure built in the early 1900s and two portable office structures, each approximately 500 ft^2. The remainder of the Site is paved parking.

The warehouse structure has a maintenance pit and electric lifts and contains offices on the second floor. The property has recently been used for school bus maintenance and storage.

2.3 Regional Geology/Hydrogeology

The geologic setting of western Long Island is well documented and consists of crystalline bedrock composed of schist and gneiss overlain by layers of unconsolidated deposits. Immediately overlying the bedrock is the Raritan Formation, consisting of the Lloyd sand confined by the Raritan Clay Member. The Lloyd sand is an aquifer and consists of discontinuous layers of gravel, sand, sandy and silty clay, and solid clay. The Raritan Clay is a solid and silty clay with few lenses of sand and gravel; abundant lignite and pyrite; and is gray, red or white in color.

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P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
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Above the Raritan Clay lies the Magothy Formation. The Magothy Aquifer consists of layers of fine to coarse sand of moderate to high permeability, with interbedded lenses of silt and clay of low permeability resulting in areas of preferential horizontal flow. Therefore, this aquifer generally becomes more confined with depth. The Magothy Aquifer is overlain by the Jameco and Upper Glacial Aquifer systems. The Upper Glacial Aquifer is the water-table aquifer at this location and is comprised of medium to coarse sand and gravel with occasional thin lenses of fine sand and brown clay. This aquifer extends from the water-table to the top of the Magothy and, therefore, is hydraulically connected to the Magothy Aquifer.

2.4 Site Geology/Hydrogeology

The Site soils consist primarily of historical fill material that extends from grade to 10 feet below ground surface (bgs). Silty sands were encountered at depths ranging from approximately 2 to 20 feet bgs. Underlying the silty sands were poorly graded sands to at least 70 feet bgs.

Based on the results of this Remedial Investigation (RI), groundwater is present at approximately 9 feet below grade at the Site. The groundwater elevation changes due to a tidal influence. The Site-specific groundwater flow direction is toward the southwest.

Site-specific groundwater contour maps are included as **Figures 3A and 3B**.

2.5 Site Features

The project Site elevation is approximately 10 feet above mean sea level and is generally level. The Site is developed with a warehouse structure and two portable office buildings. The remainder of the Site is paved parking. There is a 4,000-gallon diesel above ground storage tank (AST) located on the northern portion of the Site which is enclosed in concrete. There are no exposed areas of vegetation.

2.6 Current and Future Site Use

The Site was most recently utilized for maintenance and storage of buses. The current owner may utilize the Site while re-zoning of the Site proceeds, which is anticipated to take between two to three years. These interim uses may include, but not be limited to the following:

- Auto-related storage and repair
- Materials storage
- Film and television production
- Restaurants and amusements

Mixed-use redevelopment (commercial and residential) is currently being considered and is dependent on the re-zoning process currently underway. The mixed use may include multiple

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P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
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buildings of varying heights with no basements and whose first floors would likely be raised for flood mitigation.

2.7 Previous Environmental Investigations

2.7.1 Phase II ESA Report (March 2015)

As part of the VTL Phase II ESA, soil samples and groundwater samples from 20 borings throughout the Site were collected in February and March 2015. No soil vapor samples were collected.

During the subsurface investigation, historical fill material (i.e. wood, coal/bituminous ash, tars, concrete, brick, resins) were observed in the subsurface down to the water table.

The soil samples that were collected during Phase II were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals. The samples were compared to the NYSDEC Unrestricted Use Soil Clean-Up Objectives (UUSCO) and Commercial Use Soil Clean-Up Objectives (CUSCO). Laboratory analysis showed each soil sample contained one or more compounds/analytes that exceeded UUSCOs. Multiple VOCs, SVOCs, and metals were also detected in multiple samples in excess of their respective CUSCOs.

Exceedances of VOCs, SVOCs, and metals were identified in the northeast corner of the Site. These exceedances included, but were not limited to, benzo(a)anthracene, chrysene, indeno(1,2,3-cd)pyrene, toluene, acetone, arsenic, lead, and chromium. The temporary wells (TM3, 4 and 5) placed along the southern perimeter along Dikeman street revealed polynuclear aromatic hydrocarbons (PNA), (oil and tar). Exceedances of n-propylbenzene, lead, and chromium were identified in the southeast corner of the Site. **Figure 2** indicates the locations of the Phase II ESA soil samples.

In addition, a soil sample was collected from 0 - 2 feet below the land surface of a storm drain culvert on the east side of the rear yard. The results of this sample had elevated concentrations of VOCs, SVOCs, and metals that exceeded UUSCOs.

During the review of records, a total of eight ASTs and underground storage tanks (USTs) were indicated. These tanks have reportedly been removed from the site, with the possible exception of a 275-gallon UST under the old body shop, a 4,000-gallon diesel fuel AST, and a reportedly abandoned 6,000-gallon diesel UST located on the north side of the property.

The groundwater samples that were collected during the Phase II ESA were analyzed for VOCs, SVOCs, and metals and were compared to the New York State Ambient Water Quality Standards

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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(AWQS). VOC, SVOCs, and metals were each detected in multiple samples at the Site in concentrations exceeding their respective AWQS.

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3.0 STANDARDS, CRITERIA, AND GUIDANCE (SCGs)

Based on the previous investigation of the Site and this RI, the chemicals of concern (COC) encountered at the subject property are VOCs (benzene compounds, toluene, xylenes, and chlorinated VOCs), SVOCs (polycyclic aromatic hydrocarbons), and metals (chromium and lead) related to the former on-site industrial usage.

Applicable regulations at NYSDEC 6 NYCRR Part 375 provide Soil Cleanup Objectives (SCOs) based upon future Site use. In addition, Track 3 (restricted use with modified soil cleanup objectives) and Track 4 (restricted use with site-specific cleanup objectives) cleanup options can include removal of contaminated soils using Site-specific soil objectives, partial removal with surface capping, in situ treatment, and Institutional Controls (IC) and/or Engineering Controls (EC) to prevent exposure of workers and future inhabitants to COPCs. In addition, groundwater protection values will be used for soil contamination that is within the aquifer. For the purposes of this project, soil results are compared to the Restricted Use SCOs.

Groundwater sample results are compared to the NYSDEC Class GA Ambient Water Quality Standards (AWQS) as specified in the Technical Operation and Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values.

Soil vapor and air sample results are compared to the Sub Slab Vapor Indoor Air Matrices and the Indoor Air Guideline Values specified in the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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4.0 REMEDIAL INVESTIGATION

The primary objectives of the work detailed in this report was to collect the information and field data necessary to delineate the extent of soil and groundwater contamination at the Site. The Scope of Work is based on the NYSDEC-approved remedial investigation work plan dated June 25, 2018, and included the following tasks:

1. Geophysical investigation
2. Characterization of potential areas of concern
3. Delineation of on-site soil impact
4. Characterization of on-site groundwater
5. Confirmation of site-specific groundwater flow direction
6. Characterization of on-site soil vapor intrusion
7. On-site and off-site qualitative human health exposure evaluation

4.1 Geophysical Investigation

To evaluate whether USTs or other features that may require investigation are present at the Site, PWGC performed a geophysical survey at the subject property on October 10, 2018. The geophysical survey was performed throughout the accessible exterior portions of the Property. Geophysical services were provided by Delta Geophysics Inc. (Delta) of Catasauqua, Pennsylvania under the oversight of PWGC. An electromagnetic (EM) detection instrument (Fisher M-Scope TW-6), precision utility locator (Radio detection RD7000), and ground penetrating radar (GPR) (Geophysical Survey Systems Inc. SIR-3000 cart-mounted GPR unit with a 400 Mhz antenna) were used to perform the geophysical survey.

The GPR was configured to transmit to a depth of approximately 10 feet below the subsurface. Actual signal penetration depth was limited in some areas due to signal attenuation from soils. The piping and tanks for most USTs are at least partially located within shallow soils in the range of signal penetration.

Further information regarding the methodology, limitations, and equipment used for the geophysical survey are detailed in the Geophysical Survey Report, which is included as **Appendix A**.

The geophysical survey identified seven EM anomalies at the Site. The EM anomalies were apparently related to the presence of subsurface debris, buried metal plates and buried reinforced concrete. One anomaly (Metallic Anomaly #7), identified in the northwestern portion of the property, is consistent with buried reinforced concrete and has dimensions that could be representative of a 6,000-gallon tank. A second anomaly in the northwestern portion of the property represented a trench-like variation in soil density adjacent to the tar area in the western

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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paved area. The GPR did not identify anomalies associated with the USTs in the former UST area indicated on **Figure 2**. Subsurface utility lines for water, gas, electric, telecommunication, and sanitary sewer were also identified at the property.

4.2 Characterization of Potential Areas of Concern

The previous investigation identified historical fill material (i.e. wood, coal/ bituminous ash, tars, concrete, brick, resins) in the subsurface down to the water table, the floor drains, the exterior culvert adjacent to the building, tank areas, and the tar area. Potential source areas were delineated as part of this RI. In addition, an adequate number and type of samples were collected and analyzed to perform a sufficient and accurate characterization of the Site and prepare a qualitative exposure assessment offsite.

Sampling was performed in accordance with the Division of Environmental Remediation (DER) DER-10 Technical Guidance for Site Investigation and Remediation, May 2010 and the approved Remedial Investigation Work Plan.

4.3 Delineation of On-Site Soil Impact

To characterize subsurface soil conditions, 18 soil borings (SB001 through SB018) were installed throughout the Site between July 31, 2018 to June 25, 2019. Boring locations were focused near areas in which elevated VOCs, SVOCs, and metals were detected during previous investigations, in the area of the tar-like substance, in current, former, and potential tank areas, and where samples were not previously collected. Soil boring locations are indicated on **Figure 4**.

Soil borings were installed utilizing a Geoprobe® direct-push drill rig outfitted with a macro-core sampler and dedicated acetate liners. Soils were collected continuously from ground surface to below the water table. The observed depth to groundwater beneath the Site noted during the RI ranged from approximately 8 to 10 feet below grade. Non-dedicated sampling equipment was decontaminated in accordance with the procedures specified in Section 5.9 of the approved RI Work Plan.

Soils were field-screened for the presence of VOCs using a photoionization detector (PID) and classified in accordance with the Unified Soil Classification System (USCS). Soil Boring Logs are included as **Appendix B**.

The 18 soil borings installed as part of the RI,16 of the 18 soil borings were advanced to the depth of ground water below grade at each location. The two remaining soil borings SB002 and SB008 were installed to a depth of 72ft and 62ft below grade. The soil borings indicate the presence of fill material (brick, concrete and asphalt) throughout the site to an average depth of 10 ft bgs. Silty

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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sands were encountered at depths ranging from approximately 5 to 20 feet bgs through the borings. Underlying the silty sands were poorly graded sands to at least 70 feet bgs.

An acidic odor was observed in the soil borings (SB012, SB013) in the eastern section of the warehouse building. Soil borings (SB006 and SB003) installed in the vicinity of the former UST area exhibited a petroleum odors. In addition, a tar-like material with and an elevated PID response up to 1500 ppm was observed in SB018 starting at the depth of 0.5 ft below grade to a depth of 8 ft below grade. Tar, resins, and oils, significant staining and or odors or elevated PID responses were not observed in the other 13 soil borings installed.

4.3.1 Sampling Protocol

Soil samples were collected from each soil boring from the intervals specified in Section 4.3 of the approved RI Work Plan. The sampling intervals at each soil boring are detailed below.

Boring Locations	Shallow Interval (ft bgs)	Deep Interval (ft bgs)
SB001	0 to 2	17 to 19
SB002	0 to 2	6 to 8
SB003	0 to 2	6 to 8
SB004	0 to 2	Not sampled
SB005	0 to 2	6 to 8
SB006	0 to 2	6 to 8
SB007	0 to 2	6 to 8
SB008	0 to 2	6 to 8
SB009	0 to 2	6 to 8
SB010	0 to 2	6 to 8
SB011	0 to 2	6 to 8
SB012	0 to 2	6 to 8
SB013	0 to 2	6 to 8
SB014	0 to 2	6 to 8
SB015	0 to 2	6 to 8
SB016	0 to 2	6 to 8
SB017	0 to 2	6 to 8
SB018	12 to 14 & 14 to 16	60 to 62

At each boring location, a shallow and a deep sample were submitted for analysis. Shallow interval samples were selected to be representative of historical fill material at the Site. The 6- to 8-foot interval was selected to be representative of the Upper Glacial deposits above the saturated zone. Deeper samples were collected at the SB018 location to confirm that deep soil contamination (as identified on the adjacent site to the north) was not present at the subject Site.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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4.3.2 Sample Analysis

Soil samples were collected in pre-cleaned, pre-preserved, laboratory-supplied glassware and stored in a cooler on ice for transport to the laboratory. Samples were submitted to Alpha Analytical of Westborough, Massachusetts, a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory (ELAP ID: 11148). Each soil sample was analyzed for the following:

- Target Compound List (TCL) VOCs by United State Environmental Protection Agency (USEPA) Method 8260
- TCL SVOCs by USEPA Method 8270
- TCL Pesticides/Polychlorinated Biphenyls (PCBs) by USEPA Method 8081/8082
- Target Analyte List (TAL) Metals by USEPA Method 6010/7471

Samples collected for VOCs were discrete samples (non-composite and non-homogenized) to minimize VOC loss.

4.3.3 Analytical Results

Soil sample results are compared to the Restricted Residential Soil Cleanup Objectives (RRSCOs), Commercial Use Soil Cleanup Objectives (CUSCOs), and Industrial Use Soil Cleanup Objectives (IUSCOs) specified in 6 NYCRR Part 375, Environmental Remediation Programs (December 2006).

4.3.3.1 Volatile Organic Compounds

A total of 37 soil samples were submitted for VOC analysis. Analytical results are summarized in **Table 1** and **Figure 5**; laboratory reports are included as **Appendix C**.

VOCs were not detected at concentrations exceeding their respective RRSCOs, CUSCOs, and IUSCOs in shallow interval samples collected from 0 to 2-foot bgs.

With the exception of one location (SB-13), VOCs were not detected at concentrations exceeding their respective RRSCOs, CUSCOs, or IUSCOs in the deep interval samples (6 to 8 feet bgs) collected from the 2-foot interval immediately above the water table, or in samples collected from beneath the water table (SB-18 and SB-001). The deep soil sample from SB-13 contained 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, naphthalene, and xylene in concentrations above RRSCOs.

4.3.3.2 Semi-Volatile Organic Compounds

A total of 34 soil samples were submitted for SVOC analysis. Analytical results are summarized in **Table 2** and **Figure 5**; laboratory reports are included as **Appendix C**.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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SVOCs exceeding their respective RRSCOs, CUSCOs and/or IUSCOs were detected in samples collected from the shallow interval at boring locations SB001, SB002, SB003, SB004, SB005, SB006, SB007, SB008, SB009, SB010, SB012, SB014 and SB018. SVOCs with detected exceedances consisted of the following polyaromatic hydrocarbons (PAHs): benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(ah)anthracene, and indeno(1,2,3-cd)pyrene.

SVOCs exceeding their respective RRSCOs, CUSCOs and/or IUSCOs were detected in samples collected from the deeper interval at borings locations SB002, SB003, SB005, SB008, SB009, SB010, SB011, SB012 and SB013. SVOCs with detected exceedances consisted of the following PAHs: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(ah)anthracene, and indeno(1,2,3-cd)pyrene.

4.3.3.3 Metals

A total of 37 soil samples were collected for metals analysis. Analytical results are summarized in **Table 3** and **Figure 5**; laboratory reports are included as **Appendix C**.

Several metals were detected at concentrations exceeding their respective RRSCOs, CUSCOs and/or IUSCOs in samples collected from the shallow interval at boring locations SB002, SB003, SB006, SB008, SB010, SB011, SB012, SB013, SB014, SB015 and SB018.

With the exception of arsenic at boring location SB013 (6 to 8 feet), metals were not detected at concentrations exceeding their respective RRSCOs, CUSCOs and IUSCOs in samples collected from the deep interval (the 2-foot interval immediately above water table) at the Site.

4.3.3.4 Pesticides and PCBs

A total of 37 soil samples were collected for pesticide and PCB analysis. Analytical results are summarized in **Table 4** and **Figure 5**; laboratory reports are included as **Appendix C**.

Pesticides were detected at concentrations below their respective RRSCOs, CUSCOs, and IUSCOs in samples collected from the shallow interval at all boring locations.

Pesticides were not detected at concentrations above their respective RRSCOs, CUSCOs, and IUSCOs in samples collected from 6 to 8 feet bgs (2-foot interval immediately above water table) at the Site.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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4.3.4 Discussion of Results

Identified soil contamination at the Site primarily consisted of SVOCs (specifically PAHs) and metals at concentrations exceeding their respective RRSCOs, CUSCOs, and/or IUSCOs. In general, the highest concentrations were detected in near surface (approx. 0 to 2 feet below grade) soils, although elevated SVOC concentrations appear to extend down to the water table at several locations. Such impact at the levels detected at the Site is commonly associated with the presence of historical fill material. This interpretation is supported by the presence of debris (brick/wood/glass) observed in soils at the Site to depths of up to 10 feet below grade. However, surficial discharges related to the historical usage of the Site may have contributed to soil impact as well. VOC impact at the Site was limited to one sample location, the deep sample from boring SB-13 that contained VOC concentrations above RRSCOs but below CUSCOs.

4.4 Determination of Site-Specific Groundwater Flow Direction

4.4.1 Monitoring Well Installation and Development

Eleven permanent monitoring wells (MW001 through MW011) were installed at the Site between June 20, 2019, and June 25, 2019. Monitoring wells were installed using a rotary drill rig. Wells were constructed of a 2-inch diameter schedule 40 PVC casing and screen with 0.010-inch slots. Monitoring wells are screened across the water table with 10 feet of screen overlain by a solid riser to grade. A gravel pack of No. 2 Morie sand was placed in the annulus around the screen and to 2 feet above the screen, with a 2-foot bentonite seal placed above the gravel pack. Above the bentonite layer, the annulus around the well was filled with a cement/bentonite grout. Monitoring wells were finished at grade with a flush mount curb box.

Following installation, newly installed monitoring wells were over-pumped to restore the hydraulic properties of the aquifer. Well development continued until the turbidity of the groundwater was less than or equal to 50 Nephelometric Turbidity Units (NTUs) and when pH, temperature, and conductivity measurements stabilized. Monitoring well development water was containerized in 55-gallon drums for offsite disposal.

Monitoring well construction and sampling logs are included as **Appendices D** and **E**, respectively.

4.4.2 Groundwater Flow Evaluation

Following monitoring well installation and development, PWGC surveyed on-site monitoring wells relative to an arbitrary datum. The measuring point on each well casing was marked for future measurements. Survey data and depth to water measurements were used to generate a Site-specific groundwater flow direction. Based upon the survey data and depth to water measurements, the groundwater flow direction at the Site is primarily toward the southwest. A

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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tidal influence was measured in several of the Site's monitoring wells. Groundwater contour maps are included as **Figures 3A** and **3B**.

4.5 Characterization of On-Site Groundwater – Monitoring Wells

To characterize groundwater conditions beneath the Site, eleven permanent monitoring wells were installed. Monitoring well locations are illustrated on **Figure 4**.

4.5.1 Sampling Protocol

Groundwater samples were collected from each monitoring well at the Site between July 2, 2019, and August 3, 2019. No light non-aqueous phase liquid (LNAPL) was observed during these sampling events in any of the monitoring wells. Samples were collected using a peristaltic pump fitted with dedicated high-density polyethylene (HDPE) tubing. Samples were collected in accordance with USEPA Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells (September 2017). A Horiba U-22 multi-parameter water quality meter outfitted with a flow-through cell was utilized to monitor field parameters (turbidity, pH, temperature, and conductivity) at 3- to 5-minute intervals. Upon stabilization of field parameters (three consecutive readings within allowable tolerances), groundwater samples were collected. Samples were collected and handled in accordance with Section 4.2.4 of the approved RI Work Plan. Non-dedicated sampling equipment was decontaminated in accordance with the procedures specified in Section 5.9 of the approved RI Work Plan. Well Sampling Logs are included as **Appendix E**.

4.5.2 Sample Analysis

Samples were collected in pre-cleaned, pre-preserved, laboratory supplied glassware and stored in a cooler on ice for transport to the laboratory. Samples were submitted to Alpha Analytical of Westborough, Massachusetts, an NYSDOH ELAP certified laboratory (ELAP ID: 11148). Each groundwater sample was analyzed for the following:

- TCL VOCs by USEPA Method 8260
- TCL SVOCs by USEPA Method 8270
- TCL pesticides/PCBs by USEPA Method 8081/8082
- TAL metals by USEPA Method 6010/7471; total (unfiltered) and dissolved (filtered)
- Per- and Polyfluoroalkyl substances (PFAS) by USEPA Method 537 (modified)

4.5.3 Analytical Results

Groundwater analytical results are compared to the Class GA AWQS specified in TOGS 1.1.1, Ambient Water Quality Standards and Guidance Values on Groundwater Effluent Limitations, June 1998.

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P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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4.5.3.1 Volatile Organic Compounds

Eleven groundwater samples (one sample from each well) were collected for VOC analysis. Analytical results are summarized in **Table 5** and **Figure 6**; laboratory reports are included as **Appendix C**.

VOCs were detected at concentrations exceeding their respective AWQS in six of the eleven groundwater samples collected from the Site including acetone, 1,2,4,5-tetramethylbenzene, 1,2,4-trimethylbenzene, 1,2-dichloroethane, 1,3,5-trimethylbenzene, benzene, ethylbenzene, isopropylbenzene, n-butylbenzene, n-propylbenzene, naphthalene, o-xylene, p-chlorotoluene, and toluene. The monitoring wells with exceedances were MW001, MW002, MW003, MW004, MW008, and MW010.

4.5.3.2 Semi-Volatile Organic Compounds

Eleven groundwater samples were collected for SVOC analysis. Analytical results are summarized in **Table 6** and **Figure 7**; laboratory reports are included as **Appendix C**.

SVOCs were detected at concentrations exceeding their respective AWQS in groundwater samples collected from the Site. Several SVOCs, including acenaphthene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, and phenanthrene were detected at concentrations exceeding their respective AWQS in monitoring wells MW001, MW002, MW004, MW005, MW006, MW007, MW008, MW010, and MW011. Phenol was detected at a concentration exceeding the AWQS at monitoring well MW003.

During the Remedial Investigation, monitoring wells MW-004 and MW005, and soil borings SB-007 and SB011 were installed in the area of VTL's ESA soil borings TM-3, TM-4, and TM-5. Evidence of fill material, SVOCs, and metals were encountered during the RI. However, LNAPL, tar, resins or oils were not encountered.

4.5.3.3 Metals

Eleven groundwater samples were collected for metals analysis. Samples were analyzed for total (unfiltered) and dissolved (filtered) concentrations. Analytical results are summarized in **Table 7** and **Figure 8**; laboratory reports are included as **Appendix C**.

One or more metals were detected at concentrations exceeding their respective AWQS in each of the groundwater samples collected from the monitoring wells. Filtered (dissolved) samples contained magnesium (MW004, MW008), manganese (MW001, MW004, MW007, MW008,

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P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
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MW009, MW010, MW011), and nickel (MW009) at concentrations exceeding their respective AWQS.

4.5.3.4 Pesticides and PCBs

Eleven groundwater samples were submitted for pesticide/PCB analysis. Analytical results are summarized in **Table 8**; laboratory reports are included as **Appendix C**.

Pesticides and PCBs were not detected at concentrations exceeding their respective AWQS in groundwater samples collected from the Site.

4.5.3.5 Emerging Contaminants

Ten groundwater samples were submitted for PFAS and 1,4-dioxane analysis. Analytical results are summarized in **Table 9** and **Figure 9**; laboratory reports are included as **Appendix C**.

NYSDEC has proposed a Maximum Contaminant Level (MCL) for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) of 10 nanograms per liter (ng/l) in groundwater. USEPA has established a lifetime Health Advisory Level (HAL) of 70 ng/l for PFOA and PFOS. Multiple PFAS compounds were detected in each groundwater sample collected from the Site. Total PFOA/PFOS exceeded the USEPA HAL in four of the monitoring wells (MW001, MW004, MW008, and MW009). The highest total PFOA/PFAS concentration was detected in the MW001 sample (188 ng/l).

1,4-dioxane was not detected at concentrations exceeding the laboratory MDL in groundwater samples collected from the Site.

4.5.4 Discussion of Results

Detectable concentrations of VOCs, SVOCs and metals in excess of AWQS were identified in groundwater samples at the Site. Elevated VOC concentrations are likely the result of both historical on-site uses and off-site sources. Elevated SVOCs and metals are likely the result of historical Site uses and the presence of historical fill material in the soil. Iron, magnesium, manganese, and sodium are naturally-occurring metals that are commonly found in the region's groundwater. The presence of these metals on-site is unlikely to be the result of historical Site uses.

4.6 Characterization of On-Site Groundwater - Vertical Profile Sampling

Four temporary vertical profile wells were installed between January 4, 2019 and June 24, 2019 using a direct-push drill rig (Geoprobe®, or equivalent) fitted with a 4-foot, stainless steel, sealed screen sampler (Geoprobe® Screen Point Sampler, or equivalent). At each vertical profile location,

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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samples were collected at 10-foot intervals beginning at the water-table interface and extending to the terminal depth of the vertical profile. Vertical profile locations are illustrated in **Figure 4.**

4.6.1 Vertical Profile Sampling Protocol

At each sample interval, the screen point sampler was opened, exposing a 4-foot screen to facilitate sample collection. Following sample collection, the sampling screen was recovered and decontaminated prior to reinstallation at the next sample interval. This process continued to a depth of 80 feet bgs. Groundwater samples were collected in compliance with the USEPA Low-flow Groundwater Purging and Sampling Procedure (USEPA,2017).

Based on the observed depth to groundwater beneath the Site (approximately 10 feet bgs), and the reported depth of contamination on adjacent sites, eight samples were collected from each vertical profile well: 9 to 13 feet, 16 to 20 feet, 26 to 30 feet, 36 to 40 feet, 46 to 50 feet, 56 to 60 feet, 66 to 70 feet, and 76 to 80 feet.

4.6.2 Sample Analysis

Samples were collected in pre-cleaned, pre-preserved, laboratory supplied glassware and stored in a cooler on ice for transport to the laboratory. Samples were submitted to Alpha Analytical of Westborough, Massachusetts, a NYSDOH ELAP certified laboratory (ELAP ID: 11148). Each groundwater sample was analyzed for the following:

- TCL VOCs by USEPA Method 8260
- TCL SVOCs by USEPA Method 8270
- TCL pesticides/PCBs by USEPA Method 8081/8082
- TAL metals by USEPA Method 6010/7471; total (unfiltered) and dissolved (filtered)
- PFAS by USEPA Method 537 (modified)

4.6.3 Analytical Results

Vertical profile sample results are compared to the Class GA AWQS specified in TOGS 1.1.1, Ambient Water Quality Standards and Guidance Values on Groundwater Effluent Limitations, June 1998.

4.6.3.1 Volatile Organic Compounds

Thirty-two groundwater samples (eight samples from each temporary vertical profile well) were submitted for VOC analysis. Analytical results are summarized in **Table 10** and **Figure 10**; laboratory reports are included as **Appendix C**.

VOCs including acetone, 1,2,4,5-tetramethylbenzene, 1,2,4-trimethylbenzene, 1,2-dichloroethane, 1,3,5-trimethylbenzene, benzene, ethylbenzene, isopropylbenzene,

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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n-butylbenzene, n-propylbenzene, naphthalene, xylene, sec-butylbenzene, styrene, p-chlorotoluene, and toluene were detected at concentrations exceeding their respective AWQS in each of the vertical profile wells at the Site.

4.6.3.2 Semi-Volatile Organic Compounds

Thirty-one groundwater samples were collected for SVOC analysis. Analytical results are summarized in **Table 11** and **Figure 11**; laboratory reports are included as **Appendix C**.

Several PAH compounds were detected at concentrations exceeding their respective AWQS in each of the groundwater samples collected from the temporary vertical profile wells.

4.6.3.3 Metals

Thirty-one groundwater samples were submitted from four temporary vertical profile wells for metals analysis. Samples were analyzed for total (unfiltered) and dissolved (filtered) concentrations. Analytical results are summarized in **Table 12** and **Figure 12**; laboratory reports are included as **Appendix C**.

One or more total metals were detected at concentrations exceeding their respective AWQS in all groundwater samples collected from the temporary vertical profile wells. Filtered (dissolved) samples contained magnesium (VP001, VP002, VP003, VP004), manganese (VP001, VP002, VP003, VP004), and antimony (VP002, VP003) at concentrations exceeding their respective AWQS. Iron and sodium are detected at concentrations exceeding their respective AWQS in all vertical profile samples, with a trend of increasing concentrations with depth.

4.6.3.4 Pesticides and PCBs

Thirty-one groundwater samples were collected from four temporary vertical profile wells for pesticide/PCB analysis. Analytical results are summarized in **Table 13** and **Figure 13**; laboratory reports are included as **Appendix C**.

Pesticides were not detected at concentrations exceeding their respective AWQS in any of the vertical profile samples collected from the Site. PCBs were detected in two samples VP002 (10-14) and VP004 (66-70) at concentrations exceeding their respective AWQS

4.6.3.5 Emerging Contaminants

Thirty-one groundwater samples were collected from four temporary vertical profile wells for PFAS and 1,4-dioxane analysis. Analytical results are summarized in **Table 14** and **Figure 14**; laboratory reports are included as **Appendix C**.

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P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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NYSDEC has proposed an MCL for PFOA and PFOS of 10 ng/l in groundwater. USEPA Has established a lifetime HAL of 70 ng/l for PFOA and PFOS. Multiple PFAS compounds were detected in each groundwater sample collected from the Site. Total PFOA/PFOS exceeded the USEPA HAL in each of the four vertical profile locations, with exceedances detected from the water table down to depths of 60 feet. Detected concentrations of PFOA/PFAS were within the HAL in samples collected from 66 feet and deeper. The highest total PFOA/PFAS concentration (248 ng/l) was detected in sample VP001 (36-40 feet), located in the west corner of the Site.

1,4-dioxane was not detected at concentrations above the laboratory MDL in groundwater samples collected from the Site.

4.6.4 Discussion of Results

Groundwater analytical results at the Site in exceedance of AWQS were identified for VOCs, SVOCs, and metals. Elevated VOC concentrations are likely the result of both on-site and off-site manufacturing processes. Elevated SVOCs and metals (except for iron, magnesium, manganese and sodium) are likely the result of on-site manufacturing processes and the presence of historical fill material. Iron, magnesium, manganese, and sodium are naturally-occurring metals that are commonly found in groundwater in the region of the Site. The presence of these metals on-site is unlikely to be the result of industrial use.

The detection of VOCs in deep groundwater samples from the northern portion of the Site is likely the result of migration from an off-site source. No light non-aqueous phase liquid (LNAPL) was observed during these sampling events in any of the monitoring wells. The detected compounds match with those of the off-site source to the north, and not with the on-site sources. This finding is further supported by the lack of VOC impact at intermediate depths

4.7 Vapor Intrusion Evaluation

To evaluate potential soil vapor impact beneath the Site, nine temporary soil vapor sampling points were installed between January 8, 2019, and July 2, 2019, through the slab of the warehouse building and at locations in the parking area to obtain representative soil vapor data. This included the collection of two sub-slab vapor samples through the floor of the warehouse building (SV003 and SV004). Sub-slab vapor points were installed no more than 2 inches below the bottom of the floor slab utilizing a hammer drill to create the opening in the slab. The seven exterior soil vapor points were installed utilizing a Geoprobe® drill rig to a depth of 2 feet below the pavement. Additionally, two indoor air samples (IA001 and IA002) and one outdoor air sample (OA001) were collected from the upwind side and concurrently with the sub-slab vapor samples. Indoor air sample IA001 was collected at the sub-slab vapor sample SV003 location and IA002 was

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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collected from the SV004 location. The results of these interior locations are used to evaluate the specific potential vapor intrusion conditions for the warehouse building.

A detailed walkthrough of the garage building for a chemical inventory was conducted prior to sampling on January 8, 2019. The building had been vacated and empty prior to the investigation and no stored chemicals were observed during the walkthrough.

4.7.1 Sampling Protocol

Soil vapor samples were collected approximately 24 hours after sampling points were installed. A tracer gas (helium) was utilized to test the seal around the soil vapor points. Once the integrity of the seal was confirmed at each location, three volumes of air were extracted from each point prior to sample collection with a flow rate of less than 0.2 liters/minute. Soil vapor samples were collected using batch certified 6-liter SUMMA vacuum canisters fitted with 8-hour flow control regulators with a flow rate of less than 0.2 liters/minute. Methodologies used for soil vapor assessment conform to the NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006.

4.7.2 Sample Analysis

Samples were submitted to Alpha Analytical of Mansfield, Massachusetts, a NYSDOH ELAP certified laboratory (ELAP ID: 11627). Each soil vapor sample was analyzed for VOCs by USEPA Method TO-15. The indoor air and outdoor air sample were analyzed for VOCs by USEPA Method TO-15-SIM.

4.7.3 Analytical Results

Soil vapor and air sample results are compared to the Sub Slab Vapor / Indoor Air Matrices and the Indoor Air Guideline Values specified in the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York. The Sub Slab Vapor / Indoor Air Matrices were derived by the NYSDOH in order to compare sub-slab vapor data with corresponding indoor air data to determine what actions, if any, are appropriate based on the potential for, and magnitude of, the intrusion of chlorinated VOCs into a structure.

Nine soil vapor samples were collected for VOC analysis. Analytical results are summarized in **Table 15** and **Figure 15**; laboratory reports are included as **Appendix C**.

4.7.4 Discussion of Results

Tetrachloroethene (PCE) was detected in indoor air samples IA001 and IA002 and sub-slab soil vapor sample SV004. When evaluating the sub-slab vapor results in comparison to associated indoor air concentrations using NYSDOH sub-slab vapor / indoor air matrices, the recommended

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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action for location SV003/IA001 is no further action. The recommended action for the SV004/IA002 location is mitigation.

Trichloroethene (TCE) was detected in indoor air samples IA001 and IA002 and sub-slab soil vapor sample SV004. When evaluating the sub-slab vapor results in comparison to associated indoor air concentrations using NYSDOH sub-slab vapor / indoor air matrices, the recommended action for locations SV003/IA001 is no further action. The recommended action for the SV004/IA002 location is mitigation.

Vinyl chloride was detected in indoor air samples IA001 and IA002 and sub-slab soil vapor sample SV004. When evaluating the sub-slab vapor results in comparison to associated indoor air concentrations using NYSDOH sub-slab vapor / indoor air matrices, the recommended action for locations SV003/IA001 is no further action. The recommended action for the SV004/IA002 location is mitigation.

Each of the other NYSDOH matrix compounds were not detected in soil vapor or indoor air. Chlorinated VOCs, including PCE, TCE, and vinyl chloride were detected in sub-slab vapor samples at the Site which warrant mitigation of the existing warehouse building. Mitigative measures may include sealing perforations in the slab floor, installation of a vapor barrier, and/or installation of a sub-slab depressurization system (SSDS). VOCs detected in the soil vapor samples collected from the exterior portions of the Site will likely also warrant mitigative measures for future buildings.

5.0 QUALITY ASSURANCE/QUALITY CONTROL

The overall quality assurance / quality control (QA/QC) objective for the field investigation was to develop and implement procedures that provide data of known and documented quality. QA/QC characteristics for data include precision, accuracy, representativeness, completeness, and comparability. The goals of the QA/QC activities developed for this Site were to verify the integrity of the work performed and ensure that data collected are of the appropriate type and quality for the intended use.

5.1 QA/QC Samples

To assess the adequacy of the sample collection and decontamination procedures performed in the field, QA/QC samples were collected and analyzed throughout the field sampling program. In general, QA/QC samples confirmed that the procedures performed in the field were consistent and acceptable. Reported detections in the trip and field blanks did not impact the interpretation of sample data. QA/QC samples included trip blanks, field blanks, blind duplicates, matrix spike

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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(MS), and matrix spike duplicates (MSD). Types and frequencies of field QA/QC samples are listed below.

Type	Frequency
Trip Blank	One per 20 samples per matrix
Field Blank	One per 20 samples per matrix
Equipment Blank	One per 20 samples per matrix
Blind Duplicate	One per 20 samples per matrix
Matrix Spike/Matrix Spike Duplicate	One per 20 samples per matrix

During the project, five trip blanks, five field blanks, and four equipment blanks were prepared and submitted for analysis in accordance with the project Quality Assurance Project Plan (QAPP). The total number of QA/QC samples includes those collected as part of the January 2019 Partial RI.

Targeted compounds/analytes were not detected above the laboratory MDL in field blank, equipment blank or trip blank samples submitted for analysis, except for low-level detections of several metals (J-qualified, estimated concentrations) in equipment blanks and field blanks. This indicates that sample collection procedures and/or ambient conditions are unlikely to have significantly impacted environmental samples collected from the Site during implementation of the RI.

5.2 Data Usability and Validation

In accordance with the approved RI Work Plan, independent third-party data validation was performed by Laboratory Data Consultants, Inc., of Carlsbad, California. Full data validation was performed on 5% of the data generated or one sample per Sample Delivery Group (SDG), whichever was greater. The remaining data received a summary validation as detailed in the Data Usability Summary Reports (DUSRs). A copy of the data validation is included as **Appendix F**.

All data were deemed acceptable by the data validator, with minor qualifications due to sample matrix or laboratory quality control outliers, with the following exceptions:

- The SVOC non-detect result for benzoic acid for samples VP004 (56-60), VP004 (46-50), VP004 (36-40), VP004 (26-30), and VP004 (16-20) was rejected due to low LCS/LCSD recoveries. The result is not usable for project objectives, which may have a major impact on the data usability.
- Sample SB007 (0-2) was re-analyzed for VOCs to confirm the original analysis. For all results in SB007 (0-2) the original results should be considered the most usable.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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- Sample SB011 (6-8) was re-analyzed for pesticides due to surrogate failing. For all results in SBO11 (6-8) the re-extracted results should be considered the most usable.
- Sample SB008 (0-2) was diluted for fluoranthene and pyrene in the SVOC analysis due to original analysis exceeding the calibration range. For fluoranthene and pyrene results in sample SB008 (0-2), the diluted results should be considered the most usable. The SB008 (0-2) results should not be considered usable for fluoranthene and pyrene.
- The SVOC non-detect results for 2,4-dinitrophenol and benzoic acid in sample SB007 (0-2) were rejected due to low MS/MSD recoveries. The results are not usable for project objectives, which may have a major impact on the data usability.
- Sample MW001 was re-analyzed for VOC due to results exceeding calibration range. For 2-butanone results in MW001, the re-extracted results should be considered the most usable.
- The SVOC non-detect results for 3,3'-dichlorobenzidine, 2,6-dinitrotoluene, 4-chloroaniline, 3-nitroaniline, 2-nitrophenol, and 2,4-dinitrophenol in sample MW002 were rejected due to low MS/MSD recoveries. The results are not usable for project objectives, which may have a major impact on the data usability.
- The SVOC non-detect result for benzoic acid in samples MW004, MW001, MW002, MW006, DUPE003, MW007, MW008, MW010, MW011, and MW009 was rejected due to low LCS/LCSD recoveries. The result is not usable for project objectives, which may have a major impact on data usability.
- Samples MW004, MW001, MW002, MW006, DUPE003, MW007, MW008, MW010, MW011, and MW009 were re-analyzed for pesticides due to low LCS recovery. For all results in MW004, MW001, MW002, MW006, DUPE003, MW007, MW008, MW010, MW011, and MW009 the original results should be considered the most usable. Sample MW004 was re-analyzed for PCB due to low surrogate recovery. For all results in sample MW004, the re-extracted results should be considered the most usable.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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6.0 CONCEPTUAL TRANSPORT MODEL

Based upon the findings of this RI, a conceptual model detailing the transport of VOCs, SVOCs, and metals has been developed. Based on soil and groundwater impact identified at the Site, it appears that, during historical Site operations, soils at the Site were impacted with VOCs, SVOCs, and metals.

Following the completion of an IRM, the conceptual site model will be updated in a Construction Completion Report, if warranted by the findings. The IRM will further investigate/remediate potential USTs and drainage structures.

6.1 Soil

SVOC and metal impact is present in Site soils. In general, the highest metals concentrations were detected in near surface soils (between 0 to 2 feet below grade), whereas the highest SVOC concentrations were found in deeper soil samples (between 6 to 8 feet below grade). VOCs, including 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, naphthalene, and xylenes, were detected in SB013 (6-8) at concentrations exceeding RRSCOs. VOCs detected at other soil sampling locations were within RRSCOs.

6.2 Groundwater

Groundwater is impacted with VOCs and PAH SVOCs at concentrations above AWQS. The highest concentrations detected are in the area of the tar-like material in the northern paved area.

Except for iron, nickel, antimony, magnesium, manganese, sodium, metals were not detected in groundwater above AWQSs. Based on the nature and concentrations of the metals detected and lack of an identified on-site source area, it appears likely that their presence in groundwater is related to the chemical composition of the fill material at the Site in which the wells were installed rather than a release of these metals at the Site.

6.3 Surface Water

There is no surface water on-site. The nearest surface water body is the Buttermilk Channel located approximately 600 feet to the west of the Site. Based upon the distance to surface water, it is unlikely that contaminants from the subject Site have impacted surface water.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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7.0 QUALITATIVE HUMAN HEALTH EXPOSURE ASSESSMENT

The overall purpose of the Qualitative Human Health Exposure Assessment is to evaluate and document how people might be exposed to Site-related contaminants and to identify and characterize the potentially exposed population(s) now and under reasonably anticipated future use of the Site. To evaluate if an exposure pathway exists, the exposure assessment should assess the quality, representativeness, and adequacy of the available data. In addition, the qualitative exposure assessment should consider the nature of populations currently exposed or that have the potential to be exposed to Site-related contaminants both on-site and off-site and describe the reasonably anticipated future land use of the Site and affected off-site areas.

7.1 Contaminant Source

The subject Site is located at 145-65 Wolcott Street in Brooklyn, New York and is currently vacant. The main portion of the Site was most recently used for parking and maintenance of school buses (approx. 1996 to 2018); the Site was previously used for storage and manufacturing chemical products and oils (approx. 1800 to 1904), Automobile coating and crating (approx. 1950) and recycling (approx. 1993 to 1996).

Soil samples collected from the Site identified impact to soils throughout the property. Analytical data identified elevated concentrations of VOCs, SVOCs, and metals exceeding their respective NYSDEC RRUSCOs, CUSCOs and/or IUSCOs likely related to the historical usage of the Site and/or the presence of historical fill material.

Groundwater samples collected from the Site identified impact to groundwater beneath the property. Analytical data identified elevated concentrations of VOCs, SVOCs and metals exceeding their respective NYSDEC AWQSs. Identified groundwater impact appears likely to be related to the historical usage of the Site, presence of historical fill, and/or on-site migration from off-site sources.

Soil vapor samples collected from the Site identified impact to soil vapor beneath the property. Analytical data identified elevated concentrations of VOCs. VOC impact to soil vapor beneath the subject property may be related to both on-site and off-site sources.

7.2 Onsite Human Health Exposure Assessment

The soil at the subject property is impacted with VOCs, SVOCs, and metals. Possible exposure pathways are by ingestion of impacted soil, inhalation of dust or vapors from impacted soils, or dermal exposure to impacted soil by a person on the subject property. Currently, exposures are mitigated by a composite cover system consisting of either asphalt or concrete and a locked perimeter fence surrounding the subject property which limits access to the subject property only

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
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to authorized personnel. During remediation, potential exposures would be limited to periods when ground intrusive work is being performed. Exposures to impacted soils will be mitigated during remediation through the presence of the locked perimeter fence and the use of personal protective equipment (PPE) for onsite workers. MGP-related wastes (coal tar) and soils that were impacted by these wastes appear to be located only in the yard area around SB018. Exposures may occur if, during the intrusive activities, the composite cover is removed. The potential exposures would be mitigated using appropriate health and safety measures. Conditions will be reassessed following delineation efforts as part of the IRM.

Groundwater at the subject property is impacted with VOCs, SVOCs, and metals. The site is served by a public water supply that delivers the water onsite from a water source not affected by the contamination at the site. The possible exposure pathways (ingestion, inhalation, or dermal exposure) would be limited to periods when ground intrusive work is being performed during remediation. Identified groundwater impact appears likely to be related to a former release of grossly contaminated media and the chemical composition of the urban fill. Exposures to groundwater will be mitigated during remediation through the presence of the locked perimeter fence, use of PPE for workers, and implementation of a CAMP to protect the downwind community.

The soil vapor samples collected from the subject property identified elevated concentrations of VOCs. However, the current exposures are mitigated by a composite cover system consisting of concrete in the building area and by asphalt in the remaining area of the subject property. The possible exposure pathways (inhalation) would be limited to periods when ground intrusive work is being performed during remediation. Exposures to impacted soil vapors will be mitigated during remediation through the presence of the use of PPE for workers, implementation of a CAMP to protect the downwind community and contingency measures, as warranted .

7.3 Offsite Human Health Exposure Assessment

The soil at the subject property consisted primarily of silty sands, the transport rate of the contamination found at the subject site through silty sands is very low. The impacts on the soils at the subject site is related to the historical usage of the Site and/or the presence of historical fill material. It is unlikely that the impacted soil onsite will cause any exposure offsite. If any, the offsite exposures from the soils at the subject property will be mitigated during remediation through the presence of the locked perimeter fence, use of PPE for workers, and implementation of a CAMP to protect the downwind community.

Based on groundwater elevations recorded during this RI, the site-specific groundwater flow direction appears to be toward the southwest. Groundwater in the vicinity of the subject property

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is not used as a potable water source; as such, possible exposure pathways (ingestion, inhalation, or dermal exposure) would be limited. The offsite exposure may occur if the sites adjacent to the subject property are excavated to a depth of groundwater below grade or during groundwater investigations.

The soil vapor beneath the subject property may be related to both on-site and off-site sources. The possible offsite impacts of soil vapor from the subject property are very low because of the presence of a composite cover systems at nearby sites consisting of either asphalt or concrete. The properties adjacent to the subject property are also capped either by asphalt or concrete. The offsite exposure may occur if the sites adjacent to the subject property are excavated or the composite cover system is removed. If any, the offsite exposures from the soil vapor at the subject property will be mitigated during remediation through the implementation of a CAMP to protect the downwind community.

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7.4 Contaminant Release and Transport

COCs at the Site include VOCs, SVOCs, and metals present in subsurface soils and groundwater, as well as VOCs present in soil vapor.

Transport mechanisms include migration of COCs from soil to groundwater, groundwater flow downgradient (southwest) towards Buttermilk Channel, and VOC migration from soil vapor into buildings.

7.5 Points and Routes of Exposure

The soil at the Site is impacted with VOCs, SVOCs, and metals. Possible exposure pathways are by ingestion, inhalation, or dermal exposure by a person on the Site. The Site is surrounded by a locked perimeter fence which limits access to the Site to authorized personnel. Soil at the Site is covered with asphalt paving or buildings. As such, potential exposures would be limited to periods when ground intrusive work is being performed.

Groundwater at the Site is impacted with VOCs, SVOCs, and metals. Based on groundwater elevations recorded during this RI, the Site-specific groundwater flow direction appears to be toward the southwest. Groundwater in the vicinity of the Site is not used as a potable water source, therefore, possible exposure pathways (ingestion, inhalation, or dermal exposure) would be limited to periods when ground intrusive work is being performed.

Soil vapor at the Site is impacted with VOCs. Possible exposure pathways are by inhalation of soil vapors that have migrated into indoor spaces. Currently, the Site is not occupied. However, this exposure pathway will need to be evaluated for future Site occupants. Potential inhalation by Site workers on exterior portions of the Site would be limited to periods when ground intrusive work is being performed.

7.6 Characterization of Potential Receptor Populations

The Site is currently surrounded by a locked perimeter fence and is currently capped with pavement and structures. As such, the potential exposure to off-site receptors is unlikely. During ground-intrusive activities (remediation and Site redevelopment), the potential for exposure to soil, groundwater, and soil vapor is possible. Potential receptors would include workers and residents in surrounding commercial and residential properties and future Site occupants.

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7.7 Qualitative Human Health Exposure Assessment Summary Table

The following table provides a summary of the routes of exposure.

Environmental Media & Exposure Route	Human Assessment
Direct contact with surface soils	• The Site is currently paved and access to the Site is restricted by fencing.
Direct contact with subsurface soils	• Direct contact to subsurface soils may occur during ground intrusive work at the Site. Such contact will be managed during remediation by implementing a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP).
Direct contact with groundwater	• Direct contact with groundwater may occur during ground intrusive work at the Site. Such contact will be managed during remediation by implementing a HASP and CAMP.
Ingestion of groundwater	• Groundwater is not utilized for drinking water. Drinking water is supplied by the municipal water supply. • There are no known domestic water supply wells in the area.
Inhalation of air	Mitigative measures such as a vapor barrier and SSDS may be installed in existing and future buildings. Air monitoring will be performed during ground-intrusive activities.

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8.0 CONCLUSIONS AND RECOMMENDATIONS

The following sections discuss the conclusions and recommendations based upon the results obtained during the Remedial Investigation.

8.1 Conclusions

PWGC performed a remedial investigation at the Site located at 145-65 Wolcott Street, Brooklyn, New York. The investigation consisted of a geophysical survey, as well as, soil, groundwater, soil vapor, and indoor air sampling. Based upon the previous investigation, the identified COCs were VOCs, SVOCs, and metals.

The geophysical survey identified seven EM anomalies at the Site, one of which identified in the northwestern portion of the property, is consistent with buried reinforced concrete and has dimensions that could be representative of a 6,000-gallon tank. A second anomaly in the northwestern portion of the property represented a trench-like variation in soil density adjacent to the tar area in the western paved area. The GPR did not identify anomalies associated with the USTs in the former UST area.

The floor drains inside of the building and the culvert along the southern wall were not fully investigated under the RI.

To characterize subsurface soil conditions, 18 soil borings were installed from grade into the water table, throughout the Site focused near areas in which elevated VOCs, SVOCs, and metals were detected during previous investigations, in the area of the tar-like substance, in current, former, and potential tank areas, and where samples were not previously collected. The soil borings indicate the presence of fill material (brick, concrete and asphalt) throughout the site, averaging to a depth of 10 ft bgs. An acidic odor is observed in the soil borings (SB012, SB013) in the eastern section of the warehouse building and a petroleum odor was observed in soil borings (SB006 and SB003) in the vicinity of the former UST area. A tar-like material with a PID response of 1500 ppm was observed in SB018 starting at the depth of 0.5 ft below grade to a depth of 8 ft below grade. No tar, resins, and oils, significant staining or odors or elevated PID responses were observed in the other 13 soil borings installed.

At each boring location, a shallow and a deep sample were submitted for analysis. Shallow interval samples were selected to be representative of historical fill material at the Site. The 6- to 8-foot interval was selected to be representative of the Upper Glacial deposits above the saturated zone.

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Soil samples collected from the Site identified impact to soils throughout the property. Analytical data identified elevated concentrations of VOCs, SVOCs, and metals exceeding their respective NYSDEC RRUSCOs, CUSCOs and/or IUSCOs likely related to the historical usage of the Site and/or the presence of historical fill material.

Eleven permanent water table interface monitoring wells were installed at the Site between June 20, 2019, and June 25, 2019. Wells were capped with flush mount covers, developed and surveyed. Groundwater is approximately 9 feet below grade at the Site. The groundwater flow direction at the Site is primarily toward the southwest. A tidal influence was measured in several of the Site's monitoring wells.

Groundwater samples were collected from each monitoring well at the Site between July 2, 2019, and August 3, 2019. No LNAPL was observed during these sampling events in any of the monitoring wells. In addition, four temporary vertical profile wells were installed, and groundwater samples were collected at 10-foot intervals beginning at the water-table interface and extending to a depth of 80 feet. eight samples were collected from each vertical profile well. Groundwater samples collected from the Site identified impact to groundwater beneath the property. Analytical data identified elevated concentrations of VOCs, SVOCs, metals, PCBs exceeding their respective NYSDEC AWQSs. Identified groundwater impact appears likely to be related to the historical usage of the Site, presence of historical fill, and/or on-site migration from off-site sources.

To evaluate potential soil vapor impact beneath the Site, nine temporary soil vapor sampling points were installed and sampled through the slab of the warehouse building and at locations in the parking area to obtain representative soil vapor data. Analytical data identified elevated concentrations of VOCs. VOC impact to soil vapor beneath the subject property may be related to both on-site and off-site sources.

The most elevated concentrations of VOCs and SVOCs were detected in the area of the tar-like material in the northwest area of the Site.

A 4,000-gallon diesel AST located in the northern area of the Site is no longer in use. The AST is enclosed in a concrete vault.

8.2 Recommendations

Based upon the observations and data generated during the RI, PWGC recommends conducting an IRM address identified impacts at the Site followed by a RAWP to address remaining impacts not address by the IRM. The IRM may focus on further investigation and remediation of:

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- The existence and condition of the potential 6,000-gallon UST, tentatively identified by the GPR survey, and surroundings soils and groundwater,
- The existence and condition of the potential 275-gallon UST under the body shop, tentatively identified by the GPR survey, and surroundings soils and groundwater,
- The potential discharge location and impact from the interior floor drains and the exterior culvert, and
- The tar-like material encountered in the western parking lot area.

Following completion of the IRM, a Construction Completion Report should be prepared to document the remedial activities conducted, additional data collected and updates to the site conceptual model and qualitative human exposure assessment. Following completion of the Construction Completion Report, a RAWP should be prepared to address the following Remedial Action Objectives (RAOs):

Remedial Action Objectives		
Matrix	Public Health Protection	Environmental Protection
Soil	Prevent ingestion/direct contact with contaminated soil. Prevent inhalation of or exposure to contaminants volatilizing from soil.	Prevent migration of contaminants that would result in groundwater or surface-water contamination.
Groundwater	Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.	Prevent the discharge of contaminants to surface water.
Soil Vapor	Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.	

The Site is currently vacant; future usage of the Site will potentially include mixed-use redevelopment (commercial and residential) dependent on the re-zoning process currently underway. The mixed usage may include multiple buildings of varying heights with no basements and whose first floors would likely be raised for flood mitigation. Residential homes are located adjacent to the north, south and east property boundaries.

To meet the objectives detailed above, the RAWP should establish a plan for implementing the following:

- Potential removal, remediation, and/or mitigation of exposure related to impacted on-site soils not addressed under the IRM,

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- Potential mitigation of exposure to impacted groundwater, the well network should be re-evaluated and re-sampled, as warranted, as part of IRMWP/IRM;
- Potential mitigation of exposure to impacted soil vapor.

The current owner may utilize the Site while re-zoning of the Site proceeds, which is anticipated to take between two to three years. These interim uses may include, but not be limited to the following:

- Auto-related storage and repair
- Materials storage
- Film and television production
- Restaurants and amusements

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9.0 REFERENCES

- NYSDEC Brownfield Cleanup Agreement, Williamsbridge Gardens (C203113)
- NYSDEC, Division of Environmental Remediation, DER-10, Technical Guidance for Site Investigation and Remediation, May 3, 2010.
- NYSDEC, Division of Environmental Remediation, 6 NYCRR Part 375 Subpart 6, Remedial Program Soil Cleanup Objectives, December 14, 2006.
- NYSDEC, Division of Water, June 1998, Addendum April 2000, Technical and Operational Guidance Series 1.1.1, Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998.
- NYSDEC, Remedial Investigation Approval Letter, Williamsbridge Gardens (C203113) April 11, 2019
- NYSDOH, Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006.
- PWGC, Brownfield Cleanup Program Application, Williamsbridge Gardens (C203113), April 2018
- PWGC, Remedial Investigation Work Plan, Williamsbridge Gardens (C203113), June 25, 2018
- USEPA, Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, September 2017.
- USEPA, Standard Operating Procedure SOP 2042, Soil Gas Sampling.
- Volumetric Techniques, Ltd., Certified Environmental Site Assessment, February 9, 2015

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Appendix III:

Phase II Environmental Site Assessment

PHASE II REMEDIAL INVESTIGATION REPORT

for

145-165 WOLCOTT STREET
Brooklyn, New York
Block 574, Lots 1, 23, and 24
NYSDEC BCP Site No. C224256

Prepared For:

Red Hook JV LLC
1805 Seventh Street, N.W., Suite 800
Washington, D.C. 20001

Prepared By:

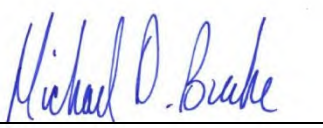
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
21 Penn Plaza
360 West 31st Street, 8th Floor
New York, New York 10001

October 2022
Langan Project No. 170562201

LANGAN

CERTIFICATION

I, Michael Burke, certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Phase II Remedial Investigation Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10).



Michael Burke, PG, CHMM
Principal/Vice President

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1.0 INTRODUCTION

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C (Langan) prepared this Phase II Remedial Investigation Report (RIR) on behalf of Red Hook JV LLC (the "Volunteer") for 145-165 Wolcott Street in the Red Hook neighborhood of Brooklyn, New York (the "site"). The site is identified on the Brooklyn Borough tax map as Block 574, Lots 1, 23, and 24. A Site Location Map is included as Figure 1.

145-65 Wolcott St. Realty Corp., the previous owner of the site, was accepted into the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) as a volunteer, as set forth in a Brownfield Cleanup Agreement (BCA), dated February 21, 2018 (Site No. C224256). Red Hook JV acquired the site in August 2019, and a BCA amendment adding Red Hook JV as a Volunteer was executed on December 31, 2019.

A Phase I RIR[1] was prepared by P.W. Grosser Consulting, Inc. (PWGC) and submitted to NYSDEC on behalf of the Volunteer in November 2019. PWGC submitted a revised Phase I RIR to NYSDEC in November 2020 in response to an April 2020 NYSDEC comment letter. NYSDEC conditionally approved the Phase I RIR in a letter dated April 13, 2021, and a Final Phase I RIR was issued in April 2021.

Langan conducted the Phase II Remedial Investigation (RI) described in this Phase II RIR in accordance with the NYSDEC-approved Phase II RI and Interim Remedial Measures (IRM) Work Plan, dated April 30, 2021, to further evaluate the potential areas of concern identified in the Phase I RIR and referenced in the PWGC RIR Comment Response letter, dated November 11, 2020. NYSDEC cited potential underground storage tanks (UST), an interior storm drain, an exterior culvert, and potential impacts to groundwater from a free-phase tar-related substance on the northwestern portion of the site as areas of concern warranting additional evaluation beyond that conducted during the Phase I RI.

[1] In a letter dated April 13, 2021, NYSDEC conditionally approved PWGC's RIR and requested the name be amended to "Phase I RIR". In the same letter, the NYSDEC requested the title of Langan's January 2021 Interim Remedial Measures Work Plan (IRMWP) be amended to "Phase II RIR and IRMWP".

2.0 SITE BACKGROUND

2.1 Site Description

The approximately 80,000-square-foot site is improved by asphalt-paved parking lots on Lots 1 and 24, a one-story light industrial building on Lot 1, and a trailer formerly used as office space on Lot 23. Lot 1 occupies the majority of the site (67,500 square feet), and Lot 23 (2,000 square feet) and Lot 24 (10,500 square feet) occupy the southeastern corner of the site. The one-story building and surrounding parking lot on Lot 1 were used for school bus parking and maintenance through 2016; the parking lot is currently used by Tesla, Inc. for the storage of new passenger cars, and the building is vacant. Lots 23 and 24 are currently vacant, with the exception of an office trailer on Lot 23 and moving van storage on Lot 24. Access is restricted to the exterior portions of the site by chain-link fencing with locked gates, which surrounds the site perimeter.

The site is bound by Ferris Street and a commercial development site to the northwest; Wolcott Street, warehouse, and bus parking facilities to the northeast; and Conover Street, South Brooklyn Community High School, and residential buildings to the southeast. Several properties, including residential buildings and a commercial storage building, directly adjoin the site to the southwest along Conover and Dikeman Streets. Other properties southwest of the site across Dikeman Street include multi-family residential buildings and commercial storage, warehouse, and light manufacturing buildings.

Grades within the site generally vary from about elevation (el) 9.7 feet (ft) North American Vertical Datum of 1988 (NAVD88) in the northeast to el 13.7 ft NAVD in the south-central part of the site. Grades generally slope down to the north. Grades along Wolcott Street and Dikeman Street generally slope down to the east and west, respectively, from a crown that occurs roughly mid-block.

A site location map is included as Figure 1, and a site plan is included as Figure 2. A site survey is provided in Appendix A.

2.2 Site History

The site has a protracted history of industrial and commercial usage, including oil resin manufacturing (1886), engine manufacturing and boiler repair (1904), transformer use (1915), commercial vehicle repair and petroleum bulk storage (1938-2016), lumber storage (1950-1992), and commercial waste recycling (1993-2012). Historical records indicate that the site contained 14 historical petroleum aboveground storage tanks (AST) and USTs. The site was also used as a vehicle disassembly facility in the early 1940s, during which military vehicles were coated with the petroleum-based wax sealant cosmoline prior to overseas shipment. Residences were located on Lots 23 and 24 between 1886 and 1969. The site was most recently used for school bus parking and maintenance, which occurred between 2002 and 2016, and is currently used by Tesla

for new passenger vehicle storage and by a moving company for licensed short-term storage use. The site building is currently vacant.

2.3 Proposed Redevelopment Plans

The proposed redevelopment is in the conceptual design phase, and will be described in the forthcoming Remedial Action Work Plan (RAWP).

2.4 Previous Environmental Reports and Regulatory Correspondence

Previous environmental documents and regulatory correspondence applicable to the scope of the Phase II RI are summarized in chronological order below. These reports are provided in Appendix B.

- ASTM Certified Environmental Site Assessment: 145-165 Wolcott Street, prepared by Volumetric Techniques, Ltd. (VT), dated February 9, 2015
- Letter: Re: Limited Subsurface Investigation, prepared by John Eichler of PWGC, sent to Gregory Iovine of 145-65 Wolcott St. Realty Corp. on August 22, 2018
- Letter: Re: Remedial Investigation, prepared by Kris Almskog of PWGC, sent to Steven Scharf of NYSDEC on November 11, 2020
- Phase I Remedial Investigation Report, prepared by PWGC on behalf of Red Hook JV LLC, dated April 19, 2021
- Pre-Demolition Hazardous Materials Survey Report, prepared by Partner Assessment Corporation (Partner) on behalf of Four Points LLC, dated January 11, 2021

ASTM Certified Environmental Site Assessment: 145-165 Wolcott Street, prepared by VT, dated February 9, 2015

The Phase I Environmental Site Assessment (ESA) identified the following recognized environmental conditions (REC):

- Historical use of the site that included an oil and tar manufacturer, chemical manufacturer, boiler manufacturer, army vehicle disassembly facility, and transportation depot (including storage and repair of school buses).
- Documented contamination, including polycyclic aromatic hydrocarbons (PAH), volatile organic compounds (VOC), and lead in soil and groundwater samples.
- Documented off-site petroleum spills associated with a boring located at the intersection of Ferris Street and Sullivan Street and PAH-impacted soil at 44 Ferris Street.

- Several historical and in-service tanks, including those listed below:

Type	Contents	Capacity (gallons)	Status	Location
UST	Diesel/ heating oil	6,000	Closed-In-Place	Northern portion of site
5 USTs*	Gasoline	550	Closed/ Removed	Unknown
UST**	Cosmoline/ Waste Oil†	Not Specified	Closed/ Removed	Southwestern portion of site
UST**	Heating oil	275	Unknown	Underneath former body shop floor
Unknown number of ASTs**	Waste oil	275	In-Service	Adjacent to western side of building
AST**	Not Specified	Not Specified	In-Service	Replaced 6,000-gallon UST
AST**	Not Specified	Not Specified	Removed	Former body shop
AST	Kerosene	275	In-Service	Not specified

*Only 4 of 5 tanks were included in the NYSDEC Petroleum Bulk Storage (PBS) database listing for the site

**Tank not listed in PBS database listing

†Cosmoline is a petroleum-based wax sealant that was used to coat vehicles to prevent rust and corrosion during transport.

VT conducted a subsurface investigation that included the collection of soil and groundwater samples. The investigation findings are summarized below:

- The subsurface generally consists of historic fill material extending to depths between about 3 feet and 7 feet below ground surface (bgs). The fill layer generally consists of brown sand with varying amounts of concrete, brick, bituminous ash, wood, tar, and resin.
- 33 soil borings exhibited photoionization detector (PID) readings above background at concentrations between 99 and 2,340 parts per million (ppm).
- Groundwater was observed between 11.5 and 16 feet bgs.
- Soil sample analytical results indicated concentrations of several petroleum-related VOCs above the Title 6 of the New York Codes, Rules and Regulations (NYCRR) Part 375 Unrestricted Use (UU) Soil Cleanup Objectives (SCO) at locations in the southeastern portion of the site and near the former 6,000-gallon UST on the northern portion of the site. PAHs were detected above UU SCOs in a culvert near the northwestern corner of the building on Lot 1, and several metals were detected above the UU SCOs in samples collected throughout the site.
- Concentrations of petroleum-related VOCs (1,2,4-trimethylbenzene, 1,2,4-trimethylbenzene, and/or 1,3,5-trimethylbenzene), PAHs, and metals (lead and cadmium) exceeded the NYSDEC Division of Water Technical and Operational Guidance

Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values (SGVs) for Class GA water in one or more groundwater samples. Petroleum-related VOCs were identified above the SGVs in groundwater near a former 6,000-gallon diesel UST in the northern portion of the site.

VT identified the following areas of concern, based on historical site use, detections of PAHs and VOCs in soil and/or groundwater, and observations of staining:

PAH and VOC Detections

- Tar material on the northwestern portion of the site.
- Culvert near the northwestern corner of the building. The origin and discharge point of the culvert is unknown.
- Former vehicle body shop in the southern portion of the building.
- Interior floor drain in the central portion of the building.
- Historical cosmoline/waste oil UST on the southwestern portion of the site.
- VOCs in groundwater attributable to "background conditions" in Red Hook.

Site Use and Field Observations

- Historical and existing USTs and ASTs (summarized above).
- Soil staining near a waste storage and bermed containment area on the northern portion of the site.
- PID readings indicative of a potential vapor intrusion concern.

Letter: Re: Limited Subsurface Investigation, prepared by PWGC, dated August 22, 2018

PWGC advanced three soil borings and one groundwater monitoring well (SB002, SB018, and SB003/MW-003) in July and August 2018 to investigate the apparent tar material on the northwestern portion of the site, as proposed in an NYSDEC-approved June 2018 Remedial Investigation Work Plan (RIWP). SB018 was completed in the area where a tar-like substance was observed seeping through the asphalt pavement in the parking lot. SB002 was located northwest of SB018 and MW-003 was located northeast of SB018. The borings were completed to depths between 62 and 72 feet bgs.

Tar-like material, which was described as black, shiny, clay-like material mixed with black sand with PID readings up to 1,500 ppm, was observed in boring SB018 from the surface to 8 feet bgs. Boring SB018 also exhibited stained soil and odors between 8 and 16 feet bgs. Boring SB002 exhibited stained soil and PID readings up to 295 ppm between 9 and 11 feet bgs and odors between 9 and 39 feet bgs. Boring/well MW-003 did not exhibit staining or odors. Groundwater was encountered between 13 and 15 feet bgs.

Samples of the tar-like material were collected from the 0- to 2-foot and 4- to 6-foot depth intervals and submitted for laboratory analysis of VOCs, semivolatile organic compounds (SVOC), metals, polychlorinated biphenyls (PCB), and pesticides. Analytical results indicated that concentrations of VOCs and/or SVOCs were above the UU SCOs. The analytical results were not discussed in detail in the letter.

Letter: Re: Remedial Investigation, prepared by PWGC for NYSDEC, dated November 11, 2020

Following PWGC submission of a draft RIR, NYSDEC issued comments to the draft RIR in a letter dated April 28, 2020. PWGC prepared a response letter committing to addressing items omitted in the initial draft RIR. The letter also noted that the following items would be addressed during a subsequent IRM or implementation of a forthcoming RAWP:

- Evaluation of the well network near the tar-impacted area on the western and northwestern portions of the site for non-aqueous phase liquid (NAPL).
- Evaluation of the interior floor drains and culvert along the outside of the building.
- Exploratory excavation and evaluation of the potential abandoned-in-place 6,000-gallon UST.
- Post-demolition evaluation of a potential 275-gallon UST in the former body shop.
- Remediation of VOC, SVOC, and metals-contaminated soil in the tar-impacted area on the western and northwestern portions of the site.
- Exploratory excavation of geophysical anomalies identified during the RIR (discussed below).
- Excavation and removal of tar-like material on the northwestern portion of the site.

Phase I Remedial Investigation Report, prepared by PWGC, dated April 19, 2021

PWGC conducted the Phase I RI in January 2019 to delineate impacted areas of concern at the site. The investigation was conducted in accordance with the NYSDEC-approved June 2018 RIWP. The Phase I RI included a geophysical survey and soil, groundwater, and soil vapor sampling.

- A 4,000-gallon diesel AST was observed in the northern portion of the site. Although not discussed in the RIR, Langan also observed five 275-gallon ASTs containing motor oil and other unidentified contents.
- The geophysical survey identified seven electromagnetic anomalies, including one in the northwestern and six in the southeastern portions of the site.
- Eighteen soil borings were advanced to investigate areas documented during previous investigations to contain VOCs, SVOCs, and metals above the Part 375 SCOs. PWGC observed a layer of historic fill material extending from the ground surface to about 10 feet

bgs. Historic fill consisted of dark brown to black fine-to-medium sand with varying amounts of gravel, asphalt, brick, coal/bituminous ash, concrete, tar, resin, and wood. Native soil underlying the historic fill was generally brown, gray, and black fine-to-medium sand with varying amounts of clay, gravel, organics, and silt. Petroleum odors and PID readings between 0 and 1,500 ppm were observed in various borings throughout the asphalt-paved parking lot and in the building at depths between ground surface and 39 feet bgs. Tar-like material was observed in one boring (SB018) on the northwestern portion of the site between ground surface and 8 feet bgs.

- Petroleum-related VOCs exceeded the Part 375 Restricted Use Restricted-Residential (RURR) SCOs in the southeastern portion of the building (SB013) at 6 to 8 feet bgs. SVOCs and/or metals were detected above the RURR SCOs, Part 375 Restricted Use - Commercial (RUC) SCOs and/or Part 375 Restricted Use - Industrial (RUI) SCOs in the 0- to 2-foot and 6- to 8-foot sampling intervals. PAHs exceeded the RUI SCOs between 12 and 16 feet bgs below the tar-like material in SB018.
- Eleven monitoring wells were installed and sampled. Groundwater was encountered between 8 and 10 feet bgs. Several petroleum-related VOCs and one chlorinated VOC (1,2-dichloroethane [DCA]) exceeded the SGVs in 6 of 11 monitoring wells. Petroleum-related VOCs also exceeded the SGVs in the area near a former 6,000-gallon diesel UST in the northern portion of the site. SVOCs exceeded the SGVs in 10 of 11 wells. Dissolved metals exceeded the SGVs in all wells; however, most regulatory exceedances were attributable to iron, manganese, and sodium, which likely reflect regional groundwater quality. Dissolved metals exceedances of antimony and nickel were noted in one well and were attributed to historic fill and/or impacts from historical site use. PAH detections were attributed to the presence of subsurface tar in the northwestern portion of Lot 1. Polyfluorinated Alkyl Substances (PFAS) were detected above the United States Environmental Protection Agency (USEPA) lifetime Health Advisory Level (HAL, 70 parts per trillion) in four of 11 wells. All concentrations of PFOA and PFOS were also above the June 2021 NYSDEC Guidance Value of 10 ppt. 1,4-dioxane was not detected above the reporting limit in any of the groundwater samples
- Three temporary vertical profile wells were installed near the northern (VP-002) and western (VP-001) corners and in the central portion of Lot 1 (VP-003). The wells were advanced to 80 feet bgs and groundwater samples were collected at discrete, 4-foot intervals every 10 vertical feet for a total of 8 samples per well. Each sample was analyzed for VOCs, SVOCs, pesticides, PCBs, metals (total and dissolved), and PFAS. Several petroleum-related VOCs and SVOCs exceeded the SGVs at each sampling interval in each well through 80 feet bgs. Concentrations of petroleum-related VOCs and naphthalene were found to be higher in shallow samples, with concentrations decreasing with increased depth to around 40 feet bgs, and then increasing again with maximum concentrations at 76 to 80 feet bgs, indicating that petroleum impacts below 40 feet bgs likely originate from an off-site source.

- To evaluate soil vapor impacts, nine interior sub-slab vapor samples, seven exterior soil vapor samples, two indoor air samples, and one ambient air sample were collected. Two chlorinated solvents were detected in sub-slab soil vapor and indoor air samples at concentrations exceeding the New York State Department of Health (NYSDOH) Decision Matrices minimum concentrations at which mitigation is recommended. Trichloroethene (TCE) and vinyl chloride were detected at concentrations of 1,260 and 767 micrograms per cubic meter (µg/m^3), respectively, in a sub-slab vapor sample (SV004) collected inside the warehouse building. TCE was also detected at a concentration of 0.413 µg/m^3 in an indoor air sample (IA002) collected inside the warehouse building.

Pre-Demolition Hazardous Materials Survey Report, prepared by Partner, dated January 11, 2021

Partner conducted a hazardous materials survey in December 2020 to evaluate asbestos-containing material (ACM), PCB-containing material, lead, and universal waste materials within the former repair garage building.

- ACM were confirmed in the following locations:
    a. Approximately 300 square feet of 9-inch maroon floor tile in the locker room in the western portion of the ground floor
    b. Approximately 350 square feet of roof penetration mastic in various locations on the roof
    c. Approximately 75 square feet of roof skylight tar at each skylight across the roof
- One PCB sample collected from grey paint on a vertical support column on the ground floor of the building was found to have a total PCB concentration (1.1 milligrams per kilogram [mg/kg]) below the Toxic Substances Control Act (TSCA) regulatory limit (50 mg/kg).
- One toxicity characteristic leaching procedure (TCLP) lead sample was collected from composite building materials from throughout the building. The TCLP lead concentration (<0.40 milligrams per liter [mg/l]) was less than the Resource Conservation and Recovery Act (RCRA) hazardous waste regulatory limit (5 mg/L).
- Universal waste, including fire extinguishers, fluorescent bulbs, thermostats, and metal halide or high-pressure sodium ballasts, were identified throughout the building.

2.5 Site Geology and Hydrogeology

Langan performed a preliminary geotechnical engineering study in August 2020 to evaluate the subsurface soil and groundwater conditions at the site, and PWGC conducted the Phase I RI in 2018 and 2019. Based on observations during these investigations, the general stratigraphy at the site consists of historic fill material, typically underlain by a layer of silty sand with varying amounts of silt, clay, and fine gravel. Historic fill generally consisting of brown to black sand with

varying amounts of silt, concrete, brick, bituminous ash, wood, tar, and resin extends to depths between about 6 and 15 feet bgs. During the Phase II RI, groundwater was observed at depths between about 8 and 13 feet bgs. During the Phase I RI, groundwater was inferred to generally flow toward the southwest; however, groundwater flow direction and gradient may be influenced by tidal fluctuations and may therefore vary.

Historical mapping (i.e., Atlas of the Borough of Brooklyn, Belcher Hyde, 1857) indicates that the eastern portion of Lot 1 and entirety of Lots 23 and 24 were outboard of the former East River shoreline, prior to backfilling and land reclamation in the middle to late 1800s. Stratigraphy outboard of the original high water line is generally different from that in historically upland areas, based on the following characteristics: 1) increased thickness of historic fill material; 2) historic fill material that is characteristically less dense; and 3) the presence of a layer of silt and clay immediately below the fill layer.

Soil boring logs, a groundwater contour map, and groundwater monitoring well construction logs are appended to the Phase I RIR prepared by PWGC, which is included in Appendix B.

3.0 PHASE II REMEDIAL INVESTIGATION

NYSDEC cited potential USTs, an interior storm drain, an exterior culvert, and potential impacts to groundwater from a free-phase tar-related substance on the northwestern portion of the site as areas of concern warranting additional evaluation beyond the investigation completed during the Phase I RI.

The Phase II RI was implemented between May 24 and June 3, 2021, in accordance with the NYSDEC-approved Phase II RI and IRM Work Plan. The Phase II RI consisted of the following:

- A geophysical survey to confirm the location of anomalies identified in the Phase I RIR.
- Excavation of test pits to investigate anomalies identified during the geophysical survey and in the Phase I RIR.
- Evaluation of interior floor drains and investigation of an exterior drainage culvert along the northwestern perimeter of the building.
- Gauging of existing groundwater monitoring wells.
- Collection of two soil samples and two NAPL samples for laboratory analysis.
- Implementation of a Community Air Monitoring Plan (CAMP) during intrusive subsurface activities.

The CAMP monitoring data is provided in Appendix C. Daily field reports summarizing the completed work are provided in Appendix D, and a photographic log is provided in Appendix E. Figure 2 shows test pit and monitoring well locations.

3.1 Geophysical Survey

Prior to intrusive field activities, Hager-Richter Geosciences, Inc. (Hager-Richter) conducted a geophysical survey using ground penetrating radar (GPR), electromagnetic detection, and precision utility location equipment to document potential subsurface utilities, USTs, and subsurface anomalies at proposed investigation locations. The locations of seven subsurface anomalies identified in the Phase I RIR were screened to identify potential subsurface structures prior to test pit excavation activities. The survey also included screening of the area near the northwestern corner of the building to investigate potential drainage structures. The general depth of penetration for the survey was 1 to 1.5 feet bgs near the 7 formerly identified anomalies in Lot 24 and 3.5 to 4 feet bgs on Lot 1.

The geophysical survey confirmed the presence of subsurface anomalies in five of the eight surveyed locations; no obstructions were identified at the remaining three locations. The survey did not identify anomalies indicative of USTs. However, buried concrete and metal were identified in the central portion of Lot 1, and buried metal and a potential buried vault were identified on Lot 24. A potential buried utility was observed to extend 75 feet westward from the exterior culvert

and northwestern corner of the building and terminate in the central portion of Lot 1. The results of the geophysical survey are provided in Appendix F.

3.2 Exploratory Test Pits

Between June 1 and June 3, 2021, AARCO Environmental Services Corp. (AARCO) used a Bobcat E35 mini excavator to advance seven test pits at the location of subsurface anomalies identified in the Phase I RIR. The test pits varied in area between about 16 square feet and 64 square feet. A Langan field engineer documented the work and screened the excavation for indications of impacts with a PID. Findings are provided below:

Test Pit	Geophysical Survey Findings	Test Pit Depth (ft bgs)	Test Pit Observation
TP-01	Cleared – No obstructions	6.0	Dormant electrical lines within a brick-lined pit
TP-02	Metallic Anomaly	1.5 to 5.0	Metal plate above a vertical concrete and brick former foundation wall
TP-03	Cleared – No Obstructions	1.5	One metal plate and concrete foundation encountered at 1.5 feet bgs precluded deeper advancement. A nearby utility anomaly precluded expansion of test pit.
TP-04	Possible Concrete Structure	1.75	Multiple overlapping metal plates precluded deeper excavation
TP-05	Metallic Anomaly	3	Crushed 55-gallon drum – no odors, staining or PID readings above background
TP-06	Metallic and Concrete Anomalies	0.5 to 5.0	Metal plate above reinforced concrete at about 1 foot bgs – proximity to a concrete ramp and a utility anomaly limited depth of test pit
TP-07	Reinforced Concrete	5	One-foot-thick reinforced concrete at 1 ft bgs
Area near NW Corner of Building	Cleared – No Obstructions; buried utility extending 75 ft west towards TP-07	Not advanced	The open culvert referenced in the 2015 Phase I ESA prepared by VT was observed about 50 feet south of the geophysical investigation area.

No UST or odors, staining, or PID readings above background indicative of soil impacts were observed in the test pits. The test pits were backfilled with excavated soil and the surface was restored with cold patch asphalt. The crushed drum identified in TP-05 was removed from the excavation and wrapped in polyethylene sheeting for future disposal. Waste asphalt generated during test pit advancement was placed on polyethylene sheeting in the southern part of the site

for future disposal. Test pit locations are shown on Figure 2, and test pit logs are provided in Appendix G.

3.3 Floor Drain and Culvert Investigation

Removal of steel cover plates inside the building did not reveal floor drains or possible sources of contaminated liquid discharge to exterior areas. An inspection of the northwestern building façade identified the presence of an approximately 30-foot-long, 5-foot-wide, and 4-foot-deep open culvert parallel to the exterior wall of the building. The brick-lined, earthen bottom culvert contained an approximately 1-foot-thick layer of sediment. An approximately two-inch-diameter, poly vinyl chloride (PVC) pipe was observed extending from the western wall of the building and discharged into the culvert; the source of the outlet was not observed inside the building. A buried six-inch-diameter steel pipe connecting to the culvert from the west was observed. A steel grate covering a sub-grade stormwater cleanout is located about 30 feet west of the inlet. The cleanout contains an opening oriented towards the culvert and indicative of a potential connection with the aforementioned six-inch steel pipe and culvert. The approximate culvert and stormwater grate locations are shown on Figure 2.

3.3.1 Sediment Sampling and Analytical Results

Two sediment samples were collected from the culvert: one from immediately beneath the storm sewer pipe inlet (CS-01) and one from immediately beneath the aforementioned PVC pipe outlet extending to the culvert from the building (CS-02). Samples were collected into pre-cleaned, laboratory-supplied glassware and placed in a laboratory-supplied cooler packed with ice (to maintain a temperature of 4ºC). The coolers were collected by a laboratory courier and transported under standard chain-of-custody protocol to Alpha Analytical, Inc. (Alpha), an NYSDOH Environmental Laboratory Approval Program (ELAP)-certified laboratory in Westborough, Massachusetts.

Soil samples were analyzed for:

- Part 375 VOCs via SW-846 Method 8260C
- Part 375 SVOCs via SW-846 Method 8270D
- Part 375 PCBs via SW-846 Method 8082A
- Part 375/Target Analyte List (TAL) metals via SW-846 Methods 6010D/7471B

Soil sample results were compared to RURR and RUC SCOs. A sample collection summary is provided in Table 1 and laboratory sample analytical results are provided in Table 2. The laboratory analytical report is provided in Appendix H. VOCs and PCBs were not detected at concentrations exceeding RURR or RUC SCOs. SVOCs and metals detected at concentrations exceeding the RURR and RUC SCOs are listed below. RURR SCO exceedances are bolded and RUC SCO exceedances are shaded.

Analyte	SCOs (mg/kg)		Result (mg/kg)	
	RURR SCOs	RUC SCOs	CS01	CS02
SVOCs				
Benzo(a)anthracene	**1**	5.6	**13**	**9.4**
Benzo(a)pyrene	**1**	1	**10**	**9.3**
Benzo(b)fluoranthene	**1**	5.6	**13**	**12**
Benzo(k)fluoranthene	**3.9**		**14**	
Chrysene	**3.9**		**12**	**11**
Dibenz(a,h)anthracene	**0.33**	0.56	**1.7**	**2.3**
Indeno (1,2,3-cd)pyrene	**0.5**	5.6	**7.6**	**6.6**
Metals				
Cadmium	**4.3**	9.3	3.04	**13.2**
Copper	**270**	270	**945**	260
Lead	**400**	1000	**716**	**1,190**

3.4 Synoptic Well Gauging

Langan completed synoptic well gauging at wells MW-001 through MW-006 and MW-008 through MW-011 between June 1 and 3, 2021. MW-007 was inaccessible for groundwater measurements due to obstruction by site materials during the Phase II RI. Groundwater was observed between 8.17 and 11.99 feet bgs. Apparent petroleum light non-aqueous phase liquid (LNAPL) was observed with a thickness of 0.9 feet in MW-002 and 1.48 feet in MW-008. LNAPL was not observed in MW-002 or MW-008 during the Phase I RI. A summary of the groundwater gauging event is provided as Table 4.

3.4.1 Petroleum Product Sampling and Analytical Results

Samples of the LNAPL were collected from MW-002 and MW-008 in pre-cleaned, laboratory-supplied glassware and placed in a laboratory-supplied cooler packed with ice (to maintain a temperature of 4ºC). The coolers were collected by a laboratory courier and transported under standard chain-of-custody protocol to Alpha. Product samples were analyzed for petroleum hydrocarbon identification by gas chromatography with flame ionization detector (GC/FID) by SW-846 Method 8015D(M).

Total petroleum hydrocarbons (TPH) were 861,000 mg/kg in MW-002 and 906,000 mg/kg in MW-008. A qualitative review of gas chromatograph results compared to Alpha's library of reference standards was performed in accordance with EPA Method 8015M. The review indicated that the LNAPL from MW-002 exhibits an affinity with No. 2 fuel oil/diesel fuel, while the LNAPL from MW-008 resembles a mixture of gasoline and a motor oil type product. The LNAPL in each well therefore appears to originate from different sources.

The petroleum hydrocarbon identification results are summarized in Table 3. The laboratory analytical report is provided in Appendix H.

3.5 Community Air Monitoring Plan

Langan conducted continuous air monitoring at stationary upwind and downwind locations relative to the work areas during ground-intrusive activities in accordance with the NYSDEC-approved Phase II RI and IRM Work Plan. A Langan field engineer also monitored the work area for dust and organic vapors. Action levels for VOC and particulate matter less than 10 micrometers in size (PM-10) were not exceeded during the monitoring period. CAMP data are provided in Appendix C.

3.6 Data Validation

Category B laboratory analytical reports for the Phase II RI soil and petroleum product samples were provided by Alpha and were validated by Langan. The Data Usability Summary Report (DUSR) is provided in Appendix I. According to the validation results, the data were determined to be acceptable. Completeness, defined as the percentage of analytical results that are judged to be valid, is 100%. All data are considered useable as qualified.

4.0 FINDINGS AND CONCLUSIONS

The findings summarized herein are based on field observations, instrumental readings, and laboratory analytical results of soil and petroleum product samples collected during the Phase II RI. Findings and conclusions are as follows:

- A geophysical survey confirmed the presence of five of seven subsurface anomalies identified in the Phase I RIR. A possible vault structure was identified on the northern portion of Lot 24, and a potential buried utility was indicated to extend 75 feet westward from the northwestern corner of the building and terminate in the central portion of Lot 1. Excavation of seven test pits at the anomalies identified buried foundation structures, including metallic plates, reinforced brick retaining walls, reinforced concrete; one buried 55-gallon drum was observed on the central portion of Lot 24. No USTs or indications of impacted soil were identified. A metal plate precluded advancement in the area of the possible vault structure below 1.75 feet bgs.
- Interior floor drains or other possible sources of contaminated liquid discharge to exterior areas were not observed; however, an open culvert was observed along the western wall of the building. A PVC pipe extending from the western wall of the building appeared to discharge into the culvert, and a buried steel pipe was observed to intersect the culvert; the steel pipe is aligned with a storm sewer located about 30 feet west of the culvert.
- Two sediment samples collected from the culvert near the discharge pipe and the out-flowing buried pipe contained SVOCs and metals at concentrations above the RURR and/or RUC SCOs. The detections are of a similar order of magnitude as those in the Phase I RI historic fill samples. The Phase I RI boring nearest the culvert, SB-008, contained SVOC concentrations at 6 to 8 feet bgs that were higher than those detected in the culvert samples. The results do not, therefore, indicate that stormwater discharging from the building via the culvert is a primary source of metal and SVOC impacts on Lot 1.
- Ten of 11 permanent groundwater monitoring wells were gauged. Groundwater elevations ranged between 8.17 feet bgs in the southern part of the site and 11.99 feet bgs in the central-eastern part of the site.
- Two monitoring wells, MW-002 on the northeastern corner of the site and MW-008 in the southern part of the building, contained LNAPL. Dissolved-phase petroleum-related VOCs were detected in both wells, but LNAPL was not documented during the Phase I RI. TPH analysis and gas chromatograph review (“fingerprint analysis”) of LNAPL samples revealed that the free-phase product in MW-002 resembled No. 2 fuel oil/diesel fuel and the product from MW-008 resembled a mixture of gasoline and a motor oil type. The fingerprint analysis indicates two distinct sources of petroleum impacts. Based on detections of petroleum-related VOCs in soil samples collected near MW-008 during the

Phase I RIR, gasoline and oil releases during historical vehicle repair inside the garage building are the likely source of the LNAPL inside the garage.

- An on-site source of the LNAPL impacts near the northeastern corner of the site has not been identified. LNAPL has been documented in off-site borings and wells associated with the Red Hook 3 site (BCP No. C224213) directly northwest of the site and the Red Hook 4 site (BCP No. C2442414) directly north of the site.
- During ground-intrusive work, PM-10 and VOC concentrations did not exceed CAMP action levels.

Appendix IV:

Draft Remedial Action Work Plan

REMEDIAL ACTION WORK PLAN

for

145-165 Wolcott Street
Brooklyn, New York 11231
NYSDEC BCP Site No. C224256

Prepared For:

NYM 145 Wolcott, LLC
233 Broadway, 10th Floor
New York, New York 10279

Prepared By:

Langan Engineering, Environmental, Surveying,
Landscape Architecture and Geology, D.P.C.
368 Ninth Avenue, 8th Floor
New York, New York 10001

DRAFT

Gerald Nicholls, PE, CHMM
Associate Principal

October 29, 2024
Langan Project No. 170562203

CERTIFICATION

I, Gerald Nicholls, certify that I am currently a New York State (NYS) registered Professional Engineer and that this Remedial Action Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10) and DER-31: Green Remediation (DER-31).

I certify that all information and statements in this certification are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

DRAFT

NYS Professional Engineer #092433	Date	Signature

It is a violation of Article 145 of NYS Education Law for any person to alter this document in any way without the express written verification of adoption by any NYS licensed engineer in accordance with Section 7209(2), Article 145, NYS Education Law.

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APPENDICES

List of Acronyms

Acronym	Definition
ACM	Asbestos-Containing Material
AOC	Areas of Concern
ASP	Analytical Services Protocol
AST	Aboveground Storage Tank
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
Bgs	Below Grade Surface
BMP	Best Management Practices
BOD	Biochemical Oxygen Demand
BUD	Beneficial Use Determination
C&D	Construction and Demolition
CAMP	Community Air Monitoring Plan
CCR	Construction Completion Report
CFR	Code of Federal Regulations
CHASP	Construction Health and Safety Plan
CHMM	Certified Hazardous Materials Manager
COC	Certificate of Completion
COD	Chemical Oxygen Demand
CP	Commissioner Policy
CPP	Citizen Participation Plan
CQAP	Construction Quality Assurance Plan
CSM	Conceptual Site Model
CVOC	Chlorinated Volatile Organic Compound
DCA	Dichloroethane
DER	Division of Environmental Remediation
DER-10	Division of Environmental Remediation Program Policy: Technical Guidance for Site Investigation and Remediation, May 2010
DER-31	Division of Environmental Remediation Policy: Green Remediation Policy, January 2011
DMM	Division of Materials Management
DNAPL	Dense Non-Aqueous Phase Liquid
DUSR	Data Usability Summary Report
EC	Engineering Control
ECL	Environmental Conservation Law
EE	Environmental Easement
El	Elevation
ELAP	Environmental Laboratory Approval Program

Acronym	Definition
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FER	Final Engineering Report
FIRM	Flood Insurance Rate Map
FWRIA	Fish and Wildlife Resources Impact Analysis
GHG	Greenhouse Gas
GRO	Gasoline Range Organics
GSR	Green and Sustainable Remediation
HASP	Health and Safety Plan
IBZ	Industrial Business Zone
IC	Institutional Control
IDW	Investigation-Derived Waste
IRM	Interim Remedial Measure
IRMWP	Interim Remedial Measure Work Plan
Langan	Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C
LBP	Lead-Based Paint
LNAPL	Light Non-Aqueous Phase Liquid
mg/kg	Milligrams per Kilogram
NAVD 88	North American Vertical Datum of 1988
NAPL	Non-Aqueous Phase Liquid
NO_x	Nitrogen Oxides
NYCDEP	New York City Department of Environmental Protection
NYCDOB	New York City Department of Buildings
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
OSHA	Occupational Safety and Health Administration
PAH	Polycyclic Aromatic Hydrocarbon
PBS	Petroleum Bulk Storage
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethene
PE	Professional Engineer
PFAS	Per- and Polyfluoroalkyl Substances
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
PG	Professional Geologist

Acronym	Definition
PGW	Protection of Groundwater
PID	Photoionization Detector
PM10	Particulate Matter Less Than 10 Micrometers in Size
PPE	Personal Protective Equipment
ppm	Parts per Million
P.W. Grosser	P.W. Grosser Consulting, Inc.
QA/QC	Quality Assurance and Quality Control
QAPP	Quality Assurance Project Plan
QEP	Qualified Environmental Professional
RAO	Remedial Action Objectives
RAWP	Remedial Action Work Plan
RCA	Recycled Concrete Aggregate
RE	Remedial Engineer
REC	Recognized Environmental Conditions
RI	Remedial Investigation
RIR	Remedial Investigation Report
RUI	Restricted Use Industrial
SCG	Standards, Criteria, and Guidance
SCO	Soil Cleanup Objective
SGV	Standards and Guidance Values (SGV)
SMD	Sub-Membrane Depressurization
SMMP	Soil/Materials Management Plan
SMP	Site Management Plan
SOE	Support of Excavation
SPDES	State Pollutant Discharge Elimination System
STARS	Spills Technology and Remediation Series
SVI	Soil Vapor Intrusion
SVOC	Semivolatile Organic Compound
SWPPP	Stormwater Pollution Prevention Plan
TAL	Target Analyte List
TCL	Target Compound List
TOC	Total Organic Carbon
TOGS	Technical and Operational Guidance Series
TPH	Total Petroleum Hydrocarbons
µg/m^3	Micrograms per Cubic Meter
µg/L	Micrograms per Liter
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank

Acronym	Definition
UU	Unrestricted Use
VEFR	Vacuum-Enhanced Fluid Recovery
VOC	Volatile Organic Compound
VT	Volumetric Techniques, Ltd.
6 NYCRR	Title 6 of the New York Codes, Rules, and Regulations

EXECUTIVE SUMMARY

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) prepared this Remedial Action Work Plan (RAWP) on behalf of NYM 145 Wolcott, LLC (NYM 145 Wolcott) (the "Volunteer") for the property at 145-165 Wolcott Street in the Red Hook neighborhood of Brooklyn, New York (the "site"). The site was previously enrolled in the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) as Site No. C224256, and 145-65 Wolcott St. Realty Corp., the previous owner of the site, signed a Brownfield Cleanup Agreement (BCA) on February 21, 2018. Red Hook JV acquired the site in August 2019 and a BCA amendment adding Red Hook JV as a Volunteer was executed on December 31, 2019. Under the previous BCP iteration, a Remedial Investigation (RI) was completed in two phases between 2018 and 2021, and the NYSDEC approved the Phase I RI and Phase II RI reports on April 28, 2022 and March 16, 2023, respectively. The NYSDEC issued comments to a draft RAWP; however, the previous Volunteer withdrew Site No. C224256 from the BCP on December 13, 2023, with the intention of transferring ownership. The site was acquired by the current owner, NYM 145 Wolcott, LLC on April 25, 2024, and the current owner entered into a BCA as a Volunteer on May 21, 2024.

Upon completion of the remedial action described herein and the subsequent construction, the site will be improved with 6-story industrial building used for film and television production. The new building will occupy the entire site footprint.

This RAWP identifies and evaluates remedial action alternatives and recommends a Track 4 remedy to remove petroleum- and tar-like contaminant sources contributing to volatile organic compound (VOC) and semivolatile organic compound (SVOC) impacts to soil, groundwater, and soil vapor at the site; remediate VOC and SVOC impacts to groundwater; prevent exposure to SVOC-, metals-, polychlorinated biphenyl (PCB)-, and pesticide-impacted non-native fill; and mitigate intrusion of VOC-impacted soil vapor. The proposed remedy was developed based on data gathered during the following investigations:

1. Phase I RI conducted between July 2018 and June 2019 by P.W. Grosser Consulting, Inc. (P.W. Grosser)
2. Phase II RI conducted in June 2021 by Langan
3. Non-Aqueous Phase Liquid (NAPL) Investigation conducted between June and August 2024 by Langan

The recommended remedy described in this document is consistent with the procedures defined in Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10) and the NYSDEC Program Policy DER-31: Green Remediation (DER-31), and complies with applicable standards, criteria and guidance. The recommended remedy also

complies with applicable federal, state and local laws, regulations, and requirements. The NYSDEC and the New York State Department of Health have determined the site poses a positive significant threat to human health and the environment due to the potential for soil vapor intrusion (SVI). The RI did not identify impacts to fish and wildlife resources.

Site Location and Description

The approximately 80,150-square-foot (±1.84-acres) site is identified on the Brooklyn Borough Tax Map as Block 574, Lot 1 (formerly Lots 1, 23, and 24). The site is vacant and improved with asphalt- and concrete gravel pavement and the concrete slab of a former building. Access to the site is restricted by chain-link fencing with locked gates, which encompass the site perimeter.

The site is in an urban setting that is characterized by industrial and commercial buildings. The site is bound by Ferris Street followed by vacant lots to the northwest; Wolcott Street followed by mixed-use commercial and light industrial properties to the northeast; Conover Street followed by mixed-use institutional and commercial properties to the southeast; and mixed-use residential and commercial buildings followed by Dikeman Street and mixed-use residential and industrial buildings to the southwest. The nearest water body is New York Harbor, which is located about 650 feet west of the site.

According to a May 23, 2024 Boundary, Topographic & Utility Survey prepared by Control Point Associates Inc PC, the surface elevation (el.) ranges from about el. 13 in the southwestern part of the site to el. 9 in the northern part of the site to about [1]. The topography of the site is generally flat with a gentle slope to the north. Adjacent properties to the south/southeast of the site are at generally higher elevations and adjacent properties to the north/northwest of the site are at generally lower elevations.

Summary of the Remedial Investigation

The findings of the P.W. Grosser Phase I RI, the Langan Phase II RI, and the NAPL Investigation Report are summarized as follows:

[1] Elevations herein are in feet and referenced to the NAVD88, which is approximately 1.1 feet above mean sea level datum at Sandy Hook, New Jersey as defined by the United States Geological Survey (USGS NGVD 1929).

1. Stratigraphy: The site is underlain by non-native fill predominantly consisting of fine to medium sand with varying amounts of silt, clay, gravel, and anthropogenic materials (asphalt, brick, concrete, wood, glass, coal/bituminous ash, ash, plastic, fabric, metal fragments, and slag) that extends from below the surface cover to depths ranging from about 5 to 22 feet below grade surface (bgs). Native soil, consisting of fine to medium sand with varying amounts of silt, clay, and gravel was encountered beneath the non-native fill to boring termination depths (maximum depth of 100 feet bgs). Clay layers with a maximum thickness of about 6 feet were encountered in soil borings in the eastern and southwestern parts of the site at depths between 5 and 6 feet bgs; in soil borings in the central and southern parts of the site at depths between 10 and 27 feet bgs; and in soil borings on the central part of the site at depths between 66 and 77 feet bgs. Bedrock was not encountered.

2. Hydrogeology: Synoptic groundwater measurements were collected by Langan on August 13, 2024 from monitoring wells installed during the Phase I RI and the NAPL investigation. Groundwater was encountered in the monitoring wells between el. 0.10 (9.40 feet bgs) and el. 2.49 (7.40 feet bgs). The inferred direction of groundwater flow is to the southwest; however, groundwater flow direction and gradient are likely influenced by the interaction of tidal fluctuations with the stratigraphy and geometry of the former shoreline area and anthropogenic factors (e.g., buried utilities).

3. Petroleum and Tar-Like Impacts to Soil and Groundwater: On-site petroleum and tar-like material impacts to soil and groundwater, as evidenced by odors, staining, photoionization detector (PID) readings above background and/or sheen, and petroleum-related VOC and SVOCs detected above regulatory criteria, were identified in soil extending to depths of up to 22 feet bgs in the northwestern, northern, central, and eastern parts of the site. Tar-like material was identified in several borings on the northwestern part of the site and in one boring on the northern part of the site in approximately 0.5- to 6.5-foot-thick lenses at depths varying between 3 and 17 feet bgs. Fingerprint analyses of light non-aqueous phase liquid (LNAPL) collected from two monitoring wells and one soil boring identified sources of No. 6 fuel oil, No. 2 fuel oil/diesel fuel, and gasoline/motor oil on the northwestern, northern, and eastern parts of the site, respectively. The No. 6 fuel oil identified on the northwestern part of the site may either reflect a localized source or indicate the western extent of impacts from tar-like material. Petroleum and tar-like impacts are attributed to undocumented releases from historical site usage, including manufacturing, on-site petroleum bulk storage, and vehicle repair. Off-site contaminant sources, including the adjoining Red Hook 3 BCP property (BCP No. C224213) directly north of Ferris Street, may also contribute petroleum impacts to groundwater on the northern part of the site.

4. Tar- and/or Petroleum-Impacted Groundwater Below 60 Feet bgs: VOCs and SVOCs, including several petroleum- and/or tar-related compounds, were detected in groundwater at concentrations above the NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA water (collectively SGVs) in discreet groundwater samples collected between 60 and 80 feet bgs on the northern and central parts of the site during the 2019 Phase I RI. Maximum VOC and SVOC concentrations were generally identified in the deepest samples between 76 and 80 feet bgs. Subsequent installation and sampling of groundwater monitoring wells screened between 80 and 90 feet bgs on the northern and northwestern parts of the site during the 2024 NAPL investigation confirmed the absence of dense non-aqueous phase liquid (DNAPL). One deep well on the northwestern part of the site contained petroleum- and/or tar-related VOCs and SVOCs at concentrations above the SGVs and one deep well on the northern part of the site contained one petroleum-related VOC (benzene) at a concentration above the SGV; however, the concentrations were up to three orders of magnitude less than those detected in the discrete samples collected during the Phase I RI.

5. Metals-Impacted Soil: Metals (arsenic, copper, lead, and mercury) were detected above the Title 6 of the New York Codes, Rules and Regulations (NYCRR) Part 375 Restricted Use Industrial (RUI) Soil Cleanup Objectives (SCO) at locations throughout the site and generally within the 0- to 2-foot bgs interval. Lead was detected at one location on the southeastern part of the site at a concentration of 6,650 milligrams per kilogram (mg/kg), which is over 1.5 times the RUI SCO of 3,900 mg/kg. The detections are potentially associated with historical vehicle repair operations and the quality of non-native fill.

6. Non-Native Fill: Non-native fill contains SVOCs, metals, PCBs, and pesticides at concentrations above the Part 375 Unrestricted Use (UU) and/or RUI SCOs. The detections are generally attributable to the presence of anthropogenic debris within the fill material, including coal, ash, and brick material. Localized concentrations of SVOCs (e.g., above 500 mg/kg) and metals above the RUI SCOs are indicative of impacts associated with historical site use.

7. VOC-Impacted Soil Vapor: Chlorinated and petroleum-related VOCs were detected in soil vapor samples across the site. Petroleum-related VOCs and CVOCs were detected in sub-slab vapor samples (SV003 and SV004) on the eastern part of the site. In one sub-slab vapor sample (SV004) concentrations of petroleum-related VOCs and CVOCs were detected at least one order of magnitude higher than those detected in other soil vapor and sub-slab vapor samples.

Qualitative Human Health Exposure Assessment

The following conclusions were developed from the human health exposure assessment:

1. Human exposure to site contaminants is currently limited because the site is primarily covered with impervious surfaces and concrete gravel and access to the site is restricted to ownership and authorized visitors. The primary exposure pathways are dermal contact, ingestion, and inhalation of soil by site workers and site occupants. The exposure risks can be avoided or minimized by following the appropriate Construction Health and Safety Plan (CHASP) and vapor and dust suppression measures, and by implementing a Community Air Monitoring Plan (CAMP) during any soil disturbance.
2. In the absence of mitigation measures and controls, there is potential for exposure during remediation. The primary exposure pathways are:
    a. Dermal contact, ingestion, and inhalation of contaminated soil, groundwater, and/or soil vapor by remediation workers
    b. Dermal contact, ingestion, and inhalation of soil (dust) and inhalation of soil vapor by the community in the vicinity of the site

    These contacts can be avoided or minimized by implementing CAMP and by following the appropriate CHASP, vapor and dust suppression, soil erosion and sediment control, and site security measures, and following a NYSDEC-approved RAWP.
3. The existence of a complete exposure pathway for site contaminants to human receptors during proposed future conditions is unlikely. The site will be remediated and institutional controls (IC) and engineering controls (EC) will be in-place to mitigate any exposure risk related to remaining contamination.
4. Regional groundwater is not used as a potable water source in New York City; therefore, exposure to regional groundwater contaminants is unlikely.
5. It is possible that a complete exposure pathway exists for the migration of site contaminants to off-site human receptors during current and remediation conditions, but such potential exposure will be prevented or mitigated by implementation of monitoring and control measures. Monitoring and control measures have been and will continue to be used during investigation and remediation to prevent completion of this pathway. The potential pathway for SVI into the future building will be eliminated, because the future building will have a vapor barrier membrane beneath the foundation slab, a ventilation system in the parking areas of the cellar, and a sub-membrane depressurization (SMD) system in cellar and ground-floor areas not used for parking, and will be managed pursuant to a Site Management Plan (SMP).

SUMMARY OF THE REMEDY

The site will be remediated to meet Track 4 RUI standards. The recommended Alternative II Track 4 remedy will include the following:

1. Development and implementation of a CHASP and CAMP for the protection of on-site workers, visitors, the community, and the environment including during remediation and construction
2. To facilitate site remediation, demolition and removal of subsurface obstructions (e.g., remnant foundation elements) and the surficial building slab and asphalt and concrete gravel cover by the contractor and management of removed construction and demolition (C&D) debris in accordance with 6 NYCRR Part 360 and 361 regulations. Review and certification of C&D transport and disposal methodologies is not a requirement of the Remedial Engineer (RE). The RE is responsible for documenting that C&D debris is not comingled with contaminated site soil and fill
3. Collection of groundwater samples for groundwater treatability analysis and feasibility study and design of in-situ groundwater treatment system to address petroleum- and tar-impacted groundwater in the northern, northwestern, central, and eastern parts of the site
4. Recovery of LNAPL via vacuum-enhanced fluid recovery (VEFR) at wells MW-002, MW-008, and MW-012
5. Decommissioning of existing on-site groundwater monitoring wells in accordance with NYSDEC CP-43
6. Implementation of soil erosion, pollution and sediment control measures in compliance with applicable laws and regulations
7. Design and construction of support of excavation (SOE) systems to facilitate the Track 4 remedial excavation
8. Excavation and removal of about 13,100 cubic yards of non-native fill and soil to depths between 1 foot bgs and about 16 feet bgs, including the following areas:
    - Site-wide remedial excavation to about 1 feet bgs for removal of non-native fill exceeding the RUI SCOs
    - Excavation to depths between about 4 and 16 feet bgs in the northern, northwestern, eastern, and central parts of the site to remove soil with petroleum and tar-like impacts (i.e., based on analytical data and nuisance conditions) and remove soil from the northern, northwestern, central, and eastern contaminant source areas above the groundwater table with target VOCs and/or SVOCs above

the Part 375 Protection of Groundwater (PGW) SCOs (i.e., 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, 2-butanone, naphthalene, n-propylbenzene, toluene, total xylenes, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, indeno[1,2,3-cd]pyrene, and phenol).

9. Screening for indications of contamination (by visual means, odor, and monitoring with a PID) of excavated material during intrusive site work
10. Appropriate off-site disposal of excavated non-native fill and soil in accordance with federal, state, and local rules and regulations for handling, transport, and disposal
11. Dewatering to reach remedial excavation depths, and treatment and discharge of dewatering fluids in accordance with applicable regulations and municipal permit requirements
12. Decommissioning and removal of any encountered underground storage tanks (UST) in accordance with 6 NYCRR Part 613 and NYSDEC DER-10 Section 5.5
13. Completion of in-situ groundwater treatment via chemical injections to address petroleum- and/or tar-related groundwater impacts on the northern, northwestern, central, and eastern parts of the site
14. Collection and analysis of documentation soil samples, including quality assurance/quality control (QA/QC) samples, in accordance with DER-10 at base of the remedial excavation
15. Import of fill clean fill (i.e., soil meeting the lower of Part 375 RUI and PGW SCOs as defined by 6 NYCRR Part 375-6.5, or virgin, native crushed stone to backfill remedial excavations and facilitate EC installation
16. Installation and operation of an SMD system in portions of the site that are not occupied by a mechanically-ventilated parking garage and installation of a vapor barrier membrane beneath the building slab and around the sub-grade portions of the foundation walls to mitigate against potential vapor intrusion
17. Installation of a site cover system consisting of a concrete building foundation slab and underlying vapor barrier membrane system to prevent future exposure to remaining contaminated soil
18. Installation of a groundwater monitoring wells in the cellar of the new building for post-remediation groundwater monitoring and contingency treatment, if warranted
19. Completion of an SVI evaluation after the new building is constructed

20. Establishment of use restrictions (i.e., institutional controls [IC]) including prohibitions on the use of groundwater from the site and prohibitions on sensitive site uses, such as farming or vegetable gardening in remaining site soil, to prevent future exposure to remaining contamination
21. Recording of an environmental easement (EE) referencing ECs and ICs to prevent future exposure to remaining contamination
22. Publication of an SMP for long-term management of remaining contamination as required by the EE, including plans for: 1) IC/EC implementation, 2) monitoring, 3) operation and maintenance, and 4) reporting
23. Post-remediation groundwater monitoring of groundwater monitoring wells installed following completion of the remedial excavation for a minimum of eight quarters

Green remediation principles and techniques, including a vapor barrier, would be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. Remediation will be performed in accordance with this NYSDEC-approved RAWP and NYSDEC-issued Decision Document.

1.0 INTRODUCTION

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) prepared this Remedial Action Work Plan (RAWP) on behalf of NYM 145 Wolcott, LLC (NYM 145 Wolcott) (the "Volunteer") for the property at 145-165 Wolcott Street in the Red Hook neighborhood of Brooklyn, New York (the "site"). The Volunteer entered into the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) to investigate and remediate the site in accordance with a Brownfield Cleanup Agreement (BCA) executed on May 21, 2024.

This RAWP identifies and evaluates remedial action alternatives and recommends a Track 4 remedy to address petroleum- and tar-like impacts in soil, groundwater, and soil vapor; semivolatile organic compounds (SVOC), metals, and pesticides in non-native fill; and chlorinated volatile organic compounds (CVOC) in soil vapor at the site. The proposed remedy was developed based on data gathered during the following investigations:

- Phase I Remedial Investigation (RI) conducted between July 2018 and June 2019 by P.W. Grosser Consulting, Inc. (P.W. Grosser)
- Phase II RI conducted in June 2021 by Langan
- Non-Aqueous Phase Liquid (NAPL) Investigation conducted between June and August 2024 by Langan

The recommended remedy described in this document is consistent with the procedures defined in the Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10) and the NYSDEC Program Policy DER-31: Green Remediation (DER-31), and complies with applicable standards, criteria and guidance. The recommended remedy also complies with applicable federal, state and local laws, regulations, and requirements. The NYSDEC and the New York State Department of Health (NYSDOH) have determined that the site poses a significant threat to human health and the environment due to the potential for soil vapor intrusion (SVI). The RI did not identify impacts to fish and wildlife resources.

1.1 Site Location and Description

The approximately 80,150-square-foot (±1.84-acres) site is identified on the Brooklyn Borough Tax Map as Block 574, Lot 1 (formerly Lots 1, 23, and 24). The site is vacant and improved with the concrete slab of a former building and an inactive construction trailer on the southeastern part of the site. The remainder of the site is improved with asphalt and concrete gravel pavement. Access to the site is restricted by chain-link fencing with locked gates, which encompass the site perimeter. A Site Location Map is included as Figure 1 and a site survey is included as Appendix A.

1.2 Proposed Redevelopment Plan

The Volunteer plans to redevelop the property as an industrial facility that will include a 6-story building used for film and television production. The new building will occupy the entire site footprint and will include a subgrade level about 2 to 5 feet below grade and a roof about 75 feet above street grade. The subgrade level, which will be partially above sidewalk grade, will include a parking garage, mechanical and utility spaces, and storage areas. The building will include a 4-story podium constructed to the lot lines, with office levels on Floors 5 and 6 and a roof-top terrace above a portion of Floor 4. The ground floor of the building will be comprised of soundstages, a loading dock, and entryway. Floors 2 through 6 will contain ancillary offices and production support spaces such as dressing rooms, fitting rooms, and storage. The proposed redevelopment plans are included in Appendix B.

1.3 Description of Surrounding Properties

The site is in an urban setting that is characterized by industrial and commercial buildings. The site is bound by Ferris Street followed by vacant lots to the northwest; Wolcott Street followed by mixed-use commercial and light industrial properties to the northeast; Conover Street followed by mixed-use institutional and commercial properties to the southeast; and residential and commercial buildings followed by Dikeman Street to the southwest. A Site Location Map and Site Plan are provided as Figures 1 and Figure 2, respectively.

The following table summarizes surrounding property usage:

Direction	Block No.	Lot No.	Adjoining Properties	Surrounding Properties
Northeast			Wolcott Street	Industrial and commercial buildings
	564	1	43 Ferris Street 3-story industrial building	
		42	164 Wolcott Street 2-story industrial building	
		41	162 Wolcott Street 1-story parking garage	
		40	160 Wolcott Street Surface parking lot	
		16	145 Sullivan Street Surface parking lot	
		37	154 Wolcott Street Surface parking lot	
		22	133 Sullivan Street Surface parking lot	
Southeast			Conover Street	Residential, commercial, and institutional buildings
Southwest	574	30	198 Conover Stret 3-story residential	Residential, commercial, and institutional buildings

Direction	Block No.	Lot No.	Adjoining Properties	Surrounding Properties
		31	200 Conover Street 2-story residential	
		32	202 Conover Street 2-story residential	
	574	34	158 Dikeman Street 2-story industrial	Residential, commercial, and industrial buildings followed by New York Harbor
		35	160 Dikeman Street 4-story commercial	
		37	164 Dikeman Street 4-story residential	
		38	166 Dikeman Street 2-story industrial	
	Dikeman Street			
	585	20	165 Dikeman Street 1-story industrial	
		19	169 Dikeman Street 2-story residential	
		18	171 Dikeman Street 2-story residential	
		16	173 Dikeman Street 2-story industrial	
		13	175 Dikeman Street 1-story industrial	
		112	179 Dikeman Street 1-story parking garage	
		1	81 Ferris Street 1-story industrial	
Northwest	Ferris Street			Vacant land and industrial buildings followed by New York Harbor
	573	1	100 Ferris Street Vacant land	

Major infrastructure (storm drains, sewers, and underground utility lines) exists within the streets surrounding the site.

Land use within a half-mile of the site is urbanized and includes mixed-use buildings, light industrial and commercial buildings, and institutional facilities. Sensitive receptors, as defined in DER-10, located within a half-mile of the site include those listed below:

Name (Approximate distance from Site)	Address
South Brooklyn Community High School – K698 (about 50 feet southeast of the site)	173 Conover Street Brooklyn, NY 11231
P.S. 015 Patrick F. Daly School (about 0.10 miles southeast of the site)	71 Sullivan Street Brooklyn, NY 11231

Name (Approximate distance from Site)	Address
Kid Cool Theremin School (about 0.18 miles northeast of the site)	159 Pioneer Street Brooklyn, NY 11231
Pupa Yeshiva Ketaneh (about 0.18 miles northeast of the site)	159 Pioneer Street Brooklyn, NY 11231
Learning Wheel Childcare (about 0.19 miles southeast of the site)	48 Sullivan Street Brooklyn, NY 11231
Confesora Daycare Group (about 0.38 miles southeast of the site)	470 Columbia Street, #6F Brooklyn, NY 11231
Red Hook Neighborhood School (about 0.43 miles east of the site)	27 Huntington Street Brooklyn, NY 11231
Summit Academy Charter School (about 0.43 miles east of the site)	27 Huntington Street Brooklyn, NY 11231
Agnes Y Humphrey School for Leadership (about 0.43 miles east of the site)	27 Huntington Street Brooklyn, NY 11231
BumbleBeesRUs (about 0.48 miles southeast of the site)	76 Lorraine Street Brooklyn, NY 11231
BASIS Independent Brooklyn (about 0.5 miles southeast of the site)	556 Columbia Street Brooklyn, NY 11231

2.0 DESCRIPTION OF REMEDIAL INVESTIGATION FINDINGS

The Volunteer entered into the NYSDEC BCP to investigate and remediate the site in accordance with a BCA executed on May 21, 2024. The site was previously enrolled in the BCP under the same site number on behalf of Red Hook JV, LLC, and was subsequently withdrawn from the BCP on December 13, 2023. Under the previous BCA, the RI was completed in two phases between 2018 and 2021, and the NYSDEC approved the Phase I RI and Phase II RI reports on April 28, 2022 and March 16, 2023, respectively. Under the effective BCA, a supplemental NAPL investigation was completed between June and July 2024 in accordance with the May 22, 2024 NAPL Investigation Work Plan and a July 17, 2024 NAPL Investigation Work Plan Addendum (Work Plan Addendum).

2.1 Site History

2.1.1 Historical Site Use

The site has a protracted history of industrial and commercial usage, including oil resin manufacturing (1886), engine manufacturing and boiler repair (1904), transformer use (1915), commercial vehicle repair and petroleum bulk storage (1938-2016), lumber storage (1950-1992), commercial waste recycling (1993-2012), school bus parking and maintenance (2002-2016), and retail and commercial vehicle storage (2020-2022). The site was also used as a vehicle disassembly facility in the early 1940s, during which military vehicles were coated with the petroleum-based wax sealant cosmoline prior to overseas shipment. Residences were located on the southern part of the site along Conover Street between 1886 and 1969. The former warehouse building on the eastern part of the site was demolished between November 2022 and February 2023. The concrete slab of the former building remains in place.

Historical records indicate that the site contained six historical petroleum underground storage tanks (UST), which were either closed-in-place or removed by 2003. Five inactive fuel oil and kerosene aboveground storage tanks (AST) previously located inside the former building and one inactive, concrete-encased diesel AST previously located north of the former building were closed and removed in May 2022. The tanks were administratively closed under NYSDEC Petroleum Bulk Storage Facility ID No. 2-600048.

2.1.2 Previous Environmental Reports

Previous environmental reports reviewed are summarized in chronological order below and provided in Appendix C. The Phase I and Phase II RI's and the NAPL Investigation are summarized in Section 2.2.

- February 9, 2015 ASTM Certified Environmental Site Assessment (ESA): 145-165 Wolcott Street, prepared by Volumetric Techniques, Ltd. (VT)

- December 19, 2017 Letter: Re: BCP, prepared by John Eichler of P.W. Grosser, sent to Kelly Lewandowski of NYSDEC
- August 22, 2018 Letter: Re: Limited Subsurface Investigation, prepared by John Eichler of P.W. Grosser, sent to Gregory Iovine of 145-65 Wolcott St. Realty Corp.
- November 11, 2020 Letter: Re: RI, prepared by Kris Almskog of P.W. Grosser, sent to Steven Scharf of NYSDEC
- April 19, 2021 Phase I Remedial Investigation Report (RIR), prepared by P.W. Grosser
- October 2022 Phase II RIR, prepared by Langan
- June 26, 2023 Construction Completion Report (CCR), prepared by Langan
- December 12, 2023 Phase I ESA, prepared by Langan
- May 17, 2024 Geotechnical Engineering Report, prepared by Langan
- September 24, 2024 DRAFT NAPL Investigation Report, prepared by Langan

2.1.2.1 February 9, 2015 ASTM Certified ESA: 145-165 Wolcott Street, prepared by VT

The Phase I ESA identified the following recognized environmental conditions (REC):

- Historical use of the site that included an oil and tar manufacturer, chemical manufacturer, boiler manufacturer, army vehicle disassembly facility, and transportation depot (including storage and repair of school buses)
- Documented contamination, including polycyclic aromatic hydrocarbons (PAH), volatile organic compounds (VOC), and lead in soil and groundwater samples
- Documented off-site petroleum spills associated with a boring located at the intersection of Ferris Street and Sullivan Street and PAH-impacted soil at 44 Ferris Street
- Several historical tanks, including those listed below:

Type	Contents	Capacity (gallons)	Status	PBS Tank No.	Location
UST	#2 Fuel oil	6,000	Closed-In-Place	003	Northern part of the site
UST	Gasoline	6,000	Closed/Removed	006	Northern part of the site
4 USTs*	Gasoline	550	Closed-In-Place	001, 002, 005	Unknown
UST	Gasoline	500	Closed-In-Place	004	Unknown
UST**	Cosmoline†/ Waste Oil	Not Specified	Closed/Removed	N/A	Southwestern part of the site

Type	Contents	Capacity (gallons)	Status	PBS Tank No.	Location
UST**	Heating oil	275	Unknown	N/A	Underneath former body shop floor
AST	Diesel	4,000	Closed/Removed	009	Northern part of the site
4 ASTs	Fuel oil	275	Closed/Removed	007, 010, 011, 012	Adjacent to western side of building
AST**	Not Specified	Not Specified	Removed	N/A	Former body shop
AST	Kerosene	275	Closed/Removed	008	Not specified

Notes:

1. N/A – Not applicable

* 3 of 4 tanks were included in the NYSDEC Petroleum Bulk Storage (PBS) database listing for the site. The fourth tank was reported in the Phase I ESA.

**Tank not included in PBS database listing but reported in Phase I ESA.

†Cosmoline is a petroleum-based wax sealant that was used to coat vehicles to prevent rust and corrosion during transport.

VT conducted a subsurface investigation that included the collection of soil and groundwater samples. The investigation findings are summarized below:

- The subsurface generally consists of non-native fill extending to depths between about 3 and 7 feet below grade surface (bgs). The fill layer generally consists of brown sand with varying amounts of concrete, brick, bituminous ash, wood, tar, and resin.
- 33 soil borings exhibited photoionization detector (PID) readings above background at concentrations between 99 and 2,340 parts per million (ppm).
- Groundwater was observed between 11.5 and 16 feet bgs.
- Soil sample analytical results indicated concentrations of several petroleum-related VOCs above the Title 6 of the New York Codes, Rules and Regulations (NYCRR) Part 375 Unrestricted Use (UU) Soil Cleanup Objectives (SCO) at locations in the southeastern part of the site and near the former 6,000-gallon UST in the northern part of the site. PAHs were detected above the UU SCOs in a culvert near the northwestern corner of the former building, and several metals were detected above the UU SCOs in samples collected throughout the site.
- Concentrations of petroleum-related VOCs, PAHs, and metals exceeded the NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA water (collectively SGVs) in one or more groundwater samples. Petroleum-related VOCs were identified above the SGVs in groundwater near a former 6,000-gallon diesel UST in the northern part of the site.

VT identified the following Areas of Concern (AOC), based on historical site use, detections of PAHs and VOCs in soil and/or groundwater, and observations of staining:

PAH and VOC Detections

- Tar material on the northwestern part of the site
- Culvert near the northwestern corner of the former building; the origin and discharge point of the culvert was unknown
- Former vehicle body shop in the southern part of the former building
- Interior floor drain in the central part of the former building
- Historical cosmoline/waste oil UST in the southwestern part of the site
- VOCs in groundwater attributable to "background conditions" in Red Hook.

Site Use and Field Observations

- Historical and existing USTs and ASTs
- Soil staining near a waste storage and bermed containment area in the northern part of the site
- PID readings indicative of a potential vapor intrusion concern

2.1.2.2 December 19, 2017 Letter: Re: BCP Application, prepared by P.W. Grosser

P.W. Grosser mobilized to the site on October 10, 2017 in response to correspondence with NYSDEC regarding acetone concentrations reported in previously collected groundwater samples and the potential for an acetone source at the site. The site visit also included a geophysical survey conducted by Delta Geophysics Inc. to identify potential subsurface utilities, USTs, and subsurface anomalies. The geophysical survey identified seven metallic anomalies, none of which were consistent with a UST.

During the site visit, tar-like material resembling firm, black, dull, clay-like material was observed seeping through the surficial asphalt cover in the northwestern part of the site. The tar-like impacts covered an area that was about six feet in diameter, and the accumulated surficial mass was raised about 10- to 12-inches above the asphalt cover. P.W. Grosser collected a sample of the tar-like material that was submitted for laboratory analysis of Total Petroleum Hydrocarbons (TPH), petroleum hydrocarbon analysis (PHI), and acetone. The tar-like material sample contained a TPH concentration of 190,000 milligrams per kilogram (mg/kg) and produced a chromatographic match to coal tar and No. 6 fuel oil. Acetone was reported at a concentration of 0.91 mg/kg. The letter concludes that historical site operations and soil, groundwater, and tar-like material samples do not indicate an on-site source of acetone.

2.1.2.3 August 22, 2018 Letter: Re: Limited Subsurface Investigation, prepared by P.W. Grosser

P.W. Grosser advanced three soil borings and one groundwater monitoring well (SB002, SB018, and SB003/MW003) in July and August 2018 to investigate the apparent tar-like material on the northwestern part of the site, as proposed in a June 2018 NYSDEC-approved Remedial Investigation Work Plan. Soil boring SB018 was advanced in the northwestern part of the site, proximate to where tar-like material had been previously observed seeping through the surficial asphalt pavement within the parking lot. Soil boring SB002 was advanced northwest of SB018, and monitoring well MW003 was installed northeast of SB018. The soil borings were completed to depths between 62 and 72 feet bgs.

Tar-like material, resembling black, shiny, clay-like material mixed with black sand with PID readings up to 1,500 ppm was observed in soil boring SB018 from immediately below grade surface to about 8 feet bgs. Staining and odors were observed in SB018 to about 16 feet bgs. Soil boring SB002 exhibited stained soil and PID readings up to 295 ppm between 9 and 11 feet bgs and odors between 9 and 39 feet bgs. Groundwater was encountered between about 13 and 15 feet bgs.

Samples of the tar-like material were collected from the 0- to 2-foot and 4- to 6-foot depth intervals at SB018 and submitted for laboratory analysis of VOCs, SVOC, metals, polychlorinated biphenyls (PCB), pesticides, TPH, phenols, and formaldehyde. VOCs and SVOCs were detected at concentrations above the UU SCOs. TPH was reported at concentrations of 15,200 mg/kg and 27,000 mg/kg in the 0- to 2-foot and 4- to 6-foot interval samples, respectively.

2.1.2.4 November 11, 2020 Letter: Re: RI, prepared by P.W. Grosser for NYSDEC

Following P.W. Grosser's submission of the draft RIR, the NYSDEC issued comments to the draft RIR in a letter dated April 28, 2020. P.W. Grosser prepared a response letter committing to addressing items omitted in the initial draft RIR. The letter also noted that the following items would be addressed during a subsequent interim remedial measures (IRM) or implementation of a forthcoming RAWP:

- Evaluation of the well network near the tar-impacted area on the western and northwestern parts of the site for NAPL
- Evaluation of the interior floor drains and culvert along the outside of the former building
- Exploratory excavation and evaluation of the potential abandoned-in-place 6,000-gallon UST
- Post-demolition evaluation of a potential 275-gallon UST in the former auto body shop

- Remediation of VOC, SVOC, and metals-impacted soil within the tar-impacted area on the western and northwestern parts of the site
- Exploratory excavation of geophysical anomalies identified during the RIR
- Excavation and removal of tar-like material in the northwestern part of the site

The following previous reports are included in Appendix C.

2.1.2.5 June 26, 2023 CCR, prepared by Langan

Langan prepared a CCR on behalf of the previous site owner, Red Hook JV LLC, documenting implementation of the IRM component of an April 30, 2021 Phase II RI and IRM Work Plan (IRMWP). Langan implemented the following IRMs between May 2021 and March 2023:

- Implementation of a Construction Health and Safety Plan (CHASP) and a Community Air Monitoring Plan (CAMP) for dust, odor, and VOCs during ground-intrusive activities
- Removal and closure of four inactive 275-gallon fuel oil ASTs, one inactive 275-gallon kerosene AST, and one 4,000-gallon diesel AST
- Inventorying, sampling, and off-site disposal of fifty-five 55-gallon drums containing investigation-derived waste (IDW) generated during previous investigations and four 55-gallon drums of petroleum products and lacquer left at the site by former tenants
- Site preparation, including abatement of hazardous building materials (i.e., asbestos-containing material), demolition of the former building, and off-site disposal of construction and demolition (C&D) debris
- Documentation of the work performed by each contractor as specified in the IRMWP by Langan, the Remedial Engineer (RE).

Laboratory analytical results, disposal documentation, site observation reports, and NYSDEC correspondence are appended to the CCR.

2.1.2.6 December 12, 2023 Phase I ESA, prepared by Langan

The Phase I ESA was prepared on behalf of Atlantic NYMedia Holdings, LLC for the site. The report was prepared in accordance with ASTM International Standard Practice for ESAs E1527-21, and identified the following RECs:

REC 1 – Documented Contamination

A two-phase RI identified petroleum-like impacts in soil and groundwater; including soil staining, petroleum-like odors in soil, and concentrations of petroleum-related VOCs and SVOCs above applicable regulatory criteria in soil and groundwater. CVOCs were detected in one interior sub-slab vapor sample beneath the former building in the central part of the site

and one exterior soil vapor sample in the southeastern part of the site at concentrations warranting mitigation. Light non-aqueous phase liquid (LNAPL) was observed in one monitoring well on the northern part of the site and one monitoring well in the southern part of the former building. Potential dense non-aqueous phase liquid (DNAPL) was identified, as evidenced by concentrations of potential tar-related compounds in groundwater samples between 60 and 80 feet bgs in the northern and central parts of the site. Shallow tar-like impacts were identified immediately below surface grade to about 8 feet bgs in the northwestern part of the site.

REC 2 – Documented Contamination at Adjoining and Surrounding BCP Sites

Historical use of adjoining and surrounding properties included chemical and fertilizer manufacturing, tar and resin manufacturing, electrical and gas operations, maritime storage, dry dock repair, a lumber yard, a newspaper warehouse, oil refinery, a lubricating oil storage facility, and a ship repair facility. Two BCP sites with open spills and documented petroleum and tar-related impacts are located within 80 feet of the site. Red Hook 3 (BCP Site No. C224213) adjoins the site to the northwest, and Red Hook 4 (BCP Site No. C224214) is located approximately 80 feet north of the site.

2.1.2.7 May 17, 2024 Geotechnical Engineering Report, prepared by Langan

Langan completed a geotechnical investigation between February 1 and 19, 2024 to evaluate subsurface conditions within the proposed redevelopment area. The assessment included the advancement of 15 geotechnical borings to a maximum depth of 100 feet bgs and installation of three permanent observation wells.

Borings indicated site stratigraphy consists of non-native fill comprised of fine to coarse sand beneath surficial concrete and asphalt covered surfaces to depths of about 5 to 15 feet bgs. Native material consisting of fine to coarse sand with varying amounts of silt, clay, and gravel was observed below fill layer. Clay layers with a maximum thickness of about 8 feet were encountered in six soil borings (LB-13 through LB-18) at depths between 16 and 35 feet bgs. Bedrock was not encountered.

2.2 Summary of Remedial Investigations Performed

The objectives of the Phase I RI, Phase II RI, and NAPL Investigation were (1) to supplement the existing environmental data to determine, to the extent possible, the nature and extent of contamination in soil, groundwater, and soil vapor, and (2) to investigate AOCs. The Phase I RI included soil, groundwater, and soil vapor sampling and analysis. The Phase II RI included sediment and groundwater sampling and analysis and a test pit evaluation of potential USTs. The NAPL investigation evaluated the potential presence and extent of tar-related DNAPL and petroleum-related LNAPL identified during previous investigations. Supplemental borings were

also advanced to evaluate the extent of shallow tar-like material between 0 and 16 feet bgs on the northwestern part of the site. Sample locations from the Phase I and Phase II RI and the NAPL investigation are shown on Figure 3.

2.2.1 Phase I RI Field Investigation

The Phase I RI consisted of the following:

Geophysical Survey

- Completion of a geophysical survey using ground-penetrating radar and electromagnetic detection equipment to identify subsurface anomalies indicative of potential USTs and to clear sample locations from physical and/or subsurface utilities and structures

Soil Borings and Sampling

- Advancement of 18 soil borings to a maximum depth of 72 feet bgs
- Collection of 36 grab soil samples (plus quality assurance and quality control [QA/QC] samples) for laboratory analysis

Monitoring Well Installation and Sampling

- Installation and development of 11 monitoring wells to a maximum depth of about 20 feet bgs
- Collection of one groundwater sample from each newly installed monitoring well (11 samples) for laboratory analysis
- Surveying and synoptic gauging of existing monitoring wells to evaluate groundwater elevation and local groundwater flow direction
- Installation of 4 temporary vertical profile wells to a maximum depth of about 80 feet bgs
- Collection of 8 samples from discrete depth intervals in each of four temporary vertical wells (VP001 through VP004) (32 samples) for laboratory analysis

Soil Vapor and Ambient Air Sampling

- Installation of 8 temporary soil vapor sampling points (SV01, SV02, SV05 through SV10) to about 2 feet bgs
- Installation of 2 temporary sub-slab vapor sampling points (SV003 and SV004) to 2 inches below the existing slab of the former building
- Collection of one soil vapor sample from each sub-slab vapor point and soil vapor point, and collection of two indoor air samples (plus QA/QC sample) for laboratory analysis
- Completion of a chemical inventory inside the former building

The findings and conclusions of the Phase I RI include:

1. Geophysical Findings: A geophysical anomaly consistent with a 6,000-gallon UST was identified in the northwestern part of the site. Seven electromagnetic anomalies, including one in the northwestern and six in the southeastern parts of the site were also identified.

2. Stratigraphy: Non-native fill consisting of fine to medium sand with varying amounts of gravel and anthropogenic materials (asphalt, brick, coal/bituminous ash, concrete, tar, resin, and wood) was encountered from immediately below surface cover (i.e., asphalt, concrete) to depths up to 10 feet bgs. Fine to medium sand with varying amounts of clay, gravel, organics, and silt was encountered beneath the fill. Clay layers with a maximum thickness of about 6 feet were encountered in soil borings on the eastern (SB009) and southwestern (SB011) parts of the site at depths between 5 and 6 feet bgs. Bedrock was not encountered.

3. Hydrogeology: Groundwater was encountered between about 6.75 and 11.70 feet bgs, corresponding to elevations between el. 3.24 in the southeastern part of the site and el. 1.23 in the central-eastern part of the site.

4. Petroleum- and/or Tar-Like Impacts to Soil and Groundwater: Petroleum-like odors and PID readings up to 1,500 ppm were measured in borings throughout the asphalt-paved parking lot and within the former building at depths between surface grade and about 10 feet bgs. Tar-like material was observed in one boring on the northwestern part of the site from about 0.5 to 8 feet bgs. A potential on-site historical source of the tar-like material, which exhibited TPH characteristics of coal tar and No. 6 fuel oil based on P.W. Grosser's 2017 investigation, had not been identified.

   Petroleum-related VOCs and SVOCs exceeded the UU SCO and Restricted Use Industrial (RUI) SCOs in soil samples collected in the northern, central, and eastern parts of the site. SVOC concentrations reported in samples collected from the northwestern, northern, and eastern parts of the site were above those typically encountered in non-native fill and indicative of petroleum-related impacts.

   Several petroleum- and/or tar-related VOCs and SVOCs exceeded the NYSDEC SGVs in six of the eleven monitoring wells on the northern, western, and southeastern parts of the site and in the four temporary vertical profile wells between 0 and 40 feet bgs on the northern, central, and eastern parts of the site. A maximum VOC concentration of 750 micrograms per liter (µg/L) for xylenes was detected in a well on the eastern part of the site. SVOCs concentrations also exceeded those typically associated with non-native fill in a sample collected from the southwestern part of the site (MW005), with a maximum

SVOC detection of 560 µg/L for benzo(a)pyrene. The SVOC detections did not correlate with other sampling results and field observations from borings in that area. The same sample did not contain VOCs, and a previous groundwater sample collected near that location during the 2015 subsurface investigation did not contain SVOCs.

Potential on-site sources of petroleum impacts include undocumented releases during historical vehicle repair and petroleum bulk storage. Off-site contaminant sources, including the adjoining Red Hook 3 BCP property (BCP No. C224213) directly north of Ferris Street, may also contribute to petroleum impacts in groundwater on the northern part of the site.

Concentrations of petroleum- and/or tar-related VOCs and SVOCs were identified in discreet groundwater samples collected between 60 and 80 feet bgs on the northern and central parts of the site. Maximum VOC and SVOC concentrations were generally identified in the deepest samples between 76 and 80 feet bgs.

5. Soil Vapor: Petroleum-related VOCs were detected in all soil vapor samples and CVOCs were detected in five soil vapor and two sub-slab vapor samples on the northern, northwestern, southwestern, and eastern parts of the site. One sub-slab vapor sample collected on the eastern part of the site contained petroleum-related VOCs and CVOCs at concentrations at least one order of magnitude higher than those detected in other samples. An on-site source of CVOCs was not identified. Petroleum-related VOCs identified in soil vapor samples may be attributed to undocumented releases during historical vehicle repair and petroleum bulk storage.
6. Per- and Polyfluoroalkyl Substances (PFAS) Impacts to Groundwater: The PFAS compounds perfluorooctanesulfonic acid (PFOS) and/or perfluorooctanoic acid (PFOA) were detected at concentrations above the SGVs in 10 groundwater samples. Because there are no historical site uses associated with PFAS and groundwater at the site may be influenced by tidal fluctuations, the PFAS detections in groundwater may be related to a regional groundwater condition. According to NYSDEC InfoLocator, PFAS results for groundwater samples are similar to results from other nearby NYSDEC remediation sites to the north, northeast, and west (i.e., 37 Otsego Street [BCP Site C224300], Red Hook 4 [BCP Site C224214], and Former Chesebrough Manufacturing Site [BCP Site No. C224302]).

2.2.2 Phase II RI Field Investigation

The Phase II RI consisted of the following:

Geophysical Survey

- Completion of a geophysical survey to further evaluate subsurface anomalies identified during the Phase I RI

Test Pits and Sediment Sampling

- Excavation of seven test pits to a maximum depth of 6 feet bgs to evaluate geophysical anomalies identified during the Phase I RI
- Collection of two sediment samples from an exterior culvert near the northwestern corner of the former building on Lot 1 for laboratory analysis

Monitoring Well Gauging and Sampling

- Synoptic gauging of existing monitoring wells to evaluate groundwater elevation and the presence of NAPL
- Collection of LNAPL samples from two existing monitoring wells (MW-002 and MW-008) for laboratory analysis

The Phase II RI provided the following findings and conclusions:

1. Geophysical Survey: The locations of seven subsurface anomalies identified in the Phase I RIR were screened to identify potential subsurface structures prior to excavation of test pits. The survey also included screening of the area near the northwestern corner of the former building to investigate potential drainage structures. The survey confirmed the presence of subsurface anomalies in five of the eight surveyed locations; no obstructions were identified at the remaining three locations. The survey did not identify anomalies indicative of USTs. However, buried concrete and metal were identified in the central and northwestern part of the site, and buried metal and a partial buried vault were identified on the southeastern part of the site. A potential buried utility was observed to extend 75 feet westward from the exterior culvert and northwestern corner of the former building and terminate in the central part of the site.
2. Stratigraphy: Non-native fill consisting of fine sand with varying amounts of gravel and anthropogenic materials (brick, concrete, asphalt, plastic, fabric, wood, glass, and metal fragments) was encountered from immediately below the surface cover (i.e., asphalt, metal plate) to the test pit termination depth (maximum depth of 6 feet bgs). Bedrock was not encountered.
3. SVOC- and Metals-Impacted Soil: SVOCs and metals were detected at concentrations exceeding the UU and/or RUI SCOs in two soil samples collected from the open culvert

near the northwestern corner of the former building. SVOC and metal impacts may be attributed to anthropogenic materials comingled in soil.

4. LNAPL Gauging: Langan gauged all accessible on-site monitoring wells with an oil-water interface probe. LNAPL was observed in one monitoring well in the northern part of the site (MW-002) with a thickness of 0.9 feet and one monitoring well in the southern part of the site (MW-008) with a thickness of 1.48 feet. LNAPL was not observed in other gauged monitoring wells.

5. Fingerprint Analysis: LNAPL samples collected from monitoring wells MW-002 and MW-008 were analyzed for PHI by gas chromatography with flame ionization detector United States Environmental Protection Agency (USEPA) Method 8015D(M). TPH were reported at concentrations of 861,000 mg/kg in MW-002 and 906,000 mg/kg in MW-008. A qualitative review of gas chromatograph results compared to laboratory reference standards indicated that the LNAPL from MW-002 exhibits an affinity with No. 2 fuel oil/diesel fuel, and the LNAPL from MW-008 resembles a mixture of gasoline and a motor oil type product. The LNAPL in each well therefore appears to originate from different sources.

2.2.3 NAPL Investigation

The NAPL investigation was completed in two phases: June 3 to June 12, 2024 and July 23 to August 13, 2024. The investigation included the following:

Geophysical Survey

- Completion of a geophysical survey throughout the site to identify potential subsurface anomalies consistent with USTs and to clear sample locations from potential conflicts with subsurface utilities and structures

DNAPL Evaluation

- Advancement of nine soil borings in the northern, northwestern, and central parts of the site to depths between 85 and 100 feet bgs
- Collection of nine soil samples for laboratory analysis of VOCs and SVOCs
- Installation of three groundwater monitoring wells to a depth of 95 feet bgs
- Collection of one groundwater sample from each deep well for laboratory analysis of VOCs and SVOCs
- Gauging of the deep wells to evaluate for the presence of DNAPL and/or LNAPL on a weekly basis between August 2 and August 13, 2024

LNAPL Evaluation and Recovery

- Advancement of four soil borings in the northern and eastern part of the site to depths between 15 and 20 feet bgs
- Installation of three groundwater monitoring wells in the northern and eastern parts of the site and one groundwater monitoring well in the northwestern part of the site to depths between 15 and 17 feet bgs
- Collection of one groundwater sample from the new well on the northwestern part of the site for laboratory analysis of VOCs and SVOCs
- Collection of one free-phase petroleum- or tar-like product sample from a soil boring on the northwestern part of the site for laboratory analysis of TPH and PHI
- Gauging of existing and newly installed monitoring wells to evaluate for the presence of NAPL on a weekly basis between June 14 and August 13, 2024
- Recovery of LNAPL from five wells containing LNAPL between June 14 and August 13, 2024

Shallow Tar-Like Material Delineation

- Advancement of seven soil borings in the northwestern part of the site to a maximum depth of 25 feet bgs

The NAPL investigation provided the following findings and conclusions:

1. Geophysical Survey: Two subsurface anomalies interpreted as a former drain line extending between the eastern and central parts of the site and a buried concrete structure in the northwestern part of the site were identified. Anomalies indicative of USTs were not identified.

2. Stratigraphy: Non-native fill was observed from below the surface cover to depths between about 5 and 22 feet bgs and consisted of fine to medium sand with varying amounts of silt, clay, gravel, and anthropogenic materials (brick, concrete, wood, glass, coal, coal ash, and slag). Underlying native soil primarily consists of fine to medium sand with varying amounts of silt, clay, and gravel. Clay layers with a maximum thickness of about 6 feet were encountered in six soil borings at depths between 10 and 27 feet bgs. Clay layers with a maximum thickness of about 0.25 feet were encountered in two soil borings at depths between 66 and 77 feet bgs.

3. Hydrogeology: Groundwater was encountered between el. 0.10 (9.40 feet bgs) and el. 2.49 (7.40 feet bgs) during synoptic gauging on August 13, 2024. The inferred direction of groundwater flow is to the southwest; however, groundwater flow direction and gradient are likely influenced by the interaction of tidal fluctuations with the stratigraphy and geometry of the former shoreline area and anthropogenic factors (e.g., buried utilities).

4. Tar- and Petroleum-Related Impacts: Tar-like material resembling viscous, immiscible fluid and hard, black and tacky, yellow material was identified in eight borings on the northwestern part of the site and one boring on the northern part of the site in approximately 0.5- and 6.5-foot-thick lenses at depths varying between 3 and 17 feet bgs. The maximum detected PID reading in the tar-like material was 146.9 ppm in a boring on the northwestern part of the site. Several borings on the northern, northwestern, and eastern parts of the site contained petroleum and/or tar-impacted soil (i.e., staining, odors, and/or positive sheen tests) at depths varying between 0 and 22 feet bgs. The maximum detected PID reading was 613 ppm at about 11 feet bgs in soil boring SB14 on the eastern part of the site. The observations are generally consistent with the findings of the Phase I RI, which documented tar-like material extending from above the asphalt pavement in some areas to depths of at least 16 feet bgs in the northwestern portion of the site. The tar-like impacts extend farther west and north than previously documented and appear to occupy an area of about 8,500 square feet, compared with about 4,400 square feet as indicated by previous borings. Soil exhibiting potential petroleum-like impacts was generally observed at depths near or below the groundwater table, with the exception of apparent impacts shallower than 9 feet bgs in borings SB13 and SB14 on the eastern part of the site. This area has been identified as a potential source of petroleum impacts, based on petroleum-impacted groundwater in MW-008 and vehicle repair in the former building. Boring SBD09 on the northwestern part of the site also exhibited petroleum-like impacts, which are discussed below with reference to free-phase petroleum product observed in that boring.
5. LNAPL Gauging and Recovery: LNAPL was observed in two monitoring wells on the eastern part of the site with a maximum thickness of 1.41 feet, one well on the northern part of the site with a maximum thickness of 2.62 feet, and one well on the northwestern part of the site with a maximum thickness of 0.12 feet. The cumulative volume of LNAPL recovered via absorbent socks between June 14 and August 13, 2024 was ±1.54 gallons, with the well on the northern part of the site producing the most LNAPL (±0.8 gallons). The documentation of LNAPL in the eastern and northern parts of the site are consistent with observations during the Phase II RI. The Phase II RI identified two distinct sources of petroleum contamination associated with gasoline/motor oil and No. 2 fuel oil/diesel fuel in the eastern and northern areas, respectively. The source of LNAPL in the eastern part of the site may be attributable to former vehicle repair. An LNAPL source in the northern part of the site has not been identified, though the northern area was historically used for petroleum bulk storage.
6. DNAPL Gauging: DNAPL was not observed in the three monitoring wells screened at depths between 80 and 90 feet bgs on the northern and northwestern parts of the site

during five gauging events between August 2 and 13, 2024. The absence of DNAPL and corresponding soil impacts, as described in the following bullet, indicates that DNAPL is not a source of contamination at the site.

7. Soil Sampling Results: Two soil samples collected from 75 to 77 feet bgs and 85 to 87 feet bgs in a boring (SBD07) on the northern part of the site contained the VOC benzene at a concentration marginally above the Part 375 Protection of Groundwater (PGW) SCO, but below the RUI SCO. Other VOCs and SVOCs were not detected at concentrations above the PGW or RUI SCOs. The detection of benzene in saturated soil corresponds with benzene detected above the NYSDEC SGV in the groundwater sample collected from corresponding well MW-01D, which was screened between 80 and 90 feet bgs. Benzene was also detected in shallow groundwater samples collected from the northern part of the site during the 2019 Phase I RI. Based on the absence of VOCs and SVOCs above the PGW or RUI SCOs in soil samples collected from the same depth intervals in borings on the northwestern part of the site and the presence of benzene above the NYSDEC SGVs in deep and shallow groundwater samples collected from the northern part of the site, benzene is likely a localized occurrence indicative of adsorption from petroleum-impacted groundwater. The detection is not indicative of a contaminant source, as documented by the groundwater results described below.

8. Groundwater Analytical Results: Groundwater samples collected from a deep and shallow monitoring well in the northwestern part of the site (MW-03D and MW-03S) contained VOCs and SVOCs at concentrations above the NYSDEC SGVs. VOCs and SVOCs did not exceed the NYSDEC SGVs in groundwater sampled from another deep monitoring well (MW-02D) in the northwestern part of the site. The groundwater sample collected from the deep monitoring well in the northern part of the site (MW-01D) contained the VOC benzene at a concentration above the NYSDEC SGV; the same monitoring well did not contain SVOCs above the NYSDEC SGVs. The dissolved-phase groundwater impacts on the northwestern part of the site indicate that the tar-like material in the northwestern area constitutes a third source of VOC and SVOC groundwater impacts, in addition to LNAPL documented in the northern and eastern parts of the site.

9. Fingerprint Analysis: The sample of liquid product collected from 8 to 10 feet bgs in a soil boring on the northwestern part of the site (SBD09) contained TPH at a concentration of 6,210 mg/kg and produced a chromatographic match to No. 6 fuel oil. The No. 6 fuel oil signature correlates with that from the sample of surficial tar-like material collected during a 2017 supplemental investigation. The liquid product may either reflect a localized source of No. 6 fuel oil, which may have also impacted soil in nearby borings (SBT-S_40, SBD04, SBD05 and SB16), or indicate the western extent of impacts associated with tar-

like material observed on the northwestern part of the site at the ground surface and extending up to 17 feet bgs. LNAPL was not observed in a shallow well (MW-03S) located about 10 feet north of SBD09. A definitive historical commercial or industrial source of No. 6 fuel oil has not been identified.

2.3 Significant Threat

The NYSDEC and NYSDOH have determined the site poses a positive significant threat to human health and the environment due to the potential for soil vapor intrusion. A significant threat determination was provided in a June 28, 2023 NYSDEC and NYSDOH RAWP Comment Letter addressing a draft RAWP that was submitted on behalf of the previous Volunteer. A copy of the June 28, 2023 RAWP Comment Letter is included as Appendix D.

2.4 Geological Conditions

2.4.1 Regional and Site Geology

The shallow geology of the site has been influenced by the natural and developmental history of the Red Hook area. Red Hook was historically comprised of several low-lying islands separated by tidal estuaries and ponds. The area was filled incrementally between the mid and late 1800s to raise surface grades and extend the shoreline outward to the south and west. The site is located on the northern margins of a former island and straddles the original high-water line. Historical maps generally depict the northern, eastern, and southeastern portions of the site as outboard of the high water line. Areas outboard of the high-water line are anticipated to contain alluvial deposits comprised of soft slightly organic silt and clay below the non-native fill.

Based on the findings of previous investigations, the site is underlain by non-native fill predominantly consisting of fine to medium sand with varying amounts of silt, clay, gravel, and anthropogenic materials (asphalt, brick, concrete, wood, glass, coal/bituminous ash, ash, plastic, fabric, metal fragments, and slag) that extends from below the surface cover to depths varying between about 5 and 22 feet bgs. Native soil beneath the non-native fill consists of fine to medium sand with varying amounts of silt, clay, and gravel and extended to boring termination depth (maximum depth of 100 feet bgs). Clay layers with a maximum thickness of about 6 feet were encountered in borings on the eastern and southwestern parts of the site (SB009 and SB011) at depths between 5 and 6 feet bgs; in borings on the northern, eastern, and central part of the site (SBD01, SBD03, SBD06, SBD08, SB12 [Langan], and SB15 [Langan] between 10 and 27 feet bgs; and in soil borings on the northern and northwestern parts of the site (SBD08 and SBD09) between 66 and 77 feet bgs.

Bedrock was not encountered. However, published geological maps indicate that bedrock underlying the site is greater than 100 feet bgs and consists of schist and amphibolite of the Hartland Formation.

2.4.2 Regional and Site Hydrogeology

Groundwater flow is typically topographically influenced, as shallow groundwater tends to originate in areas of topographic highs and flows toward areas of topographic lows such as rivers, stream valleys, ponds, and wetlands. A broader, interconnected hydrogeologic network often governs groundwater flow at depth or in the bedrock aquifer. Groundwater depth and flow direction are also subject to hydrogeologic and anthropogenic variables such as precipitation, evaporation, extent of vegetation cover, coverage by impervious surfaces, and subsurface structures. Other factors influencing groundwater include depth to bedrock, the presence of anthropogenic fill, and variability in local geology and groundwater sources or sinks.

Synoptic groundwater measurements were collected by Langan on August 13, 2024 from monitoring wells installed during the Phase I RI and the NAPL investigation. Groundwater was encountered in the monitoring wells between el. 0.10 (9.40 feet bgs) and el. 2.49 (7.40 feet bgs). The inferred direction of groundwater flow is to the southwest towards New York Harbor; however, groundwater flow direction and gradient are likely influenced by the interaction of tidal fluctuations with the stratigraphy and geometry of the former shoreline area and anthropogenic factors (e.g., buried utilities). Groundwater in New York City is not used as a potable water source.

2.4.3 Wetlands and Floodplain

According to the United States Fish & Wildlife Service National Wetlands Inventory and the NYSDEC regulated wetlands map, there are no wetlands at or adjacent to the site. The Upper New York Harbor is about 650 feet west of the site and is identified as an estuarine and marine deep-water habitat. According to the Federal Emergency Management Agency (FEMA) September 5, 2007 Flood Insurance Rate Map (FIRM) Panel 3604970192F, the northern-most part of the site is located within Zone AE, which is designated as the 1% annual chance floodplain (base flood el. 10). The northwestern part of the site is in an area of moderate coastal flood risk outside of advisory flood hazard zones. The remaining site area is mapped in Zone X, which is determined to have a 0.2% annual chance flood hazard.

2.5 Contamination Conditions

2.5.1 Conceptual Site Model

A conceptual site model (CSM) was developed based on the findings of the Phase I RI, Phase II RI, and the NAPL investigation. The purpose of the CSM is to develop a simplified framework for understanding the distribution of impacted materials, potential migration pathways, and potentially complete exposure pathways.

2.5.1.1 Potential Sources of Contamination

Potential sources of contamination include former industrial, manufacturing, and vehicle repair operations at the site; historical industrial uses of surrounding properties; and non-native fill. Historical manufacturing and vehicle repair operations on the site and on adjoining properties are likely sources of petroleum-related VOCs in soil, groundwater, and soil vapor; CVOCs in soil vapor; petroleum-related SVOCs and metals in soil and groundwater; LNAPL; shallow tar-like material on the northwestern part of the site; and petroleum nuisance conditions in soil (i.e., staining, odors, and/or PID readings above background concentrations). The presence of non-native fill throughout the site is also a likely source of PAHs, metals, and pesticides. The PFAS compounds PFOS and PFOA were detected at concentrations exceeding the NYSDEC SGVs in groundwater sample collected across the site; however, an on-site source of PFAS was not identified.

2.5.1.2 Exposure Media

Impacted media include soil, groundwater, and soil vapor. Petroleum- and/or tar-related nuisance conditions and/or detections of petroleum-related VOCs and SVOCs above the UU and/or RUI SCOs were identified to depths extending to about 11.5 feet bgs in the northern and eastern parts of the site, to about 16 feet bgs in the northwestern part of the site, and to about 2 feet bgs in the southeastern part of the site. One VOC (benzene) was detected in two soil samples collected from 75 to 77 feet bgs and 85 to 87 feet bgs in a boring in the northern part of the site. SVOCs, pesticides, and metals were detected at concentrations above the Part 375 UU and/or RUI SCOs in soil samples throughout the site. Groundwater impacts include petroleum- and/or tar-related VOCs and SVOCs on the northern, eastern, and northwestern parts of the site, SVOCs related to non-native fill throughout the site, and dissolved metals (iron, manganese, magnesium, sodium, antimony [in one sample] and nickel [in one sample]) and PFAS related to regional conditions throughout the site. LNAPL is also present in wells on the northern, eastern, and northwestern parts of the site. CVOCs and petroleum-related VOCs were detected in soil vapor and sub-slab vapor samples across the site.

2.5.1.3 Receptor Populations

Current receptor populations are limited to the community surrounding the site and authorized individuals completing investigations. During site redevelopment, human receptors will be limited to construction and remediation workers, authorized guests, and the community and pedestrians adjacent to the site. Under future conditions, receptors will include industrial use employees and the nearby community.

2.5.2 Description of Areas of Concern

The following AOCs have been identified based on the results and findings of the Phase I RI, Phase II RI, and the NAPL investigation. AOC locations are shown on Figure 3.

2.5.2.1 AOC 1: Petroleum Impacts to Soil, Groundwater, and Soil Vapor

Petroleum impacts, as evidenced by odors, staining, PID readings above background and/or sheen, and petroleum-related VOCs and SVOCs detected above regulatory criteria, were identified in soil and groundwater in the northern, northwestern, central, and eastern parts of the site. The impacts coincide with shallow tar-related impacts on the northwestern part of the site, as discussed in AOC 3. The petroleum impacts in soil extend to depths ranging between about 3 and 11.5 feet bgs on the northern and eastern parts of the site. The petroleum- and/or tar-related impacts in the northwestern part of the site extend to depths ranging between about 8 and 16 feet bgs. Petroleum-related VOCs were also detected in soil vapor and sub-slab vapor samples throughout the site.

LNAPL has been documented in two wells on the northern (MW-002) and eastern (MW-008) parts of the site and within a boring (SBD09) on the northwestern part of the site. TPH/PHI analysis indicated three distinct contaminant sources for the LNAPL, including No. 2 fuel oil/diesel fuel on the northern part of the site, gasoline/motor oil mixture on the eastern part of the site, and No. 6 fuel oil on the northwestern part of the site.

Petroleum impacts are attributed to former on-site petroleum bulk storage and undocumented releases during historical vehicle repair on the northern and eastern parts of the site. Off-site contaminant sources, including the adjoining Red Hook 3 BCP property (BCP No. C224213) north of Ferris Street, may also contribute to petroleum impacts in groundwater on the northern part of the site. The LNAPL and soil and groundwater impacts on the northwestern part of the site may either indicate the western extent of impacts associated with tar-like material (AOC 3) or a separate, localized release of No. 6 fuel oil. A definitive historical commercial or industrial source of No. 6 fuel oil has not been identified.

2.5.2.2 AOC 2: Metals Impacts in Soil

Metals impacts to soil across the site, as evidenced by concentrations of compounds above the UU and/or RUI SCOs, were identified at varying depths up to 19 feet bgs and may be attributed to anthropogenic materials comingled in soil, and/or localized releases (e.g., gasoline and waste oil) during historical vehicle repair and petroleum bulk storage.

2.5.2.3 AOC 3: Shallow Tar-like Material

Shallow tar-like material resembling coal tar/No. 6 fuel oil, based on PHI analysis, extends continuously from surface grade to depths of up to 8 feet bgs (SB018) on the northwestern part

of the site. The free-phase tar-like material, which variously resembles a viscous, immiscible fluid and hard, tacky material, continues to extend below 8 feet bgs in 0.5- to 7-foot-thick lenses to depths of up to 17 feet bgs. Soil within the tar-impacted area exhibits odors, staining, and PID readings above background to a depth of up to 22 feet bgs. Soil samples below the tar-like material between 12 and 16 feet bgs (SB018) contained petroleum-related VOCs and SVOCs at concentrations above the PGW and/or RUI SCOs. The tar impacts do not appear to be associated with DNAPL, as indicated by subsurface observations in borings and during gauging of wells screened between 80 and 90 feet bgs. However, the tar impacts may be associated with LNAPL observed within a boring (SBD09) on the northwestern part of the site, as noted in AOC 1. The tar impacts appear to extend across about 8,500 square feet. A historical source of the tar-related material has not been identified.

2.5.2.4 AOC 4: Non-Native Fill

Non-native fill extends from below the surface cover to depths between about 5 and 22 feet bgs and consists of fine to medium sand with varying amounts of silt, clay, gravel, and anthropogenic materials (brick, concrete, wood, glass, coal, coal ash, and slag). The non-native fill contains SVOCs and metals (mercury, arsenic, lead, chromium, cadmium, and zinc) at concentrations above the PGW and RIU SCOs. Impacts were encountered throughout the site at varying depths to 8 feet bgs and may be attributed to anthropogenic materials comingled in soil.

2.5.2.5 AOC 5: CVOC-Impacted Soil Vapor

CVOCs, including tetrachloroethene (PCE), trichloroethene, and vinyl chloride, were detected in three soil vapor samples and one interior sub-slab vapor sample. A PCE detection of 2,250 micrograms per cubic meter (µg/m^3) in a sub-slab vapor sample collected below the former building was the highest detected CVOC concentration. CVOCs detected in soil vapor underlying the former building and the southeastern part of the site may be attributed to releases of chlorinated solvents during historical vehicle repair operations; however, the results of soil and groundwater sampling did not reveal an on-site source of CVOCs.

2.5.3 Nature and Extent of Contamination

This section evaluates the nature and extent of soil, groundwater, and soil vapor contamination.

2.5.3.1 Soil Contamination

Soil exhibiting petroleum-related impacts, including odors, staining, sheen, PID readings up to 1,500 ppm, and VOCs and SVOCs above PGW and/or RIU SCOs, has been identified on the northern, eastern, central, and northwestern parts of the site. The impacts extend from surface grade to depths up to about 9 feet bgs on the northern part of the site, 11.5 feet bgs on the eastern part of the site, 10 feet on the central part of the site, and 17 feet on the northwestern

part of the site. A maximum petroleum-related VOC concentration was detected in a sample collected between 6 and 8 feet bgs on the eastern part of the site (SB013: naphthalene at 450 mg/kg).

Shallow tar-like material resembling coal tar/No. 6 fuel oil, based on PHI analysis, extends continuously from surface grade to depths of up to 8 feet bgs on the northwestern part of the site. The free-phase tar-like material, which variously resembles a viscous, immiscible fluid and hard, tacky material, continues to extend below 8 feet bgs in 0.5- to 7-foot-thick lenses to depths of up to 17 feet bgs. Soil within the tar-impacted area exhibits odors, staining, and PID readings above background to a depth of up to 22 feet bgs. Soil samples below the tar-like material between 12 and 16 feet bgs contained petroleum-related VOCs and SVOCs at concentrations above the PGW and/or RUI SCOs. Maximum petroleum and/or tar-related VOC and SVOC concentrations were detected in samples collected from 12 to 16 feet bgs (SB018: total xylenes at 14.5 mg/kg and chrysene at 1,240 mg/kg).

Non-native fill consisting of fine to medium sand with varying amounts of silt, clay, gravel, and anthropogenic materials (asphalt, brick, concrete, wood, glass, coal/bituminous ash, ash, plastic, fabric, metal fragments, and slag) was encountered across the site beneath the surface cover to depths varying between 5 and 22 feet bgs. The non-native soil is associated with concentrations of SVOCs and metals (mercury, arsenic, lead, chromium, cadmium, and zinc) above the PGW and/or RUI SCOs and concentrations of PCBs and pesticides above the UU SCOs. The detections are likely attributed to anthropogenic materials comingled in soil, and/or localized releases (e.g., gasoline and waste oil) during historical vehicle repair and petroleum bulk storage.

Soil and sediment sample analytical results are provided in Tables 1 and 2 and shown on Figures 4A and 4B.

2.5.3.2 Groundwater Contamination

Groundwater impacts include petroleum and/or tar-related VOCs and SVOCs detected at concentrations above the NYSDEC SGVs on the northern, northwestern, and eastern parts of the site. One well on the southwestern part of the site (MW-005) contains petroleum- and/or tar-related SVOCs above the NYSDEC SGVs. The highest detected petroleum-related VOC concentrations were in samples collected from the northern part of the site (MW-002: 1,2,4-trimethylbenzene at 140 µg/L) and the eastern part of the site (MW-008: total xylenes at 750 µg/L). The highest detected petroleum- and/or tar-related SVOC concentrations were in a sample collected from the southwestern part of the site (MW-005: benzo[a]pyrene at 560 µg/L); however, the SVOC detection in that sample was anomalous with respect to groundwater sampling results from 2015, the absence of corresponding VOC detections in the sample, and the absence of field observations indicative of impacts in that area.

Discrete groundwater samples collected between 60 and 80 feet bgs from two temporary wells on the northern and central parts of the site during the Phase I RI contained several petroleum and/or tar-related VOCs and SVOCs at concentrations above the NYSDEC SGVs, including benzene and naphthalene as high as 2,200 µg/L and 5,200 µg/L, respectively (VP002). However, petroleum and/or tar-related impacts were not identified in soil borings advanced up to 100 feet bgs in the northern, central, and northwestern parts of the site during the subsequent NAPL investigation. Groundwater samples collected from permanent monitoring wells installed at the same locations and screened between 80 and 90 feet bgs (MW-01D through MW-03D) contained petroleum and/or tar related VOCs and SVOCs at concentrations 2 to 3 orders of magnitude less than those detected in the discrete samples. DNAPL was not identified in the deep wells. The discrepancy between sampling results from the two events may be attributed to cross-contamination during rod advancement and collection of the discrete samples in 2019.

LNAPL has been documented in wells on the northern (MW-002) and eastern (MW-008 and MW-012) parts of the site and within a boring (SBD09) on the northwestern part of the site. The maximum measured product thicknesses on the northern, eastern, northwestern parts of the site were 2.62 feet, 0.29 feet, and 0.20 feet, respectively. TPH/PHI analysis indicated three distinct contaminant sources for the LNAPL, including No. 2 fuel oil/diesel fuel on the northern part of the site, gasoline/motor oil mixture on the eastern part of the site, and No. 6 fuel oil on the northwestern part of the site.

One CVOC, 1,2-dichloroethane (1,2-DCA), exceeded the SGV in two samples collected from the eastern and central parts of the site, and in a discreet sample between 76 and 80 feet bgs in the southeastern part of the site. The analytical results from soil sampling do not indicate an on-site source for 1,2-DCA.

Dissolved metals (iron, manganese, magnesium, sodium, antimony, and nickel) and the PFAS compounds PFOA and PFOS were detected above the NYSDEC SGVs in groundwater samples throughout the site and likely reflect regional background conditions above SGVs.

Groundwater sample analytical results are provided in Tables 3A and 3B, shown on Figures 5A, 5B, 6A, and 6B, and a groundwater elevation contour map is included as Figure 7.

2.5.3.3 Soil Vapor Contamination

Chlorinated and petroleum-related VOCs were identified in soil vapor samples throughout the site. CVOCs detected in soil vapor beneath the former building and within the southeastern part of the site may be attributed to releases of chlorinated solvents during historical vehicle repair operations; however, the results of soil and groundwater sampling did not reveal an on-site source of CVOCs. Petroleum impacts in soil and groundwater on the southeastern part of the site are the likely source of petroleum-related VOCs in soil vapor.

Soil vapor sample analytical results are provided in Tables 4A and 4B and shown on Figure 8.

2.6 Environmental and Public Health Assessments

2.6.1 Qualitative Human Health Exposure Assessment

Based on the CSM and review of environmental data, complete on-site exposure pathways appear to be present in the absence of remediation, monitoring and mitigation, or engineering controls (EC) (ex., CHASP with a CAMP, capping system, etc.) and institutional controls (IC), in construction/remediation and future use conditions.

Complete exposure pathways have the following five elements: (1) a contaminant source; (2) a contaminant release and transport mechanism; (3) a point of exposure; (4) a route of exposure; and (5) a receptor population. A discussion of the five elements comprising a complete pathway as they pertain to the site is provided below.

2.6.1.1Current Conditions

Contaminant sources include 1) petroleum- and tar-related impacts in soil, groundwater, and soil vapor; 2) metals impacts in soil; 3) shallow tar-like material; 4) non-native fill with varying concentrations of SVOCs, metals, pesticides, and PCBs; and 5) soil vapor with chlorinated- and petroleum-related VOCs.

Contaminant release and transport mechanisms include contaminated soil transported as dust (dermal, ingestion, inhalation). The potential receptors on-site include authorized individuals completing investigations. Under current conditions, the likelihood of exposure to humans is limited due to the following:

- The site is vacant and is primarily covered by a concrete slab and/or asphalt and concrete gravel pavement, which limits direct contact with soil, groundwater, and soil vapor. Localized areas of exposed soil exists throughout the site; exposure to surficial soil through direct contact and inhalation may occur in these areas.
- The site is surrounded by locked fencing and gates. Access to the site is restricted to ownership and authorized visitors. Sampling activities are completed in accordance with a site-specific CHASP and CAMP that is designed to monitor and prevent exposure to soil, groundwater, and soil vapor contaminants.
- Groundwater at the site is not a potable water source.

2.6.1.2 Construction/Remediation Activities

During the remedial excavation and foundation construction stage of redevelopment, points of exposure include disturbed and exposed soil and groundwater during excavation and possible dewatering, and dust and potential organic vapors generated during excavation. Routes of

exposure include ingestion and dermal absorption of contaminated soil and groundwater, inhalation of potential organic vapors arising from contaminated groundwater and soil, and inhalation of dust originating from contaminated soil. The receptor population includes construction and remediation workers. The community adjacent to the site will be protected via implementation of the CHASP, CAMP, and other dust control measures to prevent off-site impacts.

The potential for completed on-site exposure pathways is present since all five elements exist; however, the risk can be avoided or minimized by applying appropriate health and safety measures during construction and remediation, such as monitoring the air for organic vapors and dust, using vapor and dust suppression measures, cleaning truck undercarriages and securing tarp covers before they leave the site to prevent off-site soil tracking, maintaining site security, and wearing the appropriate personal protective equipment (PPE). These measures are also designed to prevent off-site impacts.

A RAWP with a CHASP and a CAMP that include measures such as conducting a community air-monitoring program, donning PPE, covering soil stockpiles, altering work sequencing, restricting eating and drinking in work areas, maintaining a secure construction entrance, proper housekeeping, and applying vapor and dust suppression measures to prevent off-site migration of vapors and particulates during construction will be implemented. Such measures will prevent completion of exposure pathways for soil, groundwater, and soil vapor contaminants.

2.6.1.3 Proposed Future Conditions

Under the proposed future conditions, some remaining contaminants may remain on site, depending on the remedy, and will, to a lesser extent, include those listed under current conditions. If remaining impacts exist and ECs and ICs are not implemented, points of exposure would potentially include cracks in the foundation of the proposed development, exposure during any future ground-intrusive work, or inhalation of vapors entering the building. The receptor population would include industrial-use occupants, employees, and the nearby community. The possible routes of exposure can be avoided or mitigated by maintenance of a site capping system (e.g., concrete building slabs, asphalt roadways and at least 2 feet of clean soil in landscaped areas); installation of a waterproofing/vapor barrier membrane and/or active vapor mitigation controls in new buildings; implementation of a Site Management Plan (SMP); and placement of an environmental easement (EE) at the site.

2.6.1.4 Human Health Exposure Assessment Conclusions

1. Human exposure to site contaminants is currently limited because the site is primarily covered with impervious surfaces and concrete gravel and access to the site is restricted to ownership and authorized visitors. The primary exposure pathways are dermal contact,

ingestion, and inhalation of soil by site workers and site occupants. The exposure risks can be avoided or minimized by following the appropriate CHASP and vapor and dust suppression measures, and by implementing a CAMP during any soil disturbance.

2. In the absence of mitigation measures and controls, there is potential for exposure during remediation. The primary exposure pathways are:

   a. Dermal contact, ingestion, and inhalation of contaminated soil, groundwater, and/or soil vapor by remediation workers

   b. Dermal contact, ingestion, and inhalation of soil (dust) and inhalation of soil vapor by the community in the vicinity of the site

   These contacts can be avoided or minimized by implementing CAMP and by following the appropriate CHASP, vapor and dust suppression, soil erosion and sediment control, and site security measures, and following a NYSDEC-approved RAWP.

3. The existence of a complete exposure pathway for site contaminants to human receptors during proposed future conditions is unlikely. The site will be remediated and ICs and ECs will be in-place to mitigate any exposure risk related to remaining contamination.

4. Regional groundwater is not used as a potable water source in New York City; therefore, exposure to regional groundwater contaminants is unlikely.

5. It is possible that a complete exposure pathway exists for the migration of site contaminants to off-site human receptors during current and remediation conditions, but such potential exposure will be prevented or mitigated by implementation of monitoring and control measures. Monitoring and control measures have been and will continue to be used during investigation and remediation to prevent completion of this pathway. The potential pathway for SVI into the future building will be minimized, because the future building will have a vapor barrier membrane beneath the foundation slab, a ventilation system in the parking areas of the cellar, and a sub-membrane depressurization (SMD) system in cellar and ground-floor areas not used for parking, and will be managed pursuant to an SMP.

2.6.2 Fish & Wildlife Resources Impact Analysis

In addition to the human health exposure assessment, NYSDEC DER-10 requires an on-site and off-site United States Fish and Wildlife Resources Impact Analysis (FWRIA) if certain criteria are met. Based on the requirements stipulated in Section 3.10 and Appendix 3C of DER-10, there was no need to prepare a FWRIA for the site.

2.7 Interim Remedial Action

Previous IRMs are documented in Section 2.1.2.5 and the 2023 CCR prepared by Langan, included in Appendix C. An April 30, 2021 IRMWP was implemented between May 2021 and March 2023 for the removal and closure of ASTs, a test pit investigation for potential USTs, abatement and demolition of the former building, and sampling and removal of drums containing IDW and drums containing petroleum products and lacquer that were left by former tenants.

2.8 Remedial Action Objectives

Based on the results of the RI, the following Remedial Action Objectives (RAO) have been identified for this site.

RAOs	RAOs for Public Health Protection	RAOs for Environmental Protection
Soil	• Prevent ingestion/direct contact with contaminated soil • Prevent inhalation of, or exposure to, contaminants volatilizing from contaminated soil	• Prevent migration of contaminants that would result in groundwater contamination
Groundwater	• Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards • Prevent contact with, or inhalation of, volatiles emanating from contaminated groundwater	• Restore groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable • Remove the source of groundwater contamination • Prevent the discharge of contaminants to surface water
Soil Vapor	• Mitigate impacts to public health resulting from existing, or the potential for, SVI into buildings at the site	

3.0 DESCRIPTION OF REMEDIAL ACTION PLAN

This section presents an evaluation of two remedial alternatives. Alternative determination considers applicable standards, criteria, and guidance (SCG) and the site-specific RAOs. The alternatives are evaluated using threshold and balancing criteria to determine the preferred remedial action plan. The two remedial alternatives evaluated for the site remediation are:

- Alternative I – Track 1 Unrestricted Use Cleanup
- Alternative II – Track 4 Restricted Use Industrial Cleanup

The recommended remedial alternative, based on an evaluation of the alternatives, is a Track 4 RUI cleanup requiring an EE and an SMP to address remaining contamination.

3.1 Standards, Criteria, and Guidance

In accordance with Environmental Conservation Law (ECL) § 27-1415 and DER-10, the objectives of the remedial action are to: 1) reduce the concentrations of contaminants of concern at the site to meet those levels that will protect public health and the environment, and 2) isolate the site from migration of contaminated groundwater and soil vapor, to the extent feasible, from potential off-site sources. In accordance with DER-10, the Volunteer will have no remedial responsibilities with respect to groundwater contamination migrating to the site from an off-site source; however, remedial alternatives will be developed for such a case that eliminate or mitigate on-site human exposures, to the extent feasible, resulting from potential off-site contamination entering the site since there are other suspect and known contaminated sites in the vicinity of this site. Where identifiable sources of contamination are found on the site, the sources will be removed, treated to the greatest extent practical, or contained.

Also, in accordance with DER-10, the RAOs for this site are defined as medium-specific objectives for the protection of public health and the environment and are developed based on contaminant-specific SCGs, which include:

- 6 NYCRR Part 175 – Special Licenses and Permits--Definitions and Uniform Procedures
- 6 NYCRR Part 360 – Solid Waste Management Facilities General Requirements
- 6 NYCRR Part 361 —Material Recovery Facilities
- 6 NYCRR Part 364 – Waste Transporters
- 6 NYCRR Part 370 – Hazardous Waste Management System
- 6 NYCRR Part 371 – Identification and Listing of Hazardous Wastes
- 6 NYCRR Part 372 – Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities

- 6 NYCRR Subpart 374-1 – Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
- 6 NYCRR Subpart 374-2 – Standards for the Management of Used Oil
- 6 NYCRR Subpart 374-3 – Standards for Universal Waste
- 6 NYCRR Part 375 – Environmental Remediation Programs
- 6 NYCRR Part 376 – Land Disposal Restrictions
- 6 NYCRR Part 612 – Registration for Petroleum Storage Facilities (February 1992)
- 6 NYCRR Part 613 – Petroleum Bulk Storage
- 6 NYCRR Part 700-706 – Surface Water and Groundwater Classification Standards
- 6 NYCRR Part 750 – State Pollutant Discharge Elimination System (SPDES) Regulations
- 10 NYCRR Part 67 – Lead Poisoning Prevention and Control
- 12 NYCRR Part 56 – Industrial Code Rule 56 (Asbestos)
- Code of Federal Regulations (CFR) Title 29 Part 1910.120 – Hazardous Waste Operations and Emergency Response Standard
- CFR Title 29 Part 1926 – Safety and Health Regulations for Construction
- 40 CFR Part 280 – Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks
- 29 CFR Part 1910.120 – Hazardous Waste Operations and Emergency Response
- DAR-1 (formerly Air Guide 1) (1997) – Guidelines for the Control of Toxic Ambient Air Contaminants
- NYSDEC Title 6 of the New York Codes, Rules and Regulations
- NYSDEC – Permanent Closure of Petroleum Storage Tanks (July 1988)
- NYSDEC – Sampling, Analysis, and Assessment of PFAS Under NYSDEC's Part 375 Remedial Programs (April 2023)
- NYSDEC – Spill Response Guidance Manual
- NYSDEC Commissioner Policy (CP)-43 – Groundwater Monitoring Well Decommissioning Policy (2009)
- NYSDEC CP-51 – Soil Cleanup Guidance (2010)
- NYSDEC DER-2 – Making Changes to Selected Remedies (Revised April, 2008)

- NYSDEC DER-10 – Technical Guidance for Site Investigation and Remediation (2010)
- NYSDEC DER-23 – Citizen Participation Handbook for Remedial Programs (March 2010)
- NYSDEC DER-31 – Green Remediation (August 2010)
- NYSDEC DER-32 – Brownfield Cleanup Program Applications and Agreements (June 2017)
- NYSDEC TOGS 1.1.1 – Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (1998)
- NYSDEC TOGS 1.3.8 – New Discharges to Publicly Owned Treatment Works
- TOGS 2.1.2 – Underground Injection/Recirculation at Groundwater Remediation Sites
- NYSDEC TOGS 5.1.8 – New York State Stormwater Management Design Manual (2008)
- NYSDEC TOGS 5.1.10 – New York Standards and Specifications for Erosion and Sediment Controls (2005)
- NYSDOH – Guidance for Evaluating Soil Vapor Intrusions in the State of New York (2006) and Subsequent Updates
- NYSDOH Environmental Health Manual CSFP-530 – "Individual Water Supplies - Activated Carbon Treatment Systems"
- NYSDEC Permanent Closure of Petroleum Storage Tanks (2003)
- NYSDEC Spill Response Guidance Manual (1995)
- Technical and Administrative Guidance Memorandum 3028 – "Contained In" Criteria for Environmental Media: Soil Action Levels (August 1997)
- TOGS 1.1.1 – Ambient Water Quality Standards & Guidance Values and Groundwater Effluent Limitations (1998, Addenda 2000, 2004, and 2023)
- Title 10 of the Official Compilation of Codes, Rules and Regulations of the State of New York, Chapter 1, Part 5-1 – Drinking Water Supplies, Public Water Systems
- USEPA Title 40, Code of Federal Regulations

3.2 Alternative I – Technical Description

Alternative I, a Track 1 remedy, would include the following remedial elements:

- Development and implementation of a CHASP and CAMP for the protection of on-site workers, visitors, the community, and the environment including during remediation and construction

- To facilitate site remediation, demolition and removal of subsurface obstructions (e.g., remnant foundation elements) and the surficial building slab and asphalt and concrete gravel cover by the contractor and management of removed asphalt as C&D debris in accordance with 6 NYCRR Part 360 and 361 regulations Review and certification of C&D transport and disposal methodologies is not a requirement of the RE. The RE is responsible for documenting that C&D debris is not comingled with contaminated site soil and fill
- Collection of groundwater samples for groundwater treatability analysis and feasibility study and design of in-situ groundwater treatment system to address petroleum- and tar-impacted groundwater in the northern, northwestern, central, and eastern parts of the site
- Recovery of LNAPL via vacuum-enhanced fluid recovery (VEFR) at wells MW-002, MW-008, and MW-012
- Decommissioning of existing on-site groundwater monitoring wells in accordance with NYSDEC CP-43
- Implementation of soil erosion, pollution and sediment control measures in compliance with applicable laws and regulations
- Design and construction of support of excavation (SOE) systems to facilitate the Track 1 remedial excavation and to provide a barrier to the potential migration of petroleum- and CVOC-impacted soil vapor from remediation sites to the northwest, north, and northeast
- Removal of localized occurrence of benzene above the Part 375 UU SCO on the northern part of the site between 75 and 87 feet bgs via reverse circulation drilling
- Excavation and removal of about 48,400 cubic yards of non-native fill and soil exceeding the Part 375 UU SCOs, including contaminant sources (petroleum and tar) to minimum depths of about 15 to 24 feet bgs
- Screening for indications of contamination (by visual means, odor, and monitoring with a PID) of excavated material during intrusive site work
- Appropriate off-site disposal of excavated non-native fill and soil in accordance with federal, state, and local rules and regulations for handling, transport, and disposal
- Dewatering to reach remedial excavation depths, and treatment and discharge of dewatering fluids in accordance with applicable regulations and municipal permit requirements

- Decommissioning and removal of encountered USTs in accordance with 6 NYCRR Part 613 and NYSDEC DER-10 Section 5.5.
- Completion of in-situ groundwater treatment via chemical injections to address petroleum- and/or tar-related groundwater impacts on the northern, northwestern, central, and eastern parts of the site
- Collection and analysis of confirmation endpoint soil samples, including QA/QC samples, to verify that Track 1 UU SCOs are achieved at the base of the excavation and in the localized area on the northern part of the site in which benzene exceeded the UU SCOs between 75 and 87 feet bgs
- Import of clean fill (i.e., soil meeting UU SCOs as defined by 6 NYCRR Part 375-6.5), or virgin, native crushed stone to backfill remedial excavation areas to development depth
- Completion of a SVI evaluation, which will include a provision for implementing actions recommended to address exposures related to SVI, if indicated during the evaluation
- Installation of a groundwater monitoring wells in cellar of the new building for post-remediation groundwater monitoring and contingency treatment, if warranted

Green remediation principles and techniques, including a vapor barrier, would be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31.

The Alternative I remediation extent is shown on Figure 9 and the requirements for each of the Alternative I tasks are described below.

3.2.1 On-Site Worker, Public Health, and Environmental Protection

A site-specific CHASP would be implemented during remediation and excavation and foundation construction to protect on-site Langan personnel from accidents and acute and chronic exposures to the identified contaminated media. Contractors performing RAWP operations would be required to develop and enforce their own Health and Safety Plan (HASP) that is consistent with Occupational Safety and Health Administration (OSHA) requirements and, at a minimum, meets the requirements of the CHASP. Public health would be protected by implementing and enforcing dust, odor, and organic vapor control and monitoring procedures included in the CAMP. The CAMP would include continuous perimeter monitoring of dust and organic vapor using DustTrak aerosol monitors and PIDs capable of recording data and calculating 15-minute averages. Field personnel would monitor perimeters for visible dust and odors. The environment would be further protected by implementing and enforcing soil erosion prevention measures.

The CHASP is included in Appendix E. A site-specific CAMP was developed in accordance with the NYSDOH Generic CAMP, which includes special requirements if there are occupied structures within 20 feet, is provided as Appendix F.

3.2.2 Demolition and Removal of Existing Structures

As a pre-requisite to site remediation and following filing of a BCP Change of Use notification by the Volunteer, the former building was demolished by a demolition contractor under a New York City Department of Buildings (NYCDOB) demolition permit. The former building was abated of hazardous building materials (including asbestos-containing material [ACM], lead-based paint [LBP], and other universal waste) in accordance with New York City regulations and subject to New York City Department of Environmental Protection (NYCDEP) permitting and approval. Demolition and removal of subsurface obstructions (e.g., remnant foundation elements), the former building slab, and surficial asphalt and concrete gravel cover by the Contractor and management of the removed materials as C&D debris would be in accordance with 6 NYCRR Part 360 and 361 regulations prior to implementation of the proposed Track 1 remedy. Review and certification of C&D debris transport and disposal methodologies would be the responsibility of contractors performing off-site transportation and disposal of C&D debris. The RE is responsible for documenting that C&D debris is not commingled with contaminated site soil and fill.

3.2.3 Groundwater Treatability Analysis and Feasibility Study

Groundwater samples would be collected from on-site monitoring wells within the petroleum and tar-related source areas for a treatability analysis. Prior to sampling, the monitoring wells would be gauged for static water levels and each well would be purged. Purging would consist of pumping, at a minimum, the stabilized drawdown volume plus the pump tubing volume and waiting until the physical and chemical parameters (e.g., temperature, dissolved oxygen, oxygen reduction potential, turbidity) stabilize within the ranges specified in the USEPA's Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, dated July 30, 1996 and 4th revision September 19, 2017. Groundwater samples would be analyzed for Part 375 list and Target Compound List (TCL)/Target Analyte List (TAL) VOCs, SVOCs, and metals, total organic carbon (TOC), biochemical oxygen demand (BOD), chemical oxygen demand (COD), alkalinity, total and dissolved iron, total and dissolved manganese, sulfate, nitrate, and chloride. One soil boring may also be advanced for the collection of saturated soil and analysis for VOCs, SVOCs, TOC, BOD, COD, and TPH gasoline range organics (GRO).

Based on the results of previous investigations and the treatability analysis, a groundwater treatment feasibility study would be completed. The feasibility study would include a review of the site data, definition of the treatment zone, and a refinement of the remedial alternatives and

remediation rationale. The study would evaluate multiple alternatives, including chemical oxidation, air sparging, sorption, bioaugmentation, and bioremediation. The feasibility study would provide the criteria for selection of the most cost-effective alternative that meets the requirements for a Track 1 cleanup. The results of the treatability analyses and the findings and conclusions of the feasibility study would be summarized in a technical memorandum.

3.2.4 LNAPL Recovery

Multiple rounds of LNAPL recovery will be conducted at wells MW-002, MW-008, and MW-012 via VEFR. Prior to recovery, LNAPL thickness will be gauged in each well with an oil-water interface probe. A remediation contractor will provide a vacuum truck to apply suction at each well for a period of 20 to 45 minutes, depending on the volume of LNAPL removal. Following completion of each VEFR event, the volume of the product/groundwater mixture recovered from each well will be recorded for inclusion in the Final Engineering Report (FER). The residual LNAPL thickness, if any, will be recorded after completion of each event. LNAPL recovery events will occur on a monthly basis until LNAPL is no longer detected in the wells or remedial excavation commences.

3.2.5 Monitoring Well Decommissioning

The existing groundwater monitoring wells would be protected until completion of the groundwater treatability analysis and commencement of the remedial excavation. The wells would then be decommissioned in accordance with NYSDEC CP-43 Groundwater Monitoring Well Decommissioning Policy. If the full length of the well is to be excavated during remediation and/or development, well materials would be removed in conjunction with excavation. Well decommissioning would be performed by an experienced driller and logged by the driller and field personnel supervised by the RE. Decommissioning documentation would be provided in the FER.

3.2.6 Soil Erosion, Pollution, and Sediment Control Measures

A Stormwater Pollution Prevention Plan (SWPPP) would be prepared during the project design process and provided to NYSDEC when completed. Erosion and sediment controls for the site would be designed in conformance with requirements presented in the New York State Standards and Specifications for Erosion and Sediment Control. Best Management Practices (BMP) would be employed to mitigate erosion and prevent the migration of sediment off site throughout construction.

3.2.7 Support of Excavation

An SOE system would be constructed to accommodate removal of non-native fill and soil exceeding the UU SCOs. Remedial excavation along the site perimeter would extend below the

water table in some areas to a maximum depth of 24 feet bgs. The SOE system would also function as a barrier to the migration of potential petroleum- and CVOC-impacted soil vapor from remediation sites to the northwest, north, and northeast. The Contractor would install excavation support and bracing to permit excavation to the requisite remedial depth. SOE would consist of interlocking sheet piles or secant piles installed along the site perimeter, excavation sloping, and underpinning of structures adjacent to the site. Along the northern and eastern site perimeter, the SOE system would be installed to the minimum depth required to both accommodate remedial excavation and the minimum depth required to function as a barrier to soil vapor migration from off-site sources, which is the shallower of the shallowest clay layer or 20 feet bgs (i.e., about 15 feet below the floor slab of the new building).

3.2.8 Benzene Hotspot Removal

The benzene hotspot identified on the northern part of the site in boring SBD07 between 75 and 87 feet bgs will be removed via the reverse circulation drilling method. The technique is a modification of the mud rotary method by which compressed air is introduced into an advancing drill pipe and water is introduced into the borehole annulus. Soil cuttings are transferred to the surface up through the drill bit and drill pipe and into a storage vessel at the surface. A minimum of eight overlapping 48-inch-diameter boreholes will be advanced at and around the location of boring SBD07 to about 90 feet bgs. The soil cuttings, including the benzene-impacted soil, will be sampled for waste characterization parameters and disposed of off-site at a permitted disposal facility. Following removal of the benzene hotspot, a soil confirmation soil sample will be collected from 90 feet bgs from a soil boring advanced at the former location of boring SBD07 with a sonic drilling rig.

3.2.9 Non-Native Fill and Soil Removal

Fill material and soil exhibiting indications of petroleum and/or tar-related impacts was identified from surface grade to a depth of up to 22 feet bgs across the site and contains VOCs, SVOCs, metals, PCBs, and pesticides at concentrations above the UU SCOs. To achieve a Track 1 remedy, soil exceeding the UU SCOs, as defined by 6 NYCRR Part 375-6.8, would be excavated and disposed of off-site.

The estimated remedial excavation would extend to between about 15 and 24 feet bgs. The estimated volume of soil that would require off-site disposal is about 48,400 cubic yards. The estimate is based on the removal of soil/fill across the site to two feet below the deepest UU SCO exceedance identified in RI soil samples, the interface of non-native fill and native soil based on RI soil boring observations, and/or the maximum depth of observed impacts in RI and NAPL investigation borings. The proposed Track 1 excavation is presented on Figure 9.

C&D debris, with no observable contamination (e.g., petroleum), generated during the remedial excavation would be handled, transported, and disposed of in accordance with federal, state, and city regulations (including 6 NYCRR Part 360 Series regulations). Review and certification of regulated building materials and C&D debris transport and disposal methodologies would be the responsibility of contractors performing demolition and off-site transportation and disposal of C&D debris. The RE is responsible for documenting that C&D debris is not commingled with contaminated soil and fill.

3.2.10 Excavation Dewatering and Treatment

To achieve a Track 1 remedy, dewatering would be required to remove site fill/soil to about 10 to 24 feet bgs. Dewatering would also function as a method of contaminant mass removal (i.e., groundwater remediation) in conjunction with source removal. The dewatering and treatment system would be designed, operated, and maintained by the Contractor's New York State-licensed Professional Engineer (PE). Prior to dewatering, the Contractor and their PE would obtain applicable NYSDEC and/or NYCDEP permits, which may include an NYSDEC water withdrawal/Long Island well permit, an NYSDEC SPDES permit, and/or an NYCDEP sewer discharge permit.

Dewatering would consist of a site-wide well point system and include pretreatment (e.g., bag filters, carbon filtration, etc.) and sedimentation tanks to reduce contaminant concentrations below surface water effluent limitations prior to discharge to the municipal sewer system. The system will include an oil-water separator to remove residual LNAPL from the dewatering fluids. LNAPL removed from dewatered fluids would be containerized and removed for off-site disposal at a permitted disposal facility in accordance with applicable regulations. The dewatering and treatment system would be designed, operated and maintained by the Contractor's NYS-licensed PE. Discharge of water generated during remedial construction to surface waters (e.g., New York Harbor) is prohibited without a SPDES permit.

3.2.11 UST Removal

USTs and/or associated appurtenances encountered during the remedial or redevelopment excavation would be decommissioned, disposed of off-site, and registered with the NYSDEC PBS unit in accordance with 6 NYCRR Part 613.9, NYSDEC CP-51, and other applicable NYSDEC tank closure requirements including DER-10 Section 5.5. If encountered, petroleum-impacted soil would be excavated. Excavated petroleum-impacted soil would be stockpiled separately from non-petroleum-impacted soil, characterized, and disposed of off-site at a permitted disposal facility in accordance with applicable regulations. Because the site-wide remedial excavation would extend beyond expected UST depths, confirmation endpoint samples would not be collected from UST excavations.

3.2.12 In-Situ Groundwater Treatment

In-situ groundwater treatment would be conducted to treat petroleum- and/or tar-related VOC and SVOC impacts. Groundwater treatment would include injection of chemical reagents for treatment contaminants via chemical oxidation, sorption, sparging, and/or bioremediation, as determined by the treatability analysis and feasibility study. The in-situ groundwater treatment areas are shown on Figure 9. Design plans, including treatment area and dosage calculations, would be provided in the technical memorandum prepared after the feasibility study is completed. Post-remediation groundwater samples would be collected from within the treatment area to confirm achievement of groundwater RAOs.

3.2.13 Confirmation Soil Sampling

Confirmation soil samples would be collected from the remedial excavation base at a frequency of one per 900 square feet and from excavation sidewalls at a frequency of one per 30 linear feet per NYSDEC DER-10. Sidewall samples would be collected from the vertical midpoint of any excavation sidewall that is not obstructed by SOE measures (e.g., sheeting and underpinning) preclude access to soil sidewalls. Approximately 110 confirmation endpoint soil samples, including QA/QC samples, would be collected to confirm remedial performance and would be analyzed for the Part 375 list of VOCs, SVOCs, PCBs, pesticides, metals (including hexavalent and trivalent chromium), PFAS, and 1,4-dioxane. Confirmation endpoint samples would be collected at the base of remedial excavations at depths ranging from approximately 10 to 24 feet bgs. Over-excavation may be required as necessary to remove soil found to contain contamination exceeding the UU SCOs. If over-excavation is completed, additional confirmation samples would be required.

3.2.14 Excavation Backfill

In areas that are excavated deeper than development grade for remedial purposes, the excavation areas would be backfilled to raise the site to development grade. Backfill would consist of soil/fill meeting the UU SCOs or other acceptable soil/fill such as crushed virgin stone from a NYSDEC permitted mine or quarry. All imported soil/fill must be sourced from appropriately licensed facilities with no history of environmental contamination. If sampling of the proposed soil/fill is required, qualified environmental personnel would collect representative samples at a frequency consistent with DER-10. The samples would be analyzed for 6 NYCRR Part 375 VOCs, SVOCs, pesticides, herbicides, PCBs, metals, and emerging contaminants, including PFAS, and 1,4-dioxane, by an NYSDOH ELAP-certified laboratory. No sampling of virgin quarry stone is anticipated unless the quarry stone contains fines in excess of 10% by weight passing through a No. 80 sieve. Documentation of the source of backfill must be provided to the NYSDEC for approval before it is imported and used on site. Upon meeting these criteria, the

certified clean fill would be transported to the site and segregated from impacted soil/fill, as necessary, on plastic sheeting until used as backfill.

An estimated 47,500 cubic yards of backfill, which assumes about 15% compaction, would be required to raise the site to development grade upon completion of the Track 1 remediation. Backfill would comply with 6 NYCRR Part 375-6.7(d) and NYSDEC DER-10 Section 5.4(e), Table 5.4(e), and Appendix 5.

3.2.15 SVI Evaluation

Langan will evaluate the site for potential SVI, based on soil vapor data obtained during the RI, the status of the remedy (i.e., the potential presence of remaining contaminant sources), and the depth and configuration of the new building foundation. No new soil vapor or indoor air samples will be collected, unless a potential new source of impacted soil vapor is identified during implementation of the RAWP, which would be summarized in the SVI evaluation at the completion of the remedy. The findings of the SVI evaluation will be presented in the FER. The findings will include a provision for implementing actions recommended to address SVI if the evaluation identifies new evidence of SVI that differs from the findings of the RI. Following the removal of contaminant sources and all soil exceeding UU SCOs and the remediation of residual groundwater impacts, soil vapor mitigation will not likely be required. If the SVI evaluation indicates that mitigation or monitoring action is warranted, a Track 1 cleanup will only be achieved if the mitigation system or other required action is no longer needed within five years of the date of the Certificate of Completion.

3.2.16 Groundwater Monitoring Well Installation/Post-Remediation Groundwater Monitoring

Following in-situ groundwater treatment, five groundwater monitoring wells will be installed in the cellar of the new building within the footprint of the three groundwater treatment areas. The monitoring wells will be sampled for analysis for VOCs and SVOCs for eight quarterly monitoring events to document the efficacy of the groundwater treatment. If additional treatment measures are required, a Remedial Design would be prepared and submitted to the NYSDEC and NYSDOH for review and approval. Depending on the concentrations remaining in site groundwater, remedial measures may include in-situ remedial measures (e.g., chemical oxidation, activated carbon, bioremediation). The Remedial Design would detail the groundwater treatment program including the pre-design investigation and subsequent treatment plan. Any post-remediation groundwater treatment would attain the groundwater RAOs within five years of the COC. The proposed post-remediation well locations are shown on Figure 9.

3.3 Alternative II – Technical Description

Alternative II, a Track 4 remedy, would include the following remedial elements:

- Development and implementation of a CHASP and CAMP for the protection of on-site workers, visitors, the community, and the environment including during remediation and construction
- To facilitate site remediation, demolition and removal of subsurface obstructions (e.g., remnant foundation elements) and the surficial building slab and asphalt and concrete gravel cover by the contractor and management of removed C&D debris in accordance with 6 NYCRR Part 360 and 361 regulations. Review and certification of C&D transport and disposal methodologies is not a requirement of the RE. The RE is responsible for documenting that C&D debris is not comingled with contaminated site soil and fill
- Collection of groundwater samples for groundwater treatability analysis and feasibility study and design of in-situ groundwater treatment system to address petroleum- and tar-impacted groundwater in the northern, northwestern, central, and eastern parts of the site
- Recovery of LNAPL via VEFR at wells MW-002, MW-008, and MW-012
- Decommissioning of existing on-site groundwater monitoring wells in accordance with NYSDEC CP-43
- Implementation of soil erosion, pollution and sediment control measures in compliance with applicable laws and regulations
- Design and construction of SOE systems to facilitate the Track 4 remedial excavation
- Excavation and removal of about 13,100 cubic yards of non-native fill and soil to depths between 1 foot bgs and about 16 feet bgs, including the following areas:
    - Site-wide remedial excavation to about 1 foot bgs for removal of non-native fill exceeding the RUI SCOs
    - Excavation to depths between about 4 and 16 feet bgs in the northern, northwestern, eastern, and central parts of the site to remove soil with petroleum and tar-like impacts (i.e., based on analytical data and nuisance conditions) and remove soil from the northern, northwestern, central, and eastern contaminant source areas above the groundwater table with target VOCs and/or SVOCs above the PGW SCOs (i.e., 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, 2-butanone, naphthalene, n-propylbenzene, toluene, total xylenes, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, indeno[1,2,3-cd]pyrene, and phenol).
- Screening for indications of contamination (by visual means, odor, and monitoring with a PID) of excavated material during intrusive site work

- Appropriate off-site disposal of excavated non-native fill and soil in accordance with federal, state, and local rules and regulations for handling, transport, and disposal
- Dewatering to reach remedial excavation depths, and treatment and discharge of dewatering fluids in accordance with applicable regulations and municipal permit requirements
- Decommissioning and removal of any encountered USTs in accordance with 6 NYCRR Part 613 and NYSDEC DER-10 Section 5.5
- Completion of in-situ groundwater treatment via chemical injections to address petroleum- and/or tar-related groundwater impacts on the northern, northwestern, central, and eastern parts of the site
- Collection and analysis of documentation soil samples, including QA/QC samples, in accordance with DER-10 at base of the remedial excavation
- Import of fill clean fill (i.e., soil meeting the lower of Part 375 RUI and PGW SCOs as defined by 6 NYCRR Part 375-6.5, or virgin, native crushed stone to backfill remedial excavations and facilitate EC installation
- Installation and operation of an active SMD system in portions of the site that are not occupied by a mechanically-ventilated parking garage and installation of a vapor barrier membrane beneath the building slab and around the sub-grade portions of the foundation walls to mitigate against potential vapor intrusion
- Installation of a site cover system consisting of a concrete building foundation slab and underlying vapor barrier membrane system to prevent future exposure to remaining contaminated soil
- Installation of a groundwater monitoring wells in cellar of the new building for post-remediation groundwater monitoring and contingency treatment, if warranted
- Completion of an SVI evaluation after the new building is constructed
- Establishment of use restrictions (i.e., institutional controls [IC]) including prohibitions on the use of groundwater from the site and prohibitions on sensitive site uses, such as farming or vegetable gardening in remaining site soil, to prevent future exposure to remaining contamination
- Recording of an EE referencing ECs and ICs to prevent future exposure to remaining contamination

- Publication of an SMP for long-term management of remaining contamination as required by the EE, including plans for: 1) IC/EC implementation, 2) monitoring, 3) operation and maintenance, and 4) reporting
- Post-remediation groundwater monitoring of groundwater monitoring wells installed following completion of the remedial excavation for a minimum of eight quarters

Green remediation principles and techniques, including a vapor barrier, would be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31.

The Track 4 SCOs are presented in Table 5. The Alternative II remediation extent is shown on Figure 10 and the requirements for each of the Alternative II tasks are described below.

3.3.1 On-Site Worker, Public Health, and Environmental Protection

A site-specific CHASP would be implemented during remediation and excavation and foundation construction to protect on-site Langan personnel from accidents and acute and chronic exposures to the identified contaminated media. Contractors performing RAWP operations would be required to develop and enforce their own HASP that is consistent with OSHA requirements and, at a minimum, meets the requirements of the CHASP. Public health would be protected by implementing and enforcing dust, odor, and organic vapor control and monitoring procedures included in the CAMP. The CAMP would include continuous perimeter monitoring of dust and organic vapor using DustTrak aerosol monitors and PIDs capable of recording data and calculating 15-minute averages. Field personnel would monitor perimeters for visible dust and odors. The environment would be further protected by implementing and enforcing soil erosion prevention measures.

The CHASP is included in Appendix E. A site-specific CAMP was developed in accordance with the NYSDOH Generic CAMP, which includes special requirements if there are occupied structures within 20 feet, is provided as Appendix F.

3.3.2 Demolition and Removal of Existing Structures

As a pre-requisite to site remediation and following filing of a BCP Change of Use notification by the Volunteer, the former building was demolished by a demolition contractor under an NYCDOB demolition permit. The former building was abated of hazardous building materials (including ACM, LBP, and other universal waste) in accordance with New York City regulations and subject to NYCDEP permitting and approval. Demolition and removal of subsurface obstructions (e.g., remnant foundation elements), the former building slab, and surficial asphalt and concrete gravel cover by the Contractor and management of the removed materials as C&D debris would be in accordance with 6 NYCRR Part 360 and 361 regulations prior to implementation of the proposed

Track 1 remedy. Review and certification of C&D debris transport and disposal methodologies would be the responsibility of contractors performing off-site transportation and disposal of C&D debris. The RE is responsible for documenting that C&D debris is not commingled with contaminated site soil and fill.

3.3.3 Groundwater Treatability Analysis and Feasibility Study

Groundwater samples would be collected from on-site monitoring wells within the petroleum and tar-related source areas for a treatability analysis. Prior to sampling, the monitoring wells would be gauged for static water levels and each well would be purged. Purging would consist of pumping, at a minimum, the stabilized drawdown volume plus the pump tubing volume and waiting until the physical and chemical parameters (e.g., temperature, dissolved oxygen, oxygen reduction potential, turbidity) stabilize within the ranges specified in the USEPA's Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, dated July 30, 1996 and 4th revision September 19, 2017. Groundwater samples would be analyzed for Part 375 list and TCL/TAL VOCs, SVOCs, and metals, TOC, BOD, COD, alkalinity, total and dissolved iron, total and dissolved manganese, sulfate, nitrate, and chloride. One soil boring may also be advanced for the collection of saturated soil and analysis for VOCs, SVOCs, TOC, BOD, COD, and TPH-GRO.

Based on the results of previous investigations and the treatability analysis, a groundwater treatment feasibility study would be completed. The feasibility study would include a review of the site data, definition of the treatment zone, and a refinement of the remedial alternatives and remediation rationale. The study would evaluate multiple alternatives, including chemical oxidation, air sparging, sorption, bioaugmentation, and bioremediation. The feasibility study would provide the criteria for selection of the most cost-effective alternative that meets the requirements for a Track 4 cleanup. The results of the treatability analyses and the findings and conclusions of the feasibility study would be summarized in a technical memorandum.

3.3.4 LNAPL Recovery

Multiple rounds of LNAPL recovery will be conducted at wells MW-002, MW-008, and MW-012 via VEFR. Prior to recovery, LNAPL thickness will be gauged in each well with an oil-water interface probe. A remediation contractor will provide a vacuum truck to apply suction at each well for a period of 20 to 45 minutes, depending on the volume of LNAPL removal. Following completion of each VEFR event, the volume of the product/groundwater mixture recovered from each well will be recorded for inclusion in the FER. The residual LNAPL thickness, if any, will be recorded after completion of each event. LNAPL recovery events will occur on a monthly basis until LNAPL is no longer detected in the wells or remedial excavation commences.

3.3.5 Monitoring Well Decommissioning

The existing groundwater monitoring wells would be protected until completion of the groundwater treatability analysis and commencement of the remedial excavation. The wells would then be decommissioned in accordance with NYSDEC CP-43 Groundwater Monitoring Well Decommissioning Policy. If the full length of the well is to be excavated during remediation and/or development, well materials would be removed in conjunction with excavation. Well decommissioning would be performed by an experienced driller and logged by the driller and field personnel supervised by the RE. Decommissioning documentation would be provided in the FER.

3.3.6 Soil Erosion, Pollution, and Sediment Control Measures

A SWPPP would be prepared during the project design process and provided to NYSDEC when completed. Erosion and sediment controls for the site would be designed in conformance with requirements presented in the New York State Standards and Specifications for Erosion and Sediment Control. BMPs would be employed to mitigate erosion and prevent the migration of sediment off site throughout construction.

3.3.7 Support of Excavation

An SOE system would be constructed to accommodate removal of non-native fill and soil required for the attainment of RAOs under a Track 4 cleanup. Remedial excavation along the site perimeter would extend below the water table in some areas to an estimated maximum depth of 16 feet bgs. The Contractor would install excavation support and bracing to permit excavation to the requisite remedial depth. The SOE required under Track 4 will consist of cantilevered sheet piles at locations where the remedial excavation extends below groundwater (i.e., the northwestern, northern, and eastern parts of the site) and sloping in other areas.

3.3.8 Non-Native Fill and Soil Removal

To achieve a Track 4 remedy, contaminated soil would be excavated and disposed of off-site to remove source soil/fill and install ECs. Remedial excavation areas are shown in Figure 10 and summarized as follows:

- Site-wide excavation would extend to about 1 foot bgs for removal of non-native fill and soil exceeding the Part 375 RUI SCOs
- Excavation to depths of about 4 and 6 feet bgs and removal of soil with petroleum- and/or tar-like impacts (i.e., based on analytical data and nuisance conditions) at three locations in the northern and eastern parts of the site
- Excavation to depths between about 8 and 16 feet bgs in the northern, northwestern, eastern, and central parts of the site to remove soil with petroleum

and tar-like impacts (i.e., based on analytical data and nuisance conditions) , including tar-like product, and remove soil from contaminant source areas above the groundwater table with target VOCs and/or SVOCs above the PGW SCOs (i.e., 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, 2-butanone, naphthalene, n-propylbenzene, toluene, total xylenes, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, indeno[1,2,3-cd]pyrene, and phenol). Source area excavations with evidence of free-phase tar-like or petroleum product include:

- Excavation to depths between about 8.5 to 11.5 feet bgs (el. 2 to el. -1) in an approximately 10,500-square-foot area within the footprint of the former building on the eastern part of the site
- Excavation to depths between about 8 and 16 feet bgs (el. 5 to -1) in an approximately 13,500-square-foot asphalt- and concrete gravel-paved area in the northwestern and central parts of the site
- Excavation to about 9 feet bgs (el. 2) in an approximately 2,250-square-foot asphalt- and concrete gravel-paved area in the northern part of the site

If additional grossly contaminated soil is identified, as defined in NYSDEC Part 375-1.2(u), remedial over-excavation would be performed to contaminant source material, to the extent practical. Over-excavation would not extend below the depth of groundwater (i.e., between about el. 0.10 [9.40 feet bgs] and el. 2.49 [7.40 feet bgs]) or undermine adjoining sidewalks or structures. Soil/fill exhibiting characteristics of contaminant source material encountered during remedial excavation would be excavated to the extent practical and disposed of off-site. The estimated volume of non-native fill and soil requiring removal and off-site disposal for a Track 4 remedy is about 13,100 cubic yards. The extents of the estimated Track 4 remedial excavation are shown on Figure 10.

3.3.9 Excavation Dewatering and Treatment

To achieve a Track 4 remedy, dewatering would be required to remove petroleum and tar-like material source areas on the northwestern, northern, and eastern parts of the site to depths between about 8 and 16 feet bgs. Dewatering would also function as a method of contaminant mass removal (i.e., groundwater remediation) in conjunction with source removal. The dewatering and treatment system would be designed, operated, and maintained by the Contractor's New York State-licensed PE. Prior to dewatering, the Contractor and their PE would obtain applicable NYSDEC and/or NYCDEP permits, which may include an NYSDEC water withdrawal/Long Island well permit, an NYSDEC SPDES permit, and/or an NYCDEP sewer discharge permit.

The dewatering system will include pretreatment (e.g., oil-water separator, bag filters, carbon filtration, etc.) to reduce contaminant concentrations below surface water effluent limitations prior to discharge to the municipal sewer system. The system will include an oil-water separator to remove residual LNAPL from the dewatering fluids. LNAPL removed from dewatered fluids would be containerized and removed for off-site disposal at a permitted disposal facility in accordance with applicable regulations. The dewatering and treatment system would be designed, operated and maintained by the Contractor's NYS-licensed PE. Discharge of water generated during remedial construction to surface waters (e.g., New York Harbor) is prohibited without a SPDES permit.

3.3.10 UST Removal

USTs and/or associated appurtenances encountered during remedial or redevelopment excavation would be decommissioned, disposed of off-site, and registered with the NYSDEC PBS unit in accordance with 6 NYCRR Part 613.9, NYSDEC CP-51, and other applicable NYSDEC tank closure requirements including DER-10 Section 5.5. If encountered, petroleum-impacted soil would be excavated. Excavated petroleum-impacted soil would be stockpiled separately from non-petroleum-impacted soil, characterized, and disposed of off-site at a permitted disposal facility in accordance with applicable regulations. Because the site-wide remedial excavation would extend beyond expected UST depths, confirmation endpoint samples would not be collected from UST excavations.

3.3.11 In-Situ Groundwater Treatment

In-situ groundwater treatment would be conducted to treat petroleum- and/or tar-related VOC and SVOC impacts. Groundwater treatment would include injection of chemical reagents for treatment contaminants via chemical oxidation, sorption, sparging, and/or bioremediation, as determined by the treatability analysis and feasibility study. The treatment would primarily occur in the three areas from which tar-related and/or petroleum free-phase product was identified and would target saturated soil and groundwater from below the bottom of the remedial excavation to the vertical extent of grossly contaminated material. Design plans, including treatment area and dosage calculations, would be provided in the technical memorandum prepared after the feasibility study is completed. Post-remediation groundwater samples would be collected from within the treatment area to confirm achievement of groundwater RAOs. The in-situ groundwater treatment areas are shown on Figure 10.

3.3.12 Documentation Soil Sampling

Considering the expansive size of the site, post-excavation documentation endpoint samples would be collected at a reduced frequency in accordance with NYSDEC DER-10 5.4 (b)(5)(iii). Endpoint samples would be collected from the base of the excavation at a frequency of one

sample per 2,000 square feet and one sidewall sample per 50 linear feet. Bottom and sidewall sample locations would be biased towards hotspot over-excavations targeting petroleum- and tar-related source material. Sidewall samples would be collected from hotspot excavations where not prevented by SOE measures (i.e., sheet piles or lagging). It is anticipated that 86 post-excavation documentation endpoint soil samples, plus QA/QC samples, would be collected to document remedial performance. No sidewall documentation samples are expected, because sidewalls will generally be obstructed by SOE elements. Vertical sidewall samples would be collected if the contractor slopes down to the petroleum source removal areas at a slope greater than 1:1. Collection of the sidewall samples would be determined in the field, communicated to NYSDEC via daily field reports, and would follow the above sampling frequency. Documentation endpoint samples would be analyzed for the Part 375 list of VOCs, SVOCs, PCBs, pesticides, metals (including hexavalent and trivalent chromium), PFAS, and 1,4-dioxane. Documentation endpoint samples would be collected from depths between about 1 and 16 feet bgs. The proposed documentation sample locations are shown on Figure 11.

3.3.13 Excavation Backfill

Import of fill would be required to backfill remedial excavations. An estimated 6,900 cubic yards of backfill, which assumes about 15% compaction, would be required to raise the site to development grade upon completion of the Track 4 remedial excavation. Backfill would comply with 6 NYCRR Part 375-6.7(d) and NYSDEC DER-10 Section 5.4(e), Table 5.4(e), and Appendix 5. Requests for import of fill are subject to NYSDEC review and approval and would include a Request to Import/Reuse Soil Form.

Backfill would consist of imported soil/fill meeting the lower of RUI and PGW SCOs, recycled concrete aggregate (RCA), and/or crushed virgin stone from a mine or quarry. The fill would be segregated at a source/facility that is free of environmental contaminants. If sampling of the proposed fill is required, qualified environmental personnel would collect representative samples at a frequency consistent with DER 10. The samples would be analyzed for 6 NYCRR Part 375 VOCs, SVOCs, pesticides, herbicides, PCBs, metals, and PFAS by a NYSDOH ELAP-certified laboratory. Upon meeting these criteria, the fill would be transported to the site and segregated from impacted soil/fill, as necessary, on plastic sheeting until used as backfill. RCA imported to the site must be derived from recognizable and uncontaminated concrete and can only be used as backfill above the groundwater table. RCA is not acceptable for and would not be used as cover or drainage material. RCA must originate from a NYSDEC-permitted or registered facility and contain less than 10% by weight passing a No. 80 sieve to be excluded from NYSDEC DER-10 sampling requirements. Virgin stone must originate from a permitted mine or quarry and contain less than 10% by weight passing a No. 80 sieve to be excluded from NYSDEC DER-10 sampling requirements.

3.3.14 Soil Vapor Mitigation System

To mitigate potential SVI, an SMD system would be designed and installed beneath portions of the new building slab that do not include the mechanically-ventilated parking garage. The SMD system would be installed below mechanical storage spaces within the cellar and below the concrete slab-on-grade portions of the ground floor. The SMD system would not be installed below the mechanically-ventilated parking garage because NYCDOB Mechanical Code requires sufficient air exchanges that prevent accumulation of vapors in garages. The SMD system would not be installed in building areas that extend to the groundwater table or beneath the mechanically ventilated parking garage. The SMD system would consist of a sub-membrane collection layer (e.g., 8-inch layer of ¾-inch clean quarry stone) with horizontal perforated collection pipes that underlie a continuous vapor barrier.

Riser pipes would be installed to convey the collected vapor to the building roof, and vacuum blower(s) would maintain a constant negative pressure through the piping and collection layer. Prior to initial startup of the SMD system, the system would be inspected to confirm that all components are in place. After startup of the vacuum blowers, a pressure field extension test would be conducted to verify existence of sufficient vacuum under the slab.

The continuous vapor barrier membrane would extend from beneath the lowest level slab and vertically along the walls of the cellar portions of the structure to surface grade level. The vapor barrier membrane would be resistant to petroleum- and CVOC-related contaminants, have a minimum thickness of 20 mils and would be installed as a continuous sub-slab membrane. The extents of the SMD system, vapor barrier, and mechanically-ventilated parking garage are shown on Figure 13.

3.3.15 Site Cover System

A site cover system consisting of a concrete building foundation slab would be installed. The site cover system beneath the new building would consist of a continuous concrete building slab underlain by a continuous vapor barrier membrane. The site cover system would serve as an EC for the protection of human health by preventing contact with residual soil and groundwater. Additionally, to incorporate NYSDEC green remediation principles and techniques to the extent feasible in the development at this Site, the building will include as an element of construction a minimum 20-mil vapor barrier membrane below the foundation slab and around the sub-grade portions of the foundation walls, which may improve energy efficiency. A site cover system plan is shown on Figure 12.

3.3.16 Groundwater Monitoring Well Installation/Post-Remediation Groundwater Monitoring

Following in-situ groundwater treatment, five groundwater monitoring wells will be installed in the cellar of the new building within the footprint of the three groundwater treatment areas. The

monitoring wells will be sampled for analysis of VOCs and SVOCs for eight quarterly monitoring events to document the efficacy of the groundwater treatment. If additional treatment measures are required, a Remedial Design would be prepared and submitted to the NYSDEC and NYSDOH for review and approval. Depending on the concentrations remaining in site groundwater, remedial measures may include in-situ remedial measures (e.g., chemical oxidation, activated carbon, bioremediation). The Remedial Design would detail the groundwater treatment program including the pre-design investigation and subsequent treatment plan. The proposed post-remediation well locations are shown on Figure 10.

3.3.17 SVI Evaluation

Remediation and development construction (i.e., removal of contaminated soil/fill, construction of a concrete foundation, installation of an SMD system with a vapor barrier membrane, and commissioning of cellar mechanical ventilation) would mitigate the potential for SVI. Langan will evaluate the site for potential SVI after completion of the aforementioned remedial elements, based on soil vapor data obtained during the RI, the status of the remedy (i.e., the potential presence of remaining contaminant sources), and the depth and configuration of the new building foundation. The SVI evaluation would include documentation of the installation of the above remediation and mitigation measures, and a post-remediation reconnaissance to document site conditions. No new soil vapor or indoor air samples will be collected, unless a potential new source of impacted soil vapor is identified during implementation of the RAWP, which would be summarized in the SVI evaluation at the completion of the remedy. The findings of the SVI evaluation will be presented in the FER

3.3.18 Engineering and Institutional Controls

An EE would be recorded referencing ICs and ECs that are part of the selected remedy, which would be binding upon all subsequent owners and occupants of the site. The ICs would restrict the site's use to industrial uses and require implementation of an SMP. The ECs would include a site cover system and SMD system(s). The SMP would identify all use restrictions, long-term monitoring, maintenance, and certification requirements.

3.4 Green Remediation Program

The green and sustainable remediation (GSR) components that would be considered for the selected alternative are as follows:

- Environmental impacts of treatment technologies and remedy stewardship over the long term
- Reducing direct and indirect greenhouse gasses (GHG) and other emissions
- Increasing energy efficiency and minimizing use of non-renewable energy

- Conserving and efficiently managing resources and materials
- Reducing waste, increasing recycling, and increasing reuse of materials that would otherwise be considered a waste
- Maximizing habitat value and creating habitat when possible, including maximizing the planning of trees, shrubs, and other carbon dioxide sinks in redevelopment
- Fostering green and healthy communities and working landscapes which balance ecological, economic, and social goals
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development with respect to the remedy
- Incorporating the GSR principles and techniques to the extent feasible in the future development at this site (i.e., future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York [or most recent edition] to improve energy efficiency as an element of construction)

To evaluate the remedy with respect to GSR principles as part of the remedial program, a BMP assessment was conducted in accordance with the ASTM Guide for Standard Cleanups, and an environmental footprint analysis was conducted for each remedial alternative using SiteWise™. The results of the environmental footprint analysis are provided in Appendix G.

BMPs for the project related to these GSR metrics, and BMPs for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, would be incorporated into the remedial program, as appropriate. The project design specifications would include detailed requirements, including implementation of the BMPs described in Section 4.1.1. A BMP assessment and an environmental footprint analysis would also be conducted at the completion of the remedy. As practicable, water consumption, GHG emissions, renewable and non-renewable energy use, waste reduction, and material use would be estimated at the end of the remediation phase. Progress with respect to GSR metrics would be tracked during implementation of the remedial action and reported in the FER.

A climate screening assessment was conducted for the site and concluded that the site is vulnerable to severe storms, flooding, and sea level rise; however, the proposed redevelopment would reduce these vulnerabilities and mitigate the effects of climate change at the site. The climate screening checklist is provided in Appendix H.

3.5 Evaluation of Remedial Alternatives

The following is an evaluation of the proposed remedy based on the NYSDEC BCP remedy evaluation criteria listed below. The first two criteria are considered "threshold" criteria and must be satisfied for an alternative to qualify as a selection. The remaining criteria are considered

"balancing" criteria, which are used to compare the advantages and disadvantages of each alternative. A remedial alternative must satisfy the threshold criteria before qualifying for further evaluation under the balancing criteria.

1. Protection of human health and the environment
2. Compliance with SCGs
3. Short-term effectiveness and impacts
4. Long-term effectiveness and permanence
5. Reduction of toxicity, mobility, or volume of contaminated media
6. Implementability
7. Cost effectiveness
8. Community Acceptance
9. Green and sustainable remediation (including climate resiliency)
10. Land use

3.5.1 Protection of Public Health and the Environment

Alternative I – The track 1 remedy would mitigate exposure pathways from on-site contaminated media by removing all soil that exceeds the Track 1 UU SCOs. Contaminant concentrations in groundwater would be reduced through removal of contaminated soil and dewatering through the remedial phase, mass contaminant removal through VEFR events and in-situ groundwater treatment, and post-remediation sampling to evaluate petroleum-related VOCs and SVOCs in groundwater. Groundwater in New York City is not used as a potable water source. Soil vapor would be remediated through the removal of all contaminated soil and groundwater and the remediation of residual contaminants in groundwater. This remedy would effectively achieve the RAOs for public health and environmental protection by eliminating the possibility for ingestion, inhalation, or dermal contact.

Alternative II – The Track 4 remedy would mitigate the potential for complete exposure pathways through: (i) the removal of soil/fill exceeding the Track 4 RUI SCOs and petroleum- and tar-related contaminant source areas; (ii) the in-situ treatment of contaminated groundwater and VEFR; (iii) the prevention of exposure to contaminated soil left in place with a site cover system; and (iv) SVI mitigation via operation of a mechanically-ventilated parking garage, installation of an SMD system in areas not occupied by the parking garage, and installation of a continuous vapor barrier membrane. Residual contaminants may remain in some areas, though contaminant source areas would be addressed. The RAOs for public health and environmental protection would be met through the removal, treatment, and capping of contaminated soil—which would eliminate the

possibility for ingestion, inhalation, or dermal contact. Groundwater in New York City is not used as a potable water source. An IC restricting groundwater use would prevent ingestion of groundwater, and an IC requiring the maintenance of ECs (i.e., the site cover system and SMD system) and quarterly groundwater monitoring would prevent exposure to residual contaminated soil vapor.

Public health would be protected during remediation under all remedial alternatives by implementing the CAMP during intrusive site work and enforcing dust, odor, and organic vapor control. The environment would be protected by implementing and enforcing soil erosion and sediment controls as needed.

3.5.2 Compliance with Standards, Criteria, and Guidance

Both remedial alternatives would comply with standards, criteria, and guidance that involve protection of human health and the environment by implementing and enforcing a site-specific CHASP and CAMP during the remedy. The Federal OSHA requirements for on-site construction safety would be followed by site contractors performing work under Alternatives I or II. Both Alternatives would comply with the GSR requirements in DER-31.

3.5.3 Short-Term Effectiveness and Impacts

Alternative I – The most significant, short-term adverse impacts and risks to the community would be the potential impositions on roadway and pedestrian traffic associated with the remedial excavation, construction of the SOE, and the import of material to backfill the site to development sub-grade. Increased truck traffic and operational noise levels would be necessary to haul the excavated impacted material to achieve Track 1 standards, and haul in backfill required to bring the site to construction grade. Installation of SOE to allow for excavation to depths of up to 24 feet bgs along the site perimeter would require the import of additional steel and construction materials. The operation is estimated to require about 3,836 25-cubic-yard capacity truck trips to haul soil for disposal and backfill. Truck traffic would be routed on the most direct course using major thoroughfares where possible, and flaggers would be used to protect pedestrians at site entrances and exits. Waiting times associated with analysis of confirmation sampling and resampling may delay construction, leaving soil exposed for a longer time resulting in a potential increase in dust, odors, and/or organic vapor from the excavation and construction-related noise. The effects of these potential adverse impacts to the community, workers, and the environment would be minimized by implementing the respective control plans.

Alternative II – Limiting the required excavation depths based on Track 4 standards and objectives would significantly reduce the duration of the excavation and backfilling and associated risks. The operation is estimated to require 800 25-cubic-yard capacity truck trips to haul soil for disposal and backfill; about 79% fewer trips than that required for Alternative I. The Track 4 remedy would

also require fewer materials for SOE, use less fossil fuel and natural resources, and produce fewer carbon emissions to the atmosphere. Excavation activities would have a shorter duration compared to Alternative I, reducing potential exposure to dust, odors, and organic vapor from the excavation and construction-related noise. This alternative, however, leaves contaminated soil in place and would require implementation of ECs and ICs.

Under both remedial alternatives, dust would be controlled by the on-site application of water spray as needed. Controls, such as slowing the pace of work, applying foam and/or dust suppressant, and/or covering parts of the excavation would be used to suppress odors/dust when required. Work would be modified or stopped according to the action levels defined in the CAMP.

3.5.4 Long-Term Effectiveness and Impacts

Alternative I – The Track 1 remedy would eliminate the potential exposure pathways by removal of contaminated media exceeding the UU SCOs through excavation, dewatering, in-situ groundwater treatment, and LNAPL recovery. Post-remediation groundwater sampling would evaluate petroleum contaminants in groundwater and any residual impacted groundwater would need to be remediated with five years of the COC. The remedy would also eliminate sources VOC-impacted soil vapor. Long-term remediation commitments (i.e., more than five years after the COC) would not be required. An SMP and EE would not be required.

Alternative II – The Track 4 remedy would mitigate the potential for complete exposure pathways through the removal of soil/fill exceeding the Track 4 RUI SCOs within the upper 1 feet of soil across the site and the removal of metals-, petroleum- and tar-impacted soil extending to 16 feet bgs in the northwestern, northern, central, and eastern parts of the site. The remedy would include dewatering, in-situ groundwater treatment, LNAPL recovery, and the installation of ECs, including an impermeable site cover and an active SMD system. Potential exposure pathways to residual contaminated soil, fill, and groundwater would be mitigated with ECs and ICs. Groundwater in New York City is not used as a potable water source. Under the Track 4 cleanup, soil conditions would be documented and surveyed, and the long-term effectiveness and permanence of this alternative would be achieved through the implementation of the SMP for long-term management of EC/ICs. The SMP would provide long-term effectiveness of EC/ICs by requiring periodic inspection and certification that these controls and restrictions continue to be in place and are functioning as they were intended. The inspection and certification would address that the protections designed into the remedy continue to provide the required level of protection.

3.5.5 Reduction of Toxicity, Mobility, or Volume of Contaminated Soil/Fill

Alternative I – The Track 1 remedy would permanently and entirely reduce the toxicity, mobility, and volume of contamination through excavation and off-site disposal of soil exceeding the Track

1 UU SCOs. Contaminant concentrations in groundwater would be reduced through source (i.e., LNAPL) removal, dewatering required to attain UU SCOs, and in-situ treatment.

Alternative II – The Track 4 remedy would reduce the toxicity, mobility, and volume of contaminated material by removing petroleum- and tar-impacted source soil/fill, and SVOC-and metals-impacted soil with concentrations above the Track 4 RUI SCOs within the upper 2 feet. Contaminant concentrations in groundwater would be reduced through source (i.e., LNAPL) removal, localized dewatering for the remedial excavation, and in-situ treatment. Remaining groundwater contamination would continue to be monitored and reduced as needed via subsequent treatment. Exposure to remaining contamination would be prevented by ECs, including a site cover system and SMD system. Potential off-site migration of impacted groundwater from on-site sources would be addressed by remediation of impacted source material on the northwestern, northern, central, and eastern parts of the site, LNAPL removal, and in-situ treatment of residual impacted groundwater. Potential exposure pathways from off-site petroleum- and/or CVOC-impacted soil vapor would be mitigated by the operation of a mechanically-ventilated parking garage and the installation of an active SMD system as an EC. A continuous vapor barrier would also be installed around the sub-grade portions of the foundation slab and walls. The Track 4 remedy would reduce the toxicity, mobility, and volume of soil and groundwater contamination to a lesser extent than the Track 1 remedy, because contaminated soil would be left in-place.

3.5.6 Implementability

Alternative I – Implementing the Track 1 remedy would present the technical challenges of installing site-wide SOE and dewatering systems and underpinning adjacent structures to allow for excavation to a minimum depth of 24 feet bgs. Site-wide removal of soil and fill exceeding Track 1 UU SCOs would also require the off-site disposal of an additional 43,900 cubic yards of soil than required for the Track 4 alternative and the import of an additional 40,300 cubic yards of backfill to raise the site to development grade. A Track 1 remedy would also require the additional step of reverse circulation drilling to remove benzene above the UU SCOs at depths of up to 87 feet bgs, thus requiring an additional drill rig mobilization and creating additional waste requiring disposal. Implementing a Track 1 remediation would significantly increase remediation costs and the duration of remedial activity, making this remedy more difficult to implement than Alternative II.

Soil would be excavated with standard bucket excavators. Application of in-situ groundwater remediation would be conducted in accordance with PE-prepared design documents by a contractor qualified to perform the work. The availability of local qualified contractors, personnel, and equipment suitable to implementing the remedy is similar relative to Alternative II. In comparison to Alternative II, there is a longer required timeframe and additional costs associated

with the excavation of additional soil, construction of additional SOE and underpinning, and import of backfill material. A Track 1 remedy is feasible, but assumes greater risks, costs, and timeframes compared with Track 4. The groundwater remedies are similar between the two alternatives; however, Alternative I would require a more aggressive approach in order to meet target concentrations within five years and eliminate the need for soil vapor mitigation associated with residual groundwater contamination.

Alternative II – Implementing the Track 4 remedy is more feasible and is less technically challenging and time consuming than the Track 1 remedy. This alternative would consist mostly of excavation with standard bucket excavators. Alternative II requires substantially less excavation, excavation support, backfill material, and concrete materials than Alternative I. Alternative I does not require underpinning of adjacent structures. The availability of local contractors, personnel, and equipment suitable to working in this environment is high due to the frequency of this type of remediation in the region. Residual soil, groundwater, and soil vapor impacts would be addressed with ECs. Potential exposure pathways from off-site petroleum- and/or CVOC-impacted soil vapor would be mitigated by the operation of a mechanically-ventilated parking garage, the installation of a site-wide vapor barrier, and the installation of an active SMD system as an EC. This alternative is considered feasible and would be protective of human health and the environment.

3.5.7 Cost Effectiveness

Alternative I – The estimated remediation cost of a Track 1 cleanup is about $31.1 million. Because the site would be remediated to UU SCOs, there would be no long-term operation, maintenance, or monitoring costs associated with the proposed remedy. Post-remedy groundwater monitoring is not considered a long-term option that would continue in perpetuity. This alternative is more costly, because of the time and materials associated with the additional excavation, handling and disposal of fill and soil above UU SCOs, including additional SOE, dewatering, and backfill import and placement. Table 6 outlines the individual cost components used to arrive at this cost estimate. The additional vehicular traffic, costs, and delays would outweigh the benefit of achieving an unrestricted use remediation and elimination of long-term ECs and ICs.

Alternative II – The estimated remediation cost of a Track 4 cleanup is about $13.6 million. Although this alternative requires long-term implementation and verification of the ICs and ECs, the estimated cost is lower than a Track 1 because it does not incur the magnitude of costs for handling and disposal of soil, SOE construction, structural underpinning, dewatering, and backfill import and placement. A Track 4 approach also does not require the removal of the benzene hotspot to 87 feet bgs. Alternative II is the most cost-effective alternative available to meet the

applicable SCGs. Table 7 details the individual cost components used to arrive at this cost estimate.

3.5.8 Community Acceptance

The remedial alternatives are expected to be acceptable to the community in the long-term because the potential exposure pathways to contamination from the on-site sources would be eliminated or significantly reduced upon completion of the remedial actions. The end-use of the site would provide a new industrial building, which is consistent with the site location within a New York City Industrial Business Zone. Any selected remedy would be subject to a 45-day public comment period in accordance with the Citizen Participation Plan, and any substantive public comments would be addressed before the remedy is approved by NYSDEC.

3.5.9 Green and Sustainable Remediation (Including Climate Resiliency)

To assess potential remedial alternatives with respect to GSR principles, an environmental footprint analysis was conducted for each remedial alternative using SiteWise™. The environmental footprint analyses assess the environmental footprint at each stage of remediation (site preparation, excavation, and restoration). The following metrics were quantified:

1. GHG Emissions
2. Total Energy Used
3. Water Consumption
4. Electrical Usage
5. Total Nitrogen Oxides (NO_x) Emissions
6. Total Sulphur Oxides (SO_x) Emissions
7. Total Particulate Matter Emissions (specifically particulate matter less than 10 microns in diameter [PM10])

Alternative I would produce more GHG emissions, SO_X emissions, NO_x emissions, and PM10 emissions than Alternative II. Alternative I would use more total energy, water, and electricity than Alternative II. Alternative I would achieve the UU SCOs and remediate all on-site contamination, while Alternative II would achieve the RUI SCOs and leave soil contamination exceeding UU SCOs in place below 1 foot bgs. Both alternatives would reduce contaminant concentrations in groundwater through dewatering and in-situ treatment during the remedial phase, and post-remediation groundwater sampling would be used to evaluate residual groundwater impacts.

Alternative II would shorten the duration of the remediation and result in a reduction in waste generation, energy use, emissions, and water use. This would reduce the overall footprint and lower the contribution to climate change.

Environmental footprint summaries for each alternative are provided in Appendix G. GSR measures would be implemented per DER-31 under both alternatives.

3.5.10 Land Use

The current, intended, and reasonably anticipated future land use of the site and its surroundings are compatible with the alternatives. The future proposed development includes an industrial building. Review of previous environmental and public documents led to the following conclusions:

1. The current and proposed use of the site and its surroundings would be compatible with the selected remedy.
2. The proposed site use conforms to applicable zoning requirements.
3. The proposed site use conforms to historical and/or recent development patterns in the area.
4. The site does not fall within the boundaries of an existing Brownfield Opportunity Area.
5. The site is in an urban setting that is characterized by residential, commercial, and light industrial buildings. There are no areas zoned for agricultural use in the proximity of the site.
6. There are no federal or state land designations.
7. The population growth patterns and projections support the proposed land use.
8. The site is accessible to existing infrastructure.
9. The site is not near important cultural resources, including federal or state historic or heritage sites or Native American religious sites.
10. The nearest ecological receptor is the New York Harbor, which is located about 650 feet west of the site.
11. Groundwater is not used as a potable water source in New York City; therefore, groundwater from the site would not affect municipal water supply wells or recharge areas. Potable water provided to the City of New York is derived from surface impoundments in the Croton, Catskill, and Delaware watersheds.
12. According to the FEMA September 5, 2007 FIRM Panel 3604970192F, the northern-most part of the site is located within Zone AE, which is designated as the 1% annual chance

floodplain (base flood el. 10). The northwestern part of the site is in an area of moderate coastal flood risk outside of advisory flood hazard zones. The remaining site area is mapped in Zone X, which is determined to have a 0.2% annual chance flood hazard.

13. There are no known ICs currently in effect at the site.

3.6 Selection of the Preferred Remedy

Based on the evaluation of the remedial alternatives described above, both alternatives would be protective of human health and the environment and meet the RAOs and SCGs. Alternative II would achieve the remedial action goals established for the redevelopment project with fewer short-term impacts on the community and at a lower cost and would effectively reduce contaminant mobility. Alternative I would achieve unrestricted land use that is free of long-term site management, ECs, an EE, and associated future costs that would be required under Alternative II; however, the technical challenges and additional costs associated with minimum excavation to 24 feet bgs and the associated additional dewatering, SOE, and backfill make this alternative less feasible than Alternative II.

Although both alternatives are implementable, the additional excavation and backfill required to achieve a Track 1 remedy would also increase truck traffic and prolong potential exposure to noise and contaminated dust and vapors associated with additional excavation.

Alternative II is preferred over Alternative I because it can be feasibly and practically implemented while providing protection to human health and the environment, is effective in reducing contaminant mobility and volume and is considered cost effective because the excavation depths do not present significant hardship or increased risk. Therefore, Alternative II is the recommended remedial alternative for this site. Figure 10 depicts the Alternative II cleanup plan.

3.6.1 Zoning

The site is zoned as an M2-1 Manufacturing District. The proposed site use conforms to applicable zoning laws and maps. The present zoning does not preclude remediation to Track 4 SCOs as described above.

3.6.2 Applicable Comprehensive Community Master Plans or Land Use Plans

The site falls within the Southwest Brooklyn Industrial Business Zone (IBZ). IBZs were established in 2006 through the Federal Opportunity Zone program to preserve existing manufacturing districts, cultivate economic development, and encourage industrial growth across the city. The proposed redevelopment is consistent with the goals of the New York City Council as embodied in the New York City Zoning Districts.

3.6.3 Surrounding Property Uses

The current, intended, and reasonably anticipated future land use of the site and its surroundings are compatible with the selected remedy.

3.6.4 Citizen Participation

The Citizen Participation Plan (CPP) is discussed in Section 4.1.9.

3.6.5 Land Use Designations

There are no federal or state land use designations.

3.6.6 Population Growth Patterns

Any proposed land use would support the population growth patterns and projections.

3.6.7 Accessibility to Existing Infrastructure

The site is accessible to existing infrastructure, including NYC sewer and water utilities and electrical and natural gas services.

3.6.8 Proximity to Cultural Resources

There is one City Landmark and one National Register-listed site within 0.5-mile of the site. The Lehigh Valley Railroad Barge 79, which is located about 1,250 feet southwest of the site at 290 Conover Street, is listed on the National Register. The Brooklyn Clay Retort and Fire Brick Works Storehouse, which is located about 975 feet southeast of the site at 76-86 Van Dyke Street, is listed as a City Landmark. The proposed remedy is not anticipated to adversely impact these cultural resources.

3.6.9 Proximity to Natural Resources

The site is not located in close proximity to important federal, state, or local natural resources, including waterways, wildlife refuges, wetlands, or critical habitats of endangered or threatened species. The nearest water body is New York Harbor, which is located about 650 feet west of the site.

3.6.10 Off-Site Groundwater Impacts

Municipal water supply wells are not present in this area of New York City; therefore, groundwater from the site cannot affect municipal water supply wells or recharge areas.

3.6.11 Proximity to Floodplains

According to the FEMA Preliminary Flood Insurance Rate Map (PFIRM), Plate 3604970192G, dated December 5, 2013, the northern, eastern, and southern portions of the site are located within Zone AE, which is designated as within the 1% annual chance floodplain (base flood el.

11). The northwestern and western parts of the site are mapped in Zone X, which is determined to have a 0.2% annual chance flood hazard.

3.6.12 Geography and Geology of the Site

The site geology is described in Section 2.4.1.

3.6.13 Current Institutional Controls

There are no known current ICs in effect at the site.

3.7 Summary of the Selected Remedy

The preferred remedy, a Track 4 cleanup, will include the following tasks:

- Development and implementation of a CHASP and CAMP for the protection of on-site workers, visitors, the community, and the environment including during remediation and construction
- To facilitate site remediation, demolition and removal of subsurface obstructions (e.g., remnant foundation elements) and the surficial building slab and asphalt and concrete gravel cover by the contractor and management of removed C&D debris in accordance with 6 NYCRR Part 360 and 361 regulations. Review and certification of C&D transport and disposal methodologies is not a requirement of the RE. The RE is responsible for documenting that C&D debris is not comingled with contaminated site soil and fill
- Collection of groundwater samples for groundwater treatability analysis and feasibility study and design of in-situ groundwater treatment system to address petroleum- and tar-impacted groundwater in the northern, northwestern, central, and eastern parts of the site
- Recovery of LNAPL via VEFR at wells MW-002, MW-008, and MW-012
- Decommissioning of existing on-site groundwater monitoring wells in accordance with NYSDEC CP-43
- Implementation of soil erosion, pollution and sediment control measures in compliance with applicable laws and regulations
- Design and construction of SOE systems to facilitate the Track 4 remedial excavation
- Excavation and removal of about 13,100 cubic yards of non-native fill and soil to depths between 1 foot bgs and about 16 feet bgs, including the following areas:
    - Site-wide remedial excavation to about 1 foot bgs for removal of non-native fill exceeding the RUI SCOs

  - Excavation to depths between about 4 and 16 feet bgs in the northern, northwestern, eastern, and central parts of the site to remove soil with petroleum and tar-like impacts (i.e., based on analytical data and nuisance conditions) and remove soil from the northern, northwestern, central, and eastern contaminant source areas above the groundwater table with target VOCs and/or SVOCs above the PGW SCOs (i.e., 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, 2-butanone, naphthalene, n-propylbenzene, toluene, total xylenes, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, indeno[1,2,3-cd]pyrene, and phenol).

- Screening for indications of contamination (by visual means, odor, and monitoring with a PID) of excavated material during intrusive site work
- Appropriate off-site disposal of excavated non-native fill and soil in accordance with federal, state, and local rules and regulations for handling, transport, and disposal
- Dewatering to reach remedial excavation depths, and treatment and discharge of dewatering fluids in accordance with applicable regulations and municipal permit requirements
- Decommissioning and removal of any encountered USTs in accordance with 6 NYCRR Part 613 and NYSDEC DER-10 Section 5.5
- Completion of in-situ groundwater treatment via chemical injections to address petroleum- and/or tar-related groundwater impacts on the northern, northwestern, central, and eastern parts of the site
- Collection and analysis of documentation soil samples, including QA/QC samples, in accordance with DER-10 at base of the remedial excavation
- Import of fill clean fill (i.e., soil meeting the lower of Part 375 RUI and PGW SCOs as defined by 6 NYCRR Part 375-6.5, or virgin, native crushed stone to backfill remedial excavations and facilitate EC installation
- Installation and operation of an SMD system in portions of the site that are not occupied by a mechanically-ventilated parking garage and installation of a vapor barrier membrane beneath the building slab and around the sub-grade portions of the foundation walls to mitigate against potential vapor intrusion
- Installation of a site cover system consisting of a concrete building foundation slab and underlying vapor barrier membrane system to prevent future exposure to remaining contaminated soil

- Installation of a groundwater monitoring wells in cellar of the new building for post-remediation groundwater monitoring and contingency treatment, if warranted
- Completion of an SVI evaluation after the new building is constructed
- Establishment of use restrictions (i.e., ICs) including prohibitions on the use of groundwater from the site and prohibitions on sensitive site uses, such as farming or vegetable gardening in remaining site soil, to prevent future exposure to remaining contamination
- Recording of an EE referencing ECs and ICs to prevent future exposure to remaining contamination
- Publication of an SMP for long-term management of remaining contamination as required by the EE, including plans for: 1) IC/EC implementation, 2) monitoring, 3) operation and maintenance, and 4) reporting
- Post-remediation groundwater monitoring of groundwater monitoring wells installed following completion of the remedial excavation for a minimum of eight quarters

Green remediation principles and techniques, including a vapor barrier, would be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31.

Remedial activities will be performed in accordance with this RAWP, and the Department-issued Decision Document. Deviations from the RAWP and/or Decision Document will be promptly reported to the NYSDEC for approval and fully explained in the FER.

4.0 REMEDIAL ACTION PROGRAM

4.1 Governing Documents

The primary documents governing the remedial action are summarized in this section. Where referenced, copies of the full plan are provided in the appendices.

4.1.1 Green Remediation Principals and Best Management Practices (BMP)

The NYSDEC DER-31 Green Remediation Policy requires that green remediation concepts and techniques be considered during all stages of the remedial program, with the goal of improving the sustainability of the cleanup and summarizing the net environmental benefit of any implemented green technology.

Green remediation principles and techniques will be implemented to the extent feasible in the remediation phase of the remedy per DER-31. The green remediation components that will be evaluated are as follows:

- Waste Generation
- Energy Usage
- Emissions
- Water Usage
- Land and/or Ecosystems

The remedy will include the implementation of several BMPs related to these green remediation components. The BMPs are outlined below.

Waste Generation

Waste generation considers the management of waste associated with remedial activities and any waste reduction projects including, but not limited to, material reuse and recycling. Several waste streams will be generated during implementation of the remedy (e.g., dewatering fluids, soil, polyethylene sheets used for stockpile coverage and separating types of contamination, nitrile gloves for endpoint sampling, disposable sample ware, acetate liners from drilling operations, tubing and buckets from groundwater performance monitoring, decontamination materials). When possible, an effort will made to minimize consumption/generation of such materials. If possible, decontamination and reuse of applicable materials will be considered. Electronic methods of data collection (e.g., tablets) will also be used to reduce paper consumption when possible.

Electrical Energy Use

Energy usage considers the electricity usage needed for remediation activities. Energy will be required for charging equipment (e.g., PIDs, air monitoring equipment, groundwater sampling equipment). Battery-powered equipment will be turned off when not in use to limit charging activities.

Emissions

Emissions tracking considers fuel usage for transportation of personnel to and from the site, trucks used for export of contaminated material or import of backfill material, equipment and laboratory sample couriers, and construction equipment.

To reduce fuel usage, trucks and heavy machinery operators will be encouraged to reduce idling time and shut down vehicles or equipment when not in use. Ultra-low sulfur diesel (ULSD) fuel and the best available technology (BAT) for reducing emissions will be used for construction vehicles. The Contractor will also be encouraged to perform routine, on-time maintenance such as oil changes to improve fuel efficiency.

When possible, personnel will be encouraged to take public transport and equipment/sample deliveries and pickups will be consolidated to reduce transport needs.

Water Usage

Water usage considers sources of water for tasks such as decontamination, irrigation, etc. The public water supply will be used when water is required for decontamination activities or dust suppression. This will be required for effective implementation of the remedy and the protection of human health. Water will only be consumed when necessary, and consumption will be in accordance with local regulations.

Land and/or Ecosystems

The site is within a heavily urbanized area and no ecosystems will be disturbed during construction. No ecosystems will be disturbed during construction.

Environmental footprint summaries are provided in Appendix G.

4.1.2 Site-Specific Construction Health and Safety Plan (CHASP)

The RE oversaw the preparation of a site-specific CHASP, which is provided as Appendix E. The CHASP requires that all remedial work performed under this plan will be in full compliance with governmental requirements, including site and worker safety requirements mandated by Federal OSHA. The CHASP provides a mechanism for establishing on-site safe working conditions, safety organization, procedures, and PPE. The CHASP meets the requirements of 29 CFR 1910

and 29 CFR 1926 (which includes 29 CFR 1910.120 and 29 CFR 1926.65, respectively). The CHASP includes, but is not limited to, the following components:

- Organization and identification of key personnel
- Training requirements
- Medical surveillance requirements
- List of site hazards
- Excavation safety
- Drill rig safety
- Work zone descriptions and monitoring procedures
- Personal safety equipment and protective clothing requirements
- Decontamination requirements
- Standard operating procedures
- Contingency plan
- CAMP
- Safety data sheets

The Volunteer and associated parties preparing the remedial documents submitted to the State and those performing the construction work are completely responsible for the preparation of an appropriate CHASP and for the appropriate performance of work according to the CHASP and applicable laws. All contractors performing work on the site must prepare and implement their own HASP that, at a minimum, meets the requirements of the CHASP in Appendix E. The RE is not responsible for the health and safety of the contractor's workers.

The CHASP and requirements defined in this RAWP pertain to all remedial and invasive work performed at the site until the issuance of a COC. The Langan Site Safety Coordinator will be William Bohrer. If required, confined space entry will comply with all OSHA requirements to address the potential risk posed by combustible and toxic gasses. Langan personnel will not enter confined spaces.

4.1.3 Quality Assurance Project Plan (QAPP)

The RE oversaw preparation of a Quality Assurance Project Plan (QAPP) that describes the QA/QC components employed so that the proposed remedy accomplishes the remedial goals and RAOs and is completed in accordance with the design specifications. The QAPP is provided as Appendix I and includes:

- Responsibilities of key personnel and their organizations for the proposed remedy
- Qualifications of the quality assurance officer
- Sampling requirements including methodologies, quantity, volume, locations, frequency, and acceptance and rejection criteria
- Description of reporting requirements for quality assurance activities, including weekly quality assurance review reports, periodic quality assurance and quality control audits, and other report and data submissions.

4.1.4 Construction Quality Assurance Plan (CQAP)

The RE oversaw the preparation of a Construction Quality Assurance Plan (CQAP) that describes the quality control components employed so that the proposed remedy accomplishes the remedial goals and RAOs and is completed in accordance with design specifications. Because the remedy is being accomplished concurrent with redevelopment, the Contractor and construction manager will have the primary responsibility to provide construction quality. A list of engineering personnel involved in implementation of the CQAP and procedures that will be carried out by the remedial engineering team are identified below.

Role	**Contact**
RE:	Gerald Nicholls, PE, CHMM
Program Manager	Stuart Knoop, PG
Project Manager:	Nicholas Palumbo
Langan Health & Safety Officer:	Tony Moffa Jr., CHMM
Qualified Environmental Professional:	Michael Burke, PG, CHMM
Site Safety Coordinator:	William Bohrer, PG
Quality Assurance Officer:	Joseph Conboy
Field Team Leader:	Laura Grose

Project personnel résumés are provided in Appendix J.

A Qualified Environmental Professional (QEP) or the RE will directly supervise field personnel that will be on-site during the remedial action to monitor particulates and organic vapor in accordance with the CAMP. Daily reports will be submitted to NYSDEC and NYSDOH and will include reporting of CAMP results that exceed the specified action levels (if any).

A QEP or the RE will directly supervise field personnel that will meet with the Construction Superintendent on a daily basis to discuss the plans for that day and schedule upcoming activities. The field personnel will document remedial activities in daily reports.

A QEP or the RE will directly supervise field personnel that will screen the excavation with a PID during intrusive activities. All readings will be noted in the record. Elevated readings will be reported to NYSDEC and NYSDOH in the daily reports. The field personnel will collect documentation soil samples in accordance with this RAWP.

A photo log will be kept to document construction activities by still photos. The photo log may also be used to record activities recorded in the daily report.

The project field notebook will be used to document all sampling activities and how they correspond to the RAWP. All observations and field and laboratory tests will be recorded in the project field notebook or on separate logs. Recorded field observations may take the form of notes, charts, sketches, or photographs.

The Field Team Leader will maintain the current field book and original field paperwork during the performance of work. The Project Manager will maintain the field paperwork after completion and will maintain submittal document files.

4.1.5 Soil/Materials Management Plan (SMMP)

The RE oversaw preparation of a Soil/Materials Management Plan (SMMP) that includes detailed plans for managing contaminated soil, fill, and liquids that are disturbed at the site, including excavation, handling, storage, transport and disposal. It also includes controls that will be applied to these efforts to facilitate effective, nuisance-free, to the extent practical, performance in compliance with applicable federal, state, and local laws and regulations. The SMMP is provided as Section 5.4.

4.1.6 Stormwater Pollution Prevention Plan (SWPPP)

Because this project involves soil disturbance of more than 20,000 square feet, a SWPPP will be required, under New York City regulations. A SWPPP will be prepared during the project design process and provided to NYSDEC when completed. Erosion and sediment controls for the site will be designed in conformance with requirements presented in the New York State Standards and Specifications for Erosion and Sediment Control. BMPs will be employed to mitigate erosion and prevent the migration of sediment off site throughout construction.

Dewatering will be required to achieve a Track 4 SCO cleanup. The Contractor will either dispose of the accumulated water at an off-site disposal facility permitted to accept the waste, follow the Rules of the City of New York, Title 15, Chapter 19, Use of the Public Sewers and the NYCDEP's "Procedure for Obtaining Letter of Approval for Groundwater Discharge to Sanitary or Combined Sewer" and use the approval to obtain a Temporary Discharge of Groundwater into the City Sewer System Permit, and follow the rules of an NYSDEC SPDES permit for discharge to a stormwater sewer. Dewatering will need, at a minimum, a settling tank prior to discharge to the

sewer. Based on the groundwater data collected during the RI, additional pretreatment (e.g., bag filters, carbon filtration, etc.) may be required prior to discharge to the New York City sewer system. If daily discharge exceeds 10,000 gallons to the New York City combined sewer, the Contractor will also have to obtain approval from NYCDEP's Bureau of Water and Sewer Operations, Chief of Permitting and Compliance. Collected groundwater or rainwater will be discharged, as defined by the NYCDEP permit or SPDES permit, into the New York City sewer system (combined or stormwater, as appropriate to the permit), via an entry point acceptable to NYCDEP or NYSDEC. The dewatering and treatment system will be designed by the contractor's New York State-licensed PE. Copies of the dewatering design plan and the NYCDEP or SPDES permit, if warranted, will be provided to NYSDEC.

4.1.7 Community Air Monitoring Plan (CAMP)

A site-specific CAMP was developed in accordance with the NYSDOH Generic CAMP included as Appendix F. Community air monitoring will be conducted as outlined in Section 5.4.13.

4.1.8 Contractor's Site Operations Plan

The RE will review plans and submittals for this remedial project (including those listed above as well as the Contractor and subcontractor document submittals) and document their compliance with this RAWP. The RE is responsible for documenting that the Contractor and subcontractor document submittals are compliant with this RAWP. Remedial documents will be submitted to the NYSDEC and the NYSDOH in a timely manner and before the start of work.

4.1.9 Citizen Participation Plan (CPP)

A certification of mailing will be sent by the Volunteer to the NYSDEC project manager following the distribution of all Fact Sheets and notices that includes: 1) certification that the Fact Sheets were mailed; 2) the date they were mailed; 3) a copy of the Fact Sheet; 4) a list of recipients (contact list); and 5) a statement that the repository was inspected on (specific date) and that it contained all of the applicable project documents.

No changes will be made to NYSDEC-approved Fact Sheets authorized for release by NYSDEC without written consent from the NYSDEC. No other information, such as brochures and flyers, will be included with the Fact Sheet mailing.

A document repository was established at the following location, as proposed in the BCP Application, and will contain all applicable project documents:

Park Slope Library
431 6th Avenue
Brooklyn, New York 11215
(718) 832-1853

Brooklyn Community Board 6
250 Baltic Street
Brooklyn, New York 11201
(718) 624-3027

In addition, an electronic repository can be accessed via DECInfo Locator at the following link: https://extapps.dec.ny.gov/data/DecDocs/C224256/

4.2 General Remedial Construction Information

4.2.1 Project Organization

This section presents the anticipated project organization and associated roles, including key personnel, descriptions of duties and lines of authority in the management of the RAWP. Information regarding the organization/personnel and their associated responsibilities is provided below.

4.2.2 Remediation Engineer

The RE for this project will be Gerald Nicholls, PE. The RE is a registered PE licensed by the State of New York. The RE will have primary direct responsibility for implementation of the remedial program for the 145-165 Wolcott Street project (BCP Site No. C224256). The RE will certify in the FER that the remedial activities were observed by qualified environmental professionals under his supervision and that the remediation requirements set forth in the RAWP and any other relevant provisions of ECL 27-1419 have been achieved in accordance with this RAWP. Other RE certification requirements are listed later in this RAWP.

The RE and their team will document the work of remediation contractors and subcontractors involved in all aspects of remedial construction, including soil excavation, stockpiling, characterization, removal and disposal, groundwater treatment, air monitoring, EC installation, emergency spill response services, import of backfill, and management of waste transport and disposal. Deviations from the procedures identified in the RAWP that are observed by Langan will be brought to the attention of the Contractor, who will remedy the deviation(s). The RE, the QEP, or the Project Manager under supervision of the RE, will be responsible for all communication with NYSDEC and NYSDOH.

The RE will review all pre-remedial plans submitted by remediation contractors for compliance with this RAWP and will certify compliance in the FER.

In the FER, the RE will provide the certifications listed in Section 9.1 of this RAWP.

4.2.3 Remedial Action Construction Schedule

The anticipated remedial action construction schedule is discussed below in Section 10.0 and provided in Appendix K. The NYSDEC will be promptly notified of proposed changes, delays, or deviations to the schedule.

4.2.4 Work Hours

The hours of operation of remedial construction will conform to the NYCDOB construction code requirements or according to specific variances issued by that agency. The NYSDEC will be notified by the Volunteer of any variances issued by the NYCDOB. The NYSDEC reserves the right to deny alternate remedial construction hours.

4.2.5 Site Security

The site perimeter will be secured with gated, signed, plywood fencing with points of entry and exit in accordance with NYCDOB and New York City Department of Transportation permits and requirements. The purpose of the fencing is to limit site access to authorized personnel, protect pedestrians from site activities, and maintain site security.

4.2.6 Traffic Control

Site traffic will be controlled through designated points of access as determined by the remediation contractor. Access points will be continuously monitored and if necessary, a flagging system will be used to protect workers, pedestrians, and authorized guests. Traffic will also adhere to applicable local, state, and federal laws.

4.2.7 Contingency Plan

The contingency plans described below have been developed to address unexpected discoveries of additional contaminated media and/or USTs.

4.2.7.1 Discovery of Additional Contaminated Soil

During remediation and construction, soil will be continuously monitored by the RE's field representative(s) using a PID as well as visual and olfactory field screening to identify previously unknown contamination and soil that may not be suitable for the selected disposal facility(ies). Impacted soil/fill will be segregated and sampled for lab analysis in accordance with disposal facility requirements (typically VOCs, SVOCs, PCBs, pesticides, herbicides, and metals). If the facility is not permitted to receive the sampled soil, the soil will be disposed of off-site at a permitted facility able to receive the soil based on the characterization data. Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to the NYSDEC Project Manager. These findings will

be detailed in daily reports and subsequent monthly BCP progress reports. Potential additional remedial measures will be coordinated with NYSDEC.

4.2.7.2 Discovery of Unexpected USTs

Previously unidentified USTs may be encountered during excavation. Unexpected USTs encountered during remediation or construction will be decommissioned in accordance with 6 NYCRR Parts 612.2 and 613.9 and NYSDEC DER-10 Section 5.5. Following removal of the UST(s), post-excavation soil samples will be collected per the NYSDEC DER-10 requirements, if deemed necessary by the NYSDEC and the RE. Post-excavation soil sampling is not expected where the remedial excavation will extend below the UST. Excavated petroleum-impacted soil/fill will be stockpiled separately from non-petroleum-impacted soil/fill, characterized, and disposed of off-site at a permitted disposal facility in accordance with applicable regulations. UST closure documentation, including contractor affidavits, waste manifests, and tank disposal receipts, will be included as appendices to the FER. USTs will be registered and decommissioned with the NYSDEC PBS unit, as necessary.

If USTs are encountered during invasive site work, the findings will be promptly communicated to the NYSDEC Project Manager and detailed in daily reports and subsequent monthly BCP progress reports.

4.2.8 Worker Training and Monitoring

Worker training and monitoring will be conducted in accordance with the site-specific CHASP, included as Appendix E.

4.2.9 Agency Approvals

Permits or government approvals required for remedial construction will be obtained before the start of remedial construction. The planned end use for the site as an industrial building conforms to the current zoning for the property as determined by the New York City Department of City Planning. A Certificate of Occupancy will not be issued for the project unless conformance with the zoning designation is demonstrated.

4.2.10 NYSDEC BCP Signage

Signs are optional for BCP sites and should be discussed with the NYSDEC Project Manager. If a sign is to be displayed, it must follow NYSDEC specifications for design and content. The NYSDEC Project Manager can provide details on signage protocol.

4.2.11 Pre-Construction Meeting with NYSDEC

Prior to the onset of construction, a meeting will be held between the NYSDEC, RE, Volunteer, construction manager, and contractor to discuss project roles, responsibilities, and expectations

associated with this RAWP. Notice will be provided to the NYSDEC at least seven days prior to site mobilization.

4.2.12 Emergency Contact Information

An emergency contact sheet with names and phone numbers is included in the CHASP, provided as Appendix E. That document will define the specific project contacts for use by NYSDEC and NYSDOH in the case of a day or night emergency.

4.2.13 Remedial Action Costs

The estimated preliminary engineering and contractor cost of the preferred remedy is about $12 million.

4.3 Site Preparation

The RE will work with the Volunteer and their contractors so that site development will not interfere with, or otherwise impair or compromise, the remediation proposed in this RAWP.

4.3.1 Mobilization

Before commencing remedial construction, the Contractor will mobilize to the site and prepare for remediation. Mobilization and site preparation activities may include the following:

- Identifying the location of all aboveground and underground utilities (e.g., power, gas, water, sewer, telephone), equipment, and structures (as necessary to implement the remediation)
- Mobilizing necessary remediation personnel, equipment, and materials to the site
- Constructing one or more stabilized construction entrances consisting of crushed virgin stone, RCA, or equivalent, at or near the site exit, which takes into consideration the site setting and site perimeter
- Constructing a decontamination pad for trucks, equipment, and personnel that come into contact with impacted soil/fill during remedial activities, as necessary
- Installing erosion and sedimentation control measures, as necessary
- Installing temporary fencing or other temporary barriers to limit unauthorized access to areas where remediation will be conducted

4.3.2 Erosion and Sedimentation Controls

Erosion and sediment controls for the site will be designed and documented in a SWPPP in conformance with requirements presented in the New York State Standards and Specifications for Erosion and Sediment Control. BMPs will be employed to mitigate erosion and prevent the

migration of sediment off-site throughout construction. Localized dewatering will be required during construction of the cellar and will be permitted under an NYCDEP or NYSDEC SPDES permit. Discharge of water generated during remedial construction to surface waters (e.g., New York Harbor) is prohibited without a SPDES permit. Components of the SWPPP are further described in Section 5.4.10.

4.3.3 Monitoring Well Decommissioning

The existing groundwater monitoring wells will be protected until remedial excavation beings. The wells will then either be protected through groundwater remediation or decommissioned in accordance with NYSDEC CP-43 Groundwater Monitoring Well Decommissioning Policy. The only exception to this is if the full length of the well is to be excavated during remediation and development; in this case, all well materials will be removed during excavation. Well decommissioning will be performed by an experienced driller and logged by the driller and Langan personnel. Decommissioning documentation will be provided in the FER.

4.3.4 Temporary Stabilized Construction Entrance(s)

At a minimum, a temporary gravel construction entrance and exit will be installed for all vehicles exiting the BCP site. The gravel pads will be graded so that runoff water will be directed back into the site. Additional stabilized construction entrances may be added depending on the sequencing and location of remedial excavations. This will be detailed in the Contractors Site Operations/Site Logistics Plan. The Contractor will protect and maintain the existing sidewalks and roadway at site entrance points.

4.3.5 Utility Marker and Easements Layout

The Volunteer and their contractors are solely responsible for the identification of utilities that might be affected by work under the RAWP and implementation of required health and safety measures during performance of work under this RAWP. The Volunteer and their contractors are solely responsible for safe execution of all invasive and other work performed under this RAWP. The Volunteer and their contractors must obtain any local, state, or federal permits or approvals pertinent to such work that may be required to perform work under this RAWP. Approval of this RAWP by NYSDEC does not constitute satisfaction of these requirements.

4.3.6 Excavation Support

Appropriate management of structural stability of on-site or off-site structures during on-site activities, including excavation, is the sole responsibility of the Volunteer and their contractors. The Volunteer and their contractors are solely responsible for safe execution of all invasive and other work performed under this RAWP. The Volunteer and their contractors must obtain any local, state, or federal permits or approvals that may be required to perform work detailed in this

RAWP. Further, the Volunteer and their contractors are responsible for the implementation of all required, appropriate, or necessary health and safety measures during performance of work under the approved RAWP.

4.3.7 Equipment and Material Staging

The Contractor will notify the RE and the Volunteer, in writing with receipt confirmed, of pending site work mobilization at least 30 calendar days in advance. During mobilization, construction equipment will be delivered to the site, temporary facilities constructed, and temporary utilities installed as needed. The Contractor will place and maintain temporary toilet facilities within the work areas for usage by all site personnel. The Contractor will provide drinking water for all site personnel.

4.3.8 Truck Inspection/Decontamination Area

The contractor will construct decontamination pads/truck inspection stations at each site entrance/exit planned for construction vehicle usage. Before exiting the site, trucks will be required to stop at a truck inspection station and will be examined for evidence of contaminated soil on the undercarriage, body, and wheels. If observed, soil or debris will be removed. Brooms, shovels, and/or potable water will be utilized for the removal of soil from vehicles and equipment, as necessary. The location of decontamination pads may change periodically to accommodate the contractor's sequencing of work. When required, the pads will be constructed by the Contractor to collect wastewater for off-site disposal or treatment and discharge, if generated during decontamination activities. The design will consider adequate space to decontaminate site equipment and vehicles and sloping and liners to facilitate collection of wastewater. Any collected truck rinsate and decontamination wastewater shall be either discharged in accordance with an NYCDEP or SPDES permit, or tested and transported to an off-site disposal facility that is permitted to accept this waste, in accordance with applicable local, state, and federal regulations. The remediation contractor is responsible for collecting soil that is tracked immediately off-site and returning the soil to the site. The RE's on-site representative will document that trucks leaving the site are properly decontaminated. The Contractor will maintain the decontamination pad(s) throughout the duration of site work. Prior to demobilization, the Contractor will deconstruct the pads and dispose of materials as required.

If the Contractor uses high pressure washing methods, the Contractor shall provide splash protection around the vehicle decontamination facility to prevent splatter and mist migrating off-site during the vehicle decontamination process. Splash protection shall be temporary and stable and capable of being dismantled in the event of high winds.

4.3.9 Site Fencing

The site perimeter will be secured with gated and signed fencing. The purpose of the fencing is to limit site access to authorized personnel, protect pedestrians from site activities and maintain site security.

4.3.10 Demobilization

The Contractor will be responsible for demobilizing all labor, equipment, and materials not designated for off-site disposal. The RE will be responsible to document that the Contractor performs follow-up coordination and maintenance for the following activities:

- Restoration of areas that may have been disturbed to accommodate support areas (e.g., staging areas, decontamination areas, storage areas, temporary water management areas, and access areas)
- Removal of temporary access areas (whether on-site or off-site) and restoration of disturbed access areas to pre-remediation conditions
- Removal of sediment and erosion control measures and disposal of materials in accordance with acceptable rules and regulations
- Equipment decontamination
- General refuse disposal.

4.4 Reporting

Daily and monthly reports and an FER will be submitted to the NYSDEC as required to document the remedial action. Copies of daily and monthly reports will be included in the FER. The Project RE responsible for certifying all reports will be an individual licensed to practice engineering in New York State; Gerald Nicholls, PE of Langan, will have this responsibility. Should Mr. Nicholls become unable to fulfill this responsibility, another suitably qualified PE will take his place. In addition to the periodic reports and the FER, copies of all relevant contractor documents will be submitted to the NYSDEC.

4.4.1 Daily Reports

Daily reports will be submitted to NYSDEC and NYSDOH Project Managers by the end of each day following the reporting period (or at a frequency acceptable to them) and will include:

- An update of progress made during the reporting day
- Locations of work and quantities of soil/fill imported to and exported from the site
- References to alpha-numeric map for site activities
- A summary of any and all complaints with relevant details (names, phone numbers)

- A summary of CAMP findings, including corrective actions for instances where action levels were exceeded
- An explanation of notable site conditions
- A description of anticipated site activities
- The NYSDEC-assigned project number.

Daily reports are not intended to be the mode of communication for notification to the NYSDEC of emergencies (accident, spill), requests for changes to the RAWP, or other sensitive or time-critical information. However, such conditions must also be included in the daily reports. Emergency conditions and changes to the RAWP will be addressed directly to the NYSDEC Project Manager via personal communication.

Daily reports will include a description of daily activities keyed to an alpha-numeric map for the site that identifies work areas. These reports will include a summary of air sampling results, odor and dust problems and corrective actions, and all complaints received from the public.

4.4.2 Monthly Reports

Monthly reports will be submitted to NYSDEC and NYSDOH Project Managers by the tenth of the month following the reporting period. The monthly reports will include the following information, as well as any additional information required by the BCA:

- Activities relative to the site during the previous reporting period and those anticipated for the next reporting period, including a quantitative presentation of work performed (i.e., tons of soil/fill exported and imported, etc.)
- Description of approved activity modifications, including changes of work scope and/or schedule
- Sampling results received following internal data review and validation, as applicable
- An update of the remedial schedule including the percentage of project completion, unresolved delays encountered or anticipated that may affect the future schedule, and efforts made to mitigate such delays

4.4.3 Other Reporting

Photographs will be taken of all remedial activities and submitted to NYSDEC in digital format. Photographs will illustrate all remedial program elements and will be of acceptable quality. Representative photos of the site before any remedial actions and of each contaminant source, source area, and site structure before, during, and after remediation will be provided.

Photographs will be included in the daily reports as needed, and a comprehensive collection of photos will be included in the FER.

Progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the FER. Regular updates to the metrics used (Spreadsheets for Environmental Footprint Analysis [SEFA], SiteWise™, or another Department-approved method) should be included.

Site records for remedial work will be appropriately documented and maintained on-site during the project and be available for inspection by NYSDEC and NYSDOH staff.

4.4.4 Complaint Management Plan

The management plan for documenting complaints is detailed below.

Item	Description
Approach	Complaints regarding remediation or construction activities/operations will be minimized and mitigation measures will be implemented to reduce the incidence of complaints.
Objective	To manage environmental complaints from the community regarding construction or remediation.
Implementation Strategy/Mitigation Measures	All complaints will be documented on a complaint register. The register will be maintained as an ongoing record. Each entry will include the following information: • Time, date and nature of complaint • Type of communication (telephone, letter, personal, etc.) • Name, contact address and contact number • Response and investigation undertaken as a result of the complaint and action taken with the signature of the responsible person Each complaint will be investigated as soon as practicable in relation to the requirements.
Monitoring	A representative from the Volunteer or the RE will follow up on the complaint within two weeks of receipt to ensure it has been resolved.
Reporting	Upon receipt and following the complaint investigation and resolution, the NYSDEC will be notified. Complaints and resolutions will be documented in the daily reports.

Item	Description
Corrective Action	Should an incident or failure to comply occur in relation to the management of environmental complaints, one or more of the following corrective actions will be undertaken as appropriate: • Conduct additional training of staff to handle environmental complaints • Investigate why the environmental complaint was not addressed within the specified time frame • Investigate the complaint and action follow-up according to the investigation results

4.4.5 Deviations from the RAWP

Necessary deviations from the RAWP will be coordinated with the NYSDEC in advance. Notification will be provided to the NYSDEC by telephone/email for conditions requiring immediate action (e.g., conditions judged to be a danger to the surrounding community). Based on the significance of the deviation, an addendum to this RAWP may be necessary and will include:

- Reasons for deviating from the approved RAWP
- Approval process to be followed for changes/editions to the RAWP
- Effect of the deviation(s) on the overall remedy

5.0 REMEDIAL ACTION: SOURCE MATERIAL REMOVAL AND IN-SITU GROUNDWATER TREATMENT

Remediation pursuant to the recommended Track 4 remedy will include the following material removal tasks:

1. Recovery of LNAPL prior to remedial excavation via VEFR and implementation of an LNAPL recovery system during localized dewatering.
2. Site-wide excavation would extend to about 1 foot bgs for removal of non-native fill and soil exceeding the Part 375 RUI SCOs.
3. Excavation to depths of about 4 and 6 feet bgs and removal of soil with petroleum- and/or tar-like impacts (based on analytical data and documented nuisance conditions) at three locations in the northern and eastern parts of the site.
4. Excavation and removal of soil identified as contaminant source material with petroleum and tar-like impacts, including tar-like product, in the northern, northwestern, central and eastern parts of the site, including grossly-contaminated soil and soil above the groundwater table within the hotspot excavation areas with target VOCs and/or SVOCs above the PGW SCOs (i.e., 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, 2-butanone, naphthalene, n-propylbenzene, toluene, total xylenes, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, indeno[1,2,3-cd]pyrene, and phenol).
5. Source area excavations with evidence of free-phase tar-like or petroleum product include:
    a. Excavation to about 8.5 to 11.5 feet bgs (el. 2 to el. 1) in an approximately 10,500-square-foot area within the former building on the eastern part of the site;
    b. Excavation to about 8 to 16 feet bgs (el. 5 to el. -1) in an approximately 13,500-square-foot asphalt- and concrete gravel-paved area in the northwestern and central parts of the site; and
    c. Excavation to about 9 feet bgs (el. 2) in an approximately 2,250-square-foot asphalt- and concrete gravel-paved area in the northern part of the site.
6. Decommissioning and removal of any encountered USTs or contaminant sources identified during earthwork.
7. Completion of in-situ groundwater treatment via chemical injections to supplement remedial excavation in petroleum- and tar-impacted areas, based on a treatability analysis and feasibility study.

5.1 LNAPL Recovery

Multiple rounds of LNAPL recovery will be conducted at wells MW-002, MW-008, and MW-012 via VEFR. Prior to recovery, LNAPL thickness will be gauged in each well with an oil-water interface probe. A remediation contractor will provide a vacuum truck to apply suction at each well for a period of 20 to 45 minutes, depending on the volume of LNAPL removal. Following completion of each VEFR event, the volume of the product/groundwater mixture recovered from each well will be recorded for inclusion in the FER. The residual LNAPL thickness, if any, will be recorded after completion of each event. LNAPL recovery events will occur on a monthly basis until LNAPL is no longer detected in the wells or remedial excavation commences. Data recorded during each event will be summarized in daily field reports and in monthly reports to be provided to NYSDEC, and in the FER.

5.2 Groundwater Remediation

Petroleum- and/or tar-related VOCs and SVOCs were identified in groundwater at concentrations above the SGVs in the northwestern, northern, and eastern parts of the site. Prior to remedial excavation, groundwater samples will be collected from wells in each area (MW-002, MW-03S, MW-012, and MW-014) for analysis for treatability parameters (Part 375 list and TCL/TAL VOCs, SVOCs, and metals, TOC, BOD, COD, alkalinity, total and dissolved iron, total and dissolved manganese, sulfate, nitrate, and chloride) and completion of a treatment treatability analysis and feasibility study.

An in-situ groundwater remedy will be selected, based on the conclusions of groundwater treatability analysis and feasibility study. Prior to remedial excavation and construction of the new building, remedial injection wells will be installed within the groundwater treatment area. Details regarding the number of injection wells, the type and frequency of injections, and the well installation and injection methodology will be provided in a technical memorandum prepared after completion of the feasibility study.

5.3 Soil Cleanup Objectives

A Track 4 remediation is proposed. The SCOs for the site will be the NYSDEC RUI SCOs listed in 6 NYCRR Part 375-6.8(b). For soil above the groundwater table in contaminant source areas, SCOs will also include PGW SCOs for contaminants detected in groundwater above the SGVs (i.e., 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, 2-butanone, naphthalene, n-propylbenzene, toluene, total xylenes, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, indeno[1,2,3-cd]pyrene, phenol). Any exposed soil areas that exceed these SCOs will be capped with impervious cover.

Soil management will be conducted in accordance with the SMMP described below (Section 5.4). Closure of any USTs, if encountered, will conform to the criteria defined in 6 NYCRR Part 613.9,

NYSDEC CP-51, and other applicable NYSDEC UST closure requirements including DER-10 Section 5.5.

5.4 Remedial Performance Evaluation

5.4.1 Soil Sampling Frequency and Methodology

Documentation soil samples will be collected from the base of the remedial excavation areas as described in Section 3.3.8, in accordance with NYSDEC DER-10. Documentation samples will be collected from the base of the excavation at a frequency of one sample per 2,000 square feet and one sidewall sample per 50 linear feet. In petroleum- and tar-impacted hotspot areas, documentation samples will be collected at a frequency of one sample per 900 square feet of excavation base and one sample per 30 linear feet of sidewall. Sidewall samples will be collected from hotspot excavations where not precluded by SOE measures. It is anticipated that 86 post-excavation documentation endpoint soil samples, plus QA/QC samples, will be collected to document remedial performance. Sidewall samples will not be collected where the SOE obstructs access to sidewall soil, sidewall soil is off-site, or in areas where the slope of the excavation cut is 1:1 or less. Should the contractor slope down to source removal areas at slope greater than 1:1, then vertical sidewall samples will be collected.

Documentation samples will be transported under standard chain-of-custody protocol to an NYSDOH ELAP-approved laboratory. Laboratory analyses will be conducted in accordance with USEPA SW-846 methods and NYSDEC Analytical Services Protocol (ASP) Category B deliverable format. QA/QC procedures required by the NYSDEC ASP and SW-846 methods will be followed, including instrument calibration, standard compound spikes, surrogate compound spikes, and analysis of quality control samples. The laboratory will provide sample bottles, which are pre-cleaned and preserved. Where there are differences in the SW-846 and NYSDEC ASP requirements, the NYSDEC ASP shall take precedence.

Documentation endpoint soil samples will be collected in accordance with NYSDEC DER-10 to document remedial performance and will be analyzed for Part 375 list of VOCs, SVOCs, PCBs, pesticides, cyanide, metals including hexavalent and trivalent chromium, PFAS and 1,4-dioxane. Additional sampling may be required should over-excavation be necessary. Should additional soil sampling be deemed necessary (e.g., additional tank closure or previously unidentified environmental conditions through visual evidence of a remaining source), documentation sampling will be conducted in accordance with NYSDEC DER-10.

The proposed documentation soil sample locations are presented in Figure 11. The FER will provide a tabular and map summary of all documentation sample results.

5.4.2 Groundwater Remediation Performance Monitoring

A groundwater monitoring program will be implemented upon completion of the remedy to document groundwater quality and RAO achievement. The groundwater monitoring program details and schedule will be submitted to the NYSDEC for review and approval prior to implementation. Groundwater monitoring samples will be submitted to an NYSDOH ELAP-accredited laboratory for analysis of VOCs and SVOCs. In consultation with the NYSDEC, groundwater sample results will be used to determine when to discontinue groundwater sampling and when the groundwater remedy is considered complete. Criteria for completion of groundwater remediation is further discussed in Section 7.4.3.

If the SMP is drafted prior to the completion of groundwater remediation, continued groundwater sample collection will be incorporated into the SMP.

5.4.3 QA/QC

A Data Usability Summary Report (DUSR) will be included in the FER. Quality control procedures for the sampling are included in the QAPP (Appendix I). Documentation soil sample results will be provided in NYSDEC electronic data deliverable format for EQuIS™. Guidance on sampling frequency is presented in Section 5.4 of DER-10. Prior to completion of validation, preliminary sample results will be appended to the monthly progress reports.

The QA/QC procedures required by the NYSDEC ASP and SW-846 methods will be followed. This will include instrument calibration, standard compound spikes, surrogate compound spikes, and analysis of quality control samples. The laboratory will provide sample bottles, which will be pre-cleaned and preserved. Where there are differences in the SW-846 and NYSDEC ASP requirements, the NYSDEC ASP will take precedence.

5.4.4 Data Usability Summary Report

ASP Category B deliverables will be prepared for all remedial performance samples collected during implementation of this RAWP. DUSRs will be prepared by a qualified data validator and the findings will be reported in the FER.

5.4.5 Reporting

Analytical laboratories that analyze confirmation soil samples, prepare results, and perform contingency sampling will be NYSDOH ELAP-certified laboratories. The FER will provide a tabular and map summary of all endpoint sample results and exceedances of SCOs.

5.5 Estimated Soil/Fill Removal and Backfill Quantities

The estimated volume of soil requiring removal and off-site disposal for the recommended Track 4 remedy is about 13,100 cubic yards. An estimated 6,900 cubic yards of backfill will be required to return the site to the grade required for development. Imported backfill material will consist

of clean fill that meets the lower of RUI and PGW SCOs or other acceptable fill material such as RCA and/or crushed virgin stone from NYSDEC permitted mine or quarry. RCA will not be used to backfill areas that are over-excavated to achieve a Track 4 remedy without prior approval from the NYSDEC.

5.6 Soil/Materials Management Plan

This section presents the approach to management, disposal and reuse of soil and fill excavated from the site. This plan is based on the current knowledge of site conditions and will be augmented with the additional data collected during remediation. Field personnel, under the direction of the RE or QEP, will monitor and document the handling and transport of contaminated soil/fill removed from the site for disposal as a regulated solid waste. Field personnel, under the direction of the RE or QEP, will assist the remedial contractor in identifying impacted soil during excavation, determining soil suitable for direct load-out versus temporary on-site stockpiling, selection of samples for waste characterization, and determining the proper off-site disposal facility. Separate stockpile areas will be constructed as needed to stage various excavated soil types with the intent to more efficiently manage and characterize the soil and to avoid commingling of impacted soil with non-impacted soil.

The following types of soil and non-native fill are reasonably anticipated to be encountered during remediation:

- Non-Hazardous Fill/Soil – This refers to non-native fill and soil that contains contaminants above the Track 4 SCOs and will not be reused on-site. It will be excavated across the site footprint and transported off-site for disposal at a facility permitted to accept the fill. Non-hazardous fill material and native soil will generally be excavated to a depth of about 1 feet bgs. Characterization sampling will be completed in conformance with the requirements of the disposal facility.
- Petroleum- and/or Tar-Impacted Soil – This refers to fill material and native soil that contain contaminants with concentrations of petroleum- and/or tar-related VOCs and SVOCs above the Track 4 SCOs and/or visual, olfactory, and instrumental evidence of petroleum impacts. This material will not be reused on-site. The Phase I and Phase II RI's and the NAPL investigation identified petroleum- and/or tar-impacted material in the northern, northwestern, central, and eastern parts of the site from surface grade to depths ranging between 2 and 22 feet bgs. This material will be excavated from localized excavation areas and stockpiled separately from excavated non-hazardous fill material and native soil, as required by the selected permitted disposal facility. Characterization sampling will be completed to conform to the requirements of the selected disposal facility and to determine whether excavated material will be treated as hazardous or non-hazardous waste.

- Tar-Like Material – This refers to the tar-like material consisting of viscous, immiscible fluid and hard, black and tacky, yellow material observed below the pavement in the northern and northwestern parts of the site. This material will not be reused onsite. The tar-related material generally occurs in 0.5- to 6.5-foot-thick lenses at depths varying between 3 and 17 feet bgs. Characterization sampling will be completed to conform to the requirements of the selected disposal facility(ies) and to determine whether the excavated material and underlying soil will be treated as hazardous or non-hazardous waste.
- Hazardous Lead-Impacted Soil – This material refers to fill material and native soil that contain lead at concentrations above the Resource Conservation Recovery Act (RCRA) Hazardous Waste Limits. This material will not be reused on-site. Hazardous lead-impacted areas will be delineated during waste characterization sampling. Hazardous lead-impacted material will be stockpiled separately from non-hazardous fill material and native soil and will be managed under an EPA hazardous waste identification number. Characterization sampling will be completed to conform to the requirements of the selected disposal facility.

5.6.1 Soil Screening Methods

Visual, olfactory, and PID soil screening and assessment will be performed by field personnel under the direction of the RE during all remedial and development excavations into known or potentially contaminated soil/fill. Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during the remedy (prior to issuance of the COC).

Field screening will be performed by field personnel under the direct supervision of the RE or QEP. Résumés will be provided for all personnel responsible for field screening (i.e., those representing the RE) of invasive work for known or unknown contaminant sources during remediation and development work.

5.6.2 Stockpile Methods

Soil stockpile areas, if needed for differentiation of soil and fill, will be constructed for staging of site soil, pending loading or waste characterization testing. Separate stockpile areas will be constructed to avoid commingling differing waste types. Stockpile areas will meet the following minimum requirements:

- The excavated soil will be placed onto an impermeable surface or on minimum thickness of 8-mil low-permeability plastic sheeting or tarps of sufficient strength to prevent puncture during use; separate stockpiles will be created where soil/fill types are different. The use of multiple layers of thinner liners is permissible.

- Equipment and procedures will be used to place and remove the soil to minimize the potential to jeopardize the integrity of the liner.
- Stockpiles will be covered at the designated times (see below) with minimum 8-mil plastic sheeting or tarps, which will be securely anchored to the ground. Stockpiles will be routinely inspected and broken sheeting covers will be promptly replaced.
- Stockpiles that have reached their capacity will be appropriately covered until they are ready for loading for off-site transport.
- Active stockpiles (e.g., stockpiles that have not reached their capacity) will be covered at the end of each workday.
- Each stockpile area will be encircled with silt fences and hay bales, as needed, to contain and filter particulates from rainwater that has drained off the soil, and to mitigate the potential for surface water run-off off-site.
- Stockpiles will be inspected at a minimum once each day and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC.

5.6.3 Soil/Fill Excavation and Load Out

A Langan field representative under the supervision of the RE or QEP will monitor ground-intrusive work and the excavation and load-out of excavated soil/fill.

The Volunteer and their contractors are solely responsible for safe execution of ground-intrusive and other remedial work performed under this RAWP. The Volunteer and their contractors are solely responsible for the identification of utilities and/or easements that might be affected by the work conducted under this RAWP.

Loaded vehicles leaving the site will be appropriately lined, securely covered, manifested, and placarded in accordance with the appropriate federal, state, and local requirements, including applicable transportation requirements (i.e., New York State Department of Transportation [NYSDOT] requirements). Trucks hauling fill material will not be lined unless free liquids are present or the material is grossly impacted.

A truck wash/cleaning area will be operated on-site (see Section 4.3.8). The RE will be responsible for documenting that outbound trucks will be cleaned and/or washed at the truck inspection station, as necessary, before leaving the site until the remedial construction is complete. Locations where vehicles enter or exit the site will be inspected daily for evidence of off-site sediment tracking.

The RE will be responsible for documenting that egress points for truck and equipment transport from the site will be clean of dirt and other materials derived from the site during remediation and development. The remediation contractor will clean adjacent streets as necessary to maintain a clean condition with respect to site-derived soil/fill.

The presence of utilities and easements on the site will be investigated by the Volunteer and their contractors. The Volunteer and their contractors are responsible for safe implementation of the planned work under this RAWP.

Vehicles leaving the site will not be overloaded. The RE's representative will make reasonable efforts to observe that vehicles are not loaded beyond their NYSDOT weight rating and that material is secured beneath the truck bed cover.

The Volunteer and associated parties preparing remedial documents submitted to New York State, and the parties performing this work, are responsible for the safe performance of ground-intrusive work, the structural integrity of excavations, and for structures that may be affected by excavations (such as building foundations).

The Volunteer and associated parties will ensure that site development activities will not interfere with, or otherwise impair or compromise, remedial activities proposed in this RAWP.

Development-related grading cuts and fills will not be performed without NYSDEC approval and will not interfere with, or otherwise impair or compromise, the performance of remediation required by this RAWP.

Mechanical processing of fill and contaminated soil on-site is prohibited unless otherwise approved by NYSDEC.

Primary contaminant sources (including, but not limited to, tanks and hotspots) identified during site characterization, the RI, and implementation of the remedy will be surveyed by a surveyor licensed to practice in the State of New York. The survey information will be shown on maps to be included with the FER.

5.6.4 Soil/Fill Transport Off-site

Transport of soil/fill will be performed by licensed haulers in accordance with appropriate local, state, and federal regulations, including 6 NYCRR Part 364. Haulers will be licensed and permitted and trucks properly placarded. Trucks will enter and exit the site using dedicated ingress/egress points. Trucks loaded with soil/fill will exit the vicinity of the site using only approved truck routes. Proposed inbound and outbound truck routes to the site are shown on Figure 14. These routes take into account:

- Limiting transport through residential areas and past sensitive sites

- Use of city-mapped truck routes
- Minimization of off-site queuing of trucks entering the facility, to the extent possible
- Limiting total distance to major highways
- Promoting safety in access to highways
- Overall safety in transport

Trucks will be prohibited from excessive stopping and idling in the neighborhood outside of the site. Egress points for truck and equipment transport from the site will be kept clean of soil and historic fill during remediation and development. To the extent possible, queuing of trucks will be performed on-site to minimize off-site disturbance. Off-site queuing will be minimized.

Soil and non-native fill transported by trucks exiting the site will be secured with opaque, tight-fitting covers. Loose-fitting canvas-type or mesh truck covers will be prohibited. If loads contain wet soil and historic fill capable of producing free liquid, truck liners will be used.

5.6.5 Soil/Fill Disposal Off-site

Disposal facilities will be determined at a later date and will be reported to the NYSDEC Project Manager prior to off-site transport and disposal of excavated soil/fill. About 13,100 cubic yards of fill and soil are expected to be disposed of off-site. Soil/fill excavated and removed from the site will be handled, transported and disposed of in accordance with local, state (including 6 NYCRR Part 360) and federal regulations. If disposal of soil/fill from this site is proposed for unregulated disposal (i.e., clean soil removed for development purposes), a formal request with an associated plan will be made to NYSDEC's Project Manager. Unregulated off-site management of soil/fill from this site is prohibited without formal NYSDEC approval.

Prior to soil disposal, a waste characterization study will be performed for soil intended for off-site disposal in a manner acceptable to the receiving facilities and in conformance with applicable permits. Waste characterization data would not be validated, but the waste characterization report would be provided to NYSDEC for information purposes.

The following documentation will be obtained and reported by the RE for each disposal location used in this project to demonstrate and document that the disposal of material derived from the site conforms to applicable laws:

(1) A letter from the RE or BCP Volunteer to the receiving facility describing the material to be disposed and requesting formal written acceptance of the material. This letter will state that material to be disposed is contaminated material generated at an environmental remediation site in New York State. The letter will provide the project identity and the name and phone number of the RE. The letter will include as an attachment a summary

of all chemical data for the material being transported (including waste characterization and RI data).

(2) A letter from each receiving facility stating that it is in receipt of the correspondence (above) and acceptance of the material is approved.

These documents will be included in the FER.

Non-hazardous fill and contaminated soil transported off-site will be handled, at a minimum, as a solid waste per 6 NYCRR Part 360. Non-hazardous fill and contaminated soil excavated from the site are prohibited from being disposed of at Part 360 Registration Facilities (also known as Soil Recycling Facilities). Hazardous waste is prohibited from being sent to a construction and demolition debris handling and recovery facility (6 NYCRR Part 361-5). Hazardous wastes derived from the site will be managed, transported and disposed of in full compliance with applicable local, state and federal regulations.

Soil that is contaminated but non-hazardous and is removed from the site is considered by the NYSDEC Division of Materials Management (DMM) to be C&D materials with contamination not typical of virgin soil. Soil and non-native fill will be considered a regulated solid waste unless a BUD is processed stating otherwise. This soil may be sent to a permitted Part 360 landfill in New York or other appropriate out-of-state disposal facility permitted to accept contaminated soil from a brownfield site. This soil may be sent to a permitted C&D processing facility without permit modifications only upon prior notification of NYSDEC Region 2 DMM. This material is prohibited from being sent or redirected to a New York Part 361.5 or 360-15 Registration Facility. In this case, as dictated by DMM, special procedures will include, at a minimum, a letter to the C&D facility that provides a detailed explanation that the material is derived from an NYSDEC DER remediation site, that the material is contaminated, and that the material must not be redirected to on-site or off-site Soil Recycling Facilities. The letter will provide the project identity and the name and phone number of the RE. The letter will include as an attachment a summary of chemical data for the material being transported.

The FER will include an accounting of the destination of soil removed from the site during implementation of the remedy, including excavated soil, contaminated soil, fill, solid waste, and hazardous waste, if identified. Demolition operations, including characterization, handling and disposal of associated waste and C&D debris will not be overseen or reviewed by the RE. These operations should be performed by the contractor in accordance with applicable guidance and regulations. Documentation associated with disposal of each soil type must also include records and approvals for receipt of the soil. This information will also be presented in a table to be included in the FER.

A "Bill of Lading" system or equivalent will be used for off-site movement of non-hazardous wastes and contaminated soil. This information will be reported in the FER. Hazardous wastes derived from the site, if any, will be stored, transported, and disposed of in compliance with applicable local, state, and federal regulations.

Appropriately licensed haulers, in compliance with applicable local, state, and federal regulations, will be used to transport the material removed from this site.

5.6.6 Soil and Non-Native Fill Reuse On-Site

Soil excavated during the remedy may be reused on-site below the site cap if the requirements in this section are met. Non-hazardous non-native fill or native soil that is not grossly impacted and meets the Track 4 Site-Specific SCOs (see DER-10 Section 5.4[e]4) may be reused at the discretion of the RE and upon approval of NYSDEC. Fill will be used as backfill for the excavation from which the fill was taken without additional analytical testing, assuming no grossly-impacted soil/fill is observed. Reused soil must be non-hazardous in accordance with the predetermined beneficial use listed in 6 NYCRR 360.13. Reuse of soil will be coordinated in advance with the NYSDEC project manager. Soil/fill intended for reuse on-site will be stockpiled separately from soil/fill designated for off-site disposal.

Acceptable demolition material proposed for reuse onsite, if any, will be sampled for asbestos.

Concrete crushing or processing on-site is prohibited, unless NYSDEC has specifically approved onsite processing and reuse of acceptable demolition material.

Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing is prohibited for reuse onsite.

Contaminated on-site non-native fill and contaminated soil, removed for grading or other purposes, will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines. This will be expressed in the final SMP.

A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review. Soil acceptable for reuse must be non-hazardous and meet the lower of the RUI and PGW SCOs.

5.6.7 Fluids Management

Remedial and portions of the development-related excavation will extend below the groundwater table and dewatering will be required to lower the groundwater table below the required excavation depths. Fluids removed from the site, including dewatering fluids and LNAPL, will be handled, transported and disposed in accordance with applicable local, state, and federal regulations. A temporary dewatering and treatment system will be designed by the Remediation

Contractor's NYS-licensed PE. The Contractor will either dispose of the accumulated water at an off-site disposal facility permitted to accept the waste or discharge to the New York City sewer or NYSDEC stormwater system, following treatment and permitting.

During remedial excavation, sediment and erosion controls will be implemented to prevent groundwater encountered during excavation in saturated soil from flowing outside of the site. Trucks will be lined to contain free liquids in saturated soil from leaking out of the truck beds.

Dewatering fluids will not be recharged back to the land surface or subsurface. Dewatering fluids will be managed off-site. Discharge of water generated during remedial construction to surface waters (i.e., a local pond, stream, and/or river) is prohibited without a SPDES permit.

5.6.8 Demarcation

After the completion of soil removal and any other invasive remediation and prior to backfilling with reused site fill or imported clean fill, a land survey will be performed by a New York State licensed surveyor. The survey will define the top elevation of remaining contaminated soil. The proposed building will occupy the entire site footprint; as such, clean soil cover (i.e., landscaped areas) will not comprise the site cover system. The impermeable, continuous, concrete building slab will constitute the physical demarcation layer atop remaining contaminated soils. This demarcation layer will constitute the top of the 'Residuals Management Zone', the zone that requires adherence to special conditions for disturbance of contaminated remaining soil defined in the SMP. The survey will measure the grade covered by the demarcation layer before the placement of cover soil, pavement and sub-soil, structures, or other materials. This survey and the demarcation layer (i.e., concrete building slab) placed on this grade surface will constitute the physical and written record of the upper surface of the 'Residuals Management Zone' in the FER and SMP.

5.6.9 Backfill from Off-site Sources

Materials proposed for import onto the site will be approved by the RE and in compliance with the provisions in this RAWP prior to receipt at the site. Imported soil for backfill must meet the lower of RUI and PGW SCOs (as set forth in Table 375-6.7(d) of 6 NYCRR Part 375 and listed in Table 1) or be comprised of other acceptable fill material, such as RCA or crushed virgin stone from a permitted mine or quarry. Non-compliant soil will not be imported onto the site without prior approval by NYSDEC. Nothing in the approved RAWP or its approval by NYSDEC should be construed as an approval for this purpose. Soil, stone and RCA from industrial sites, spill sites, other environmental remediation sites, or other potentially contaminated sites will not be imported to the site. Solid waste will not be imported onto the site.

The FER will include the following certification by the RE: "I certify that all import of soil from off-site, including source evaluation, approval, and sampling, has been performed in a manner that is consistent with the methodology defined in the RAWP".

Backfill soil/fill will consist of clean fill (as described in the following paragraph) or other acceptable fill material such as RCA or crushed virgin stone from a NYSDEC-permitted mine or quarry. If RCA is imported to the site, it will be from a NYSDEC-registered facility in compliance with 6 NYCRR Part 360 registration and permitting requirements for the period of acquisition of RCA. RCA imported from compliant facilities will not require chemical testing, unless required by the NYSDEC under the terms for operation of the facility. RCA imported to the site must be derived from recognizable and uncontaminated concrete, with no more than 10% by weight passing through a No. 80 sieve.

Imported soil (e.g., clean fill) will meet the lower of the RUI and PGW SCOs. Non-compliant soil will not be imported to the site. Clean fill will be segregated at a source/facility that is free of environmental contaminants. Qualified environmental personnel will collect representative samples at a frequency consistent with NYSDEC CP-51 and DER-10. The samples will be analyzed for Part 375 VOCs, SVOCs, pesticides, herbicides, PCBs, cyanide, metals including trivalent and hexavalent chromium, PFAS and 1,4-dioxane by a NYSDOH ELAP-certified laboratory. Upon meeting these criteria, the clean fill will be transported to the site and segregated from impacted material, as necessary, on plastic sheeting until it is used as backfill.

Soil that meets 'exempt' fill requirements under 6 NYCRR Part 360, but does not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by the NYSDEC. The contents of this RAWP and NYSDEC approval of this RAWP should not be construed as an approval for this purpose.

Trucks entering the site with imported soil will be secured with tight fitting covers.

Prior to import to the site, a Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html will be prepared and submitted to the NYSDEC Project Manager allowing a minimum of five business days for review.

5.6.10 Stormwater Pollution Prevention

A SWPPP will be required for the site. Silt fencing or hay bales will be installed around the perimeter of the remedial construction area, as required. Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC. All necessary repairs to silt fencing and/or hay bales shall be made immediately. Accumulated sediments will be removed as required to keep the barrier and hay bale check functional. All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate

backfill materials. Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering. Erosion and sediment control measures identified in the RAWP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to the sewer system. Implementation of the SWPPP will mitigate the discharge of erosional sediment to New York City municipal sewer system.

5.6.11 Contingency Plan

If USTs or other previously unidentified contaminant sources are found during on-site remedial excavation or development-related construction, sampling will be performed on the source material, if encountered, and surrounding subsurface materials (e.g., sediment, soil, stone). Chemical analytical work will be for full scan parameters (TCL VOCs and SVOCs, TAL metals, PCBs, and pesticides). Analyses will not be otherwise limited without NYSDEC approval.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated to NYSDEC's Project Manager. These findings will be also detailed in daily and subsequent monthly BCP progress reports.

5.6.12 Extreme Storm Preparedness and Response Contingency Plan

Damage from flooding or storm surge can include dislocation of soil and stockpiled materials, dislocation of site structures and construction materials and equipment, and dislocation of SOE structures. Damage from wind during an extreme storm event can create unsafe or unstable structures, damage safety structures and cause downed power lines creating dangerous site conditions and loss of power. In the event of emergency conditions caused by an extreme storm event, the Volunteer will undertake the following steps for site preparedness prior to the event and response after the event.

Storm Preparedness

Preparations in advance of an extreme storm event will include the following: containerized hazardous materials and fuels will be removed from the property; loose materials will be secured to prevent dislocation and blowing by wind or water; heavy equipment such as excavators and generators will be removed from excavated areas, trenches and depressions on the property to high ground or removed from the property; an inventory of the property with photographs will be performed to establish conditions for the site and equipment prior to the event; stockpile covers for soil and fill will be secured by adding weights such as sandbags for added security and worn or ripped stockpile covers will be replaced with competent covers; stockpiled hazardous wastes will be removed from the property; stormwater management systems will be inspected and fortified, including, as necessary: clean and reposition silt fences, hay bales; clean storm sewer filters and traps; and secure and protect pumps and hosing.

Storm Response

At the conclusion of an extreme storm event, as soon as it is safe to access the property, a complete inspection of the property will be performed. A site inspection report will be submitted to NYSDEC at the completion of site inspection and after the site security is assessed. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. Damage from storm conditions that result in acute public safety threats, such as downed power lines or imminent collapse of buildings, structures or equipment will be reported to public safety authorities via appropriate means such as calling 911.

Petroleum spills will be reported to NYSDEC within 2 hours of identification and as consistent with State regulations. Public safety structures, such as construction security fences will be repaired promptly to eliminate public safety threats. Debris will be collected and removed.

Dewatering will be performed in compliance with existing laws and regulations and consistent with emergency notifications, if any, from proper authorities. Eroded areas of soil including unsafe slopes will be stabilized and fortified. Dislocated materials will be collected and appropriately managed. SOE structures will be inspected and fortified as necessary. Impacted stockpiles will be contained and damaged stockpile covers will be replaced. Stormwater control systems and structures will be inspected and maintained as necessary.

If soil or fill materials are discharged off site to adjacent properties, property owners and NYSDEC will be notified, and a corrective measure plan designed to remove and clean dislocated material will be submitted to NYSDEC and implemented following approval by NYSDEC and granting of site access by the property owner. Impacted offsite areas may require characterization based on site conditions, at the discretion of NYSDEC.

If onsite petroleum spills are identified, a QEP will determine the nature and extent of the spill and report to NYSDEC's spill hotline at (800) 457-7362 within statutory defined timelines. If the source of the spill is ongoing and can be identified, it should be stopped if this can be done safely. Potential hazards will be addressed immediately, consistent with guidance issued by NYSDEC.

Storm Response Reporting

A site inspection report will be submitted to NYSDEC at the completion of site inspection. An inspection report will be used for this purpose. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. The site inspection report will be sent to the NYSDEC project manager and will include the site name, address, tax block and lot, site primary and alternate contact name and phone number.

Damage and soil release assessment will include: whether the project had stockpiles; whether stockpiles were damaged; photographs of damage and notice of plan for repair; report of whether soil from the site was dislocated and whether any of the soil left the site; estimates of the volume of soil that left the site, nature of impact, and photographs; description of erosion damage; description of equipment damage; description of damage to the remedial program or the construction program, such as damage to the SOE; presence of onsite or offsite exposure pathways caused by the storm; presence of petroleum or other spills and status of spill reporting to NYSDEC; description of corrective actions; schedule for corrective actions.

This report should be completed and submitted to NYSDEC project manager with photographs within 24 hours of the time of safe entry to the property after the storm event.

5.6.13 Community Air Monitoring Plan

Community air monitoring will be conducted in compliance with the NYSDOH Generic CAMP outlined below and included in Appendix E. CAMP will be implemented during instructive work within site soil/fill. CAMP will cease after completion of the defined remedial excavation, unless another source of contamination is identified.

The CAMP includes real-time monitoring for VOCs and particulates at the downwind perimeter of ground-intrusive activities. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling and advancement of trenches and test pits. Periodic monitoring for VOCs is required during non-intrusive activities such as the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of collecting a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well bailing/purging, and collecting a reading before leaving a sample location.

CAMP monitoring for VOC levels will be conducted with PIDs, and monitoring for dust/particulates will be conducted with particulate sensors equipped with filters to detect particulate matter less than 10 microns in diameter (PM10). Monitoring for particulates and odors will be conducted during all ground intrusive activities by the RE's field inspector. The work zone is defined as the general area in which machinery is operating in support of remediation. A portable PID will be used to monitor the work zone and for periodic monitoring of VOCs during activities such as soil and groundwater sampling. The site perimeter will be visually monitored for fugitive dust emissions.

The following actions will be taken based on measured VOC levels:

- If total VOC levels exceed 5 ppm above background for the 15-minute average at the perimeter, work will be temporarily halted and monitoring continued. If levels readily

decrease (per instantaneous readings) below 5 ppm above background, work will resume with continued monitoring.

- If total VOC levels at the downwind perimeter of the work zone persist at levels in excess of 5 ppm above background but less than 25 ppm, work will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps work will resume provided that the total organic vapor level 200 feet downwind of the work zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less – but in no case less than 20 feet, is below 5 ppm above background for the 15-minute average.
- If the total VOC level is above 25 ppm at the perimeter of the work zone, work will be shut down.

The following actions will be taken based on measured particulate levels and visual dust observations:

- If the downwind particulate level is 100 µg/m³ greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work zone, then dust suppression must be employed. Work may continue with dust suppression techniques provided that 15-minute average downwind PM10 levels do not exceed 150 µg/m³ above the background level and provided that no visible dust is migrating from the work zone.
- If, after implementation of dust suppression techniques, 15-minute average downwind PM10 levels are greater than 150 µg/m³ above the background level, work must be stopped and a re-evaluation of work initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind 15-minute average PM10 concentration to within 150 µg/m³ of the upwind level and in preventing visible dust migration.

Due to VOC impacts present at the site, special requirements for work within 20 feet of potentially exposed individuals or structures have been established. If work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of ECs will be considered to prevent exposures related to the work activities and to control dust and odors.

- If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s). Background readings in the occupied spaces must be taken prior to commencement of

the planned work. Any unusual background readings should be discussed with NYSDOH prior to commencement of the work.

If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 µg/m^3, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 µg/m^3 or less at the monitoring point.

Sustained concentrations of VOCs or PM10 will be reported to the NYSDEC and NYSDOH Project Managers and included in the daily report. In addition, a map showing the location of the downwind and upwind CAMP stations will be included in the daily report.

5.6.14 Odor, Dust, and Nuisance Control Plan

Dust, odor, and nuisance control will be accomplished by the Contractor as described in this section. Invasive development work will be conducted in accordance with dust and odor suppression methodology defined in the RAWP.

5.6.14.1 Odor Control Plan

This odor control plan is capable of controlling emissions of nuisance odors off-site. Specific odor control methods to be used on a routine basis will include application of foam suppressants or tarps over the odorous or VOC source areas. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until nuisance odors are abated. The NYSDEC and NYSDOH will be notified of all odor events and of all other complaints about the project. Documentation of odor and vapor controls, including notifying the Contractor and owner of potential halt of work conditions, will be the responsibility of the RE, who is responsible for certifying the FER. Application of odor controls is the responsibility of the Contractor.

All necessary means will be employed to prevent on- and off-site nuisances. If odors develop and cannot be otherwise controlled, means to eliminate nuisance conditions may include: (a) shrouding open excavations with tarps and other covers; (b) use of odor-suppressing foam; (c) use of chemical odorants in spray or misting systems; and, (d) use of staff to monitor odors in the surrounding neighborhood.

5.6.14.2 Dust Control Plan

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of dedicated on-site water spraying for road wetting. Where required, the water source will be equipped with a water cannon,

as required, capable of spraying water directly onto off-road areas including excavations and stockpiles.

- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, un-vegetated soil vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water spraying.

5.6.14.3 Other Nuisances

A plan for rodent control will be developed and used by the remediation contractor during site preparation (including clearing and grubbing) and during remedial work.

A plan for noise control will be developed and used by the remediation contractor during site preparation and remedial work and will conform, at a minimum, to the NYCDEP noise control standards.

6.0 RESIDUAL CONTAMINATION TO REMAIN ON-SITE

Since remaining contaminated soil, groundwater, and soil vapor will exist beneath the site after the Track 4 remedy is complete, ECs and ICs are required to protect human health and the environment. These ECs and ICs are described hereafter. Long-term management of EC/ICs and of remaining contamination will be executed under a site-specific SMP that will be developed and included in the FER.

ECs will be implemented to protect public health and the environment by appropriately managing remaining contamination. The site will have two primary EC systems: 1) a site cover system; and 2) a soil vapor mitigation system consisting of an active SMD system on the portions of the site not occupied by a mechanically-ventilated parking garage.

The SMP and FER will provide tables and figures documenting remaining contamination at the site. This will include presentation of concentrations exceeding both UU and RUI SCOs and the PGW SCOs for contaminants detected above the SGVs in groundwater in areas in which source remediation was conducted.

7.0 ENGINEERING CONTROLS

Following completion of the Track 4 remedy, it is anticipated that residual soil and groundwater contamination will remain on the site. ECs will include an engineered cover system and an SMD system is areas not occupied by a mechanically-ventilated parking garage.

7.1 Site Cover System

Exposure to residual soil/fill and groundwater will be prevented by an engineered site cover system. The site cover system will be comprised of a reinforced concrete slab that covers the entire site. The proposed slab thickness will range from a maximum thickness of 22-inches-thick within the cellar to 8-inches-thick within the slab-on-grade ground-floor areas. Proposed development plans are provided in Appendix B.

The site cover system will be a permanent EC. It will be inspected and its performance certified at specified intervals as required by the SMP. The SMP (to be included in the FER) will outline maintenance requirements and the procedures to be followed in the event that the site cover system is disturbed after the remedial action is complete. A site survey will be conducted to document the location of residual contamination. A site cover system plan is shown on Figure 12.

7.2 SMD System

An active SMD system will be designed for installation below the cellar and ground-floor areas outside of the mechanically-ventilated parking garage to mitigate SVI from remaining on-site or off-site vapor contaminant sources. The SMD system will be installed below the mechanical rooms and storage spaces within the cellar and below the concrete slab-on-grade portions of the ground floor. The SMD system will not be installed beneath the mechanically-ventilated parking garage because NYCDOB Mechanical Code requires sufficient air exchanges that prevent accumulation of vapors in garages. The SMD system will be designed and developed in general accordance with the NYSDOH 2006 Guidance document. The system will consist of a sub-slab collection layer and vapor conveyance piping overlain by a continuous vapor barrier. Permanent vapor monitoring points will be incorporated into the SMD system to monitor differential pressure beneath the building slab and serve as potential sub-slab vapor sampling points. A PE-certified SMD system design will be prepared and provided in a subsequent technical memorandum. All as-built drawings, diagrams, calculation and manufacturer documentation for the system will be submitted to the NYSDEC and NYSDOH for review and presented in the FER. The proposed conceptual SMD layout based on the development plan and the extent of the mechanically-ventilated parking garage are included on Figure 13.

The SMP will include the necessary drawings and specifications to commission the SMD system and provisions for system operation and indoor air monitoring. After startup of the SMD system, a pressure field extension test will be conducted to verify existence of sufficient vacuum beneath

the slab. Post-mitigation indoor air sampling will be conducted to demonstrate the SMD system is operating as designed. The SMP will also describe procedures to be followed if the SMD system is disturbed after its installation is complete. Maintenance of the SMD system will be described in the SMP.

7.3 Criteria for Completion of Remediation / Termination of Remedial Systems

7.3.1 Site Cover System

The composite cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in perpetuity, and following any significant storm and/or flooding events that has the potential to compromise the system. A composite cover system plan is shown on Figure 12. The frequency of inspections will be defined in the SMP.

7.3.2 SMD System

The SMD system will not be deactivated without written approval by both the NYSDEC and NYSDOH. A proposal to deactivate the SMD system may be submitted by the property owner based on confirmatory data that justifies such request. The system will remain in place and operational until permission to discontinue use is granted in writing by the NYSDEC and NYSDOH.

7.3.3 Groundwater Monitoring

Groundwater monitoring to assess the performance of the remedy, or natural attenuation following the removal of contaminant sources, will continue, as determined by the NYSDEC and NYSDOH, until the groundwater RAOs are achieved. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC and NYSDOH. Monitoring activities will be outlined in the Monitoring Plan of the SMP. The results of long-term performance monitoring will be used to determine whether additional future groundwater treatment will be necessary. The proposed groundwater monitoring well location are shown on Figure 10 and are subject to change as the building design progresses.

8.0 INSTITUTIONAL CONTROLS

After the remedy is complete, the site will have remaining contamination. ECs have been incorporated into the remedy to render the overall site remedy protective of public health and the environment. An SMP will be prepared and a site-specific EE will be recorded with the Brooklyn Office of the City Register to provide an enforceable means for continual and proper management of remaining contamination and protection of public health and the environment in perpetuity or until released in writing by the NYSDEC. The easement will require that the grantor and the grantor's successors and assigns adhere to all ECs and ICs placed on this site. ICs provide restrictions on site usage and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. The SMP will describe appropriate methods and procedures to maintain and protect ECs and ICs that are required by the EE. Once the SMP is approved by the NYSDEC, compliance with the SMP will be required by the grantor of the EE and grantor's successors and assigns.

8.1 Environmental Easement

An EE, as defined in Article 71 Title 36 of the ECL, is required when remaining contamination is left on-site after the remedy is complete. A Track 4 remedy requires that an EE approved by the NYSDEC be recorded with the Brooklyn Office at the City Registry before the COC can be issued by the NYSDEC. The EE will be submitted as part of the FER.

The EE renders the site a Controlled Property. The easement will list the ECs and ICs required under this remedy to prevent future exposure to remaining contamination, including controlling disturbances of the subsurface remaining contamination and restricting the use of the site to industrial uses only. The ICs are generally subdivided between controls that support ECs and those that place general restrictions on site usage or other requirements. ICs in both of these groups are closely integrated with the SMP, which provides the methods and procedures to be followed to comply with this remedy.

The ICs that support ECs are:

- Compliance with the EE by the grantor and the grantor's successors and adherence of all elements of the SMP is required
- ECs must be operated and maintained as specified in the SMP
- A site cover system consisting of a reinforced concrete building slab must be inspected, certified, and maintained as required in the SMP
- A soil vapor mitigation system consisting of an SMD system installed below mechanical storage spaces within the cellar and below the concrete slab-on-grade portions of the

ground floor must be inspected, certified, operated, and maintained as required by the SMP

- ECs on the Controlled Property must be inspected and certified at a frequency and in a manner defined in the SMP
- Groundwater and other environmental or public health monitoring must be performed as defined in the SMP
- Data and information pertinent to site management must be reported at the frequency and in a manner defined in the SMP
- On-site environmental monitoring and SMD devices, including but not limited to, groundwater monitoring wells and SMD system blower(s) (if installed), must be protected and replaced as necessary to ensure proper functioning in the manner specified in the SMP
- ECs may not be discontinued without an amendment or extinguishment of the EE.

Adherence to these ICs for the site is mandated by the EE and will be implemented under the SMP (discussed in the next section). The use restrictions that apply to the site are:

- Vegetable gardens and farming in remaining site soil on the Controlled Property are prohibited
- Use of groundwater underlying the Controlled Property is prohibited without treatment rendering it safe for the intended purpose
- All future activities on the Controlled Property that will disturb remaining contaminated soil and non-native soil are prohibited unless they are conducted in accordance with the soil management provisions in the SMP
- The Controlled Property may be used for industrial use only, provided the long-term ECs and ICs included in the SMP are employed
- The Controlled Property may not be used for a higher level of use without an amendment or extinguishment of the EE
- Grantor agrees to submit to the NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. The NYSDEC retains the right to access the site at any time in order to evaluate the continued

maintenance of any and all controls. This certification shall be submitted annually, or at a specified frequency allowed by the NYSDEC.

8.2 Site Management Plan

A Track 4 remedy requires an SMP. Site management is the last phase of remediation and begins with the approval of the FER and issuance of the COC for the remedy. The finalized SMP is included as part of the FER, but will be written in a manner that allows its removal and use as a complete and independent document. Site management continues in perpetuity or until released in writing by the NYSDEC. The property owner is responsible for all site management responsibilities defined in the EE and performance of the SMP.

The SMP is intended to provide a detailed description of the procedures required to manage remaining contamination left in place at the site following completion of the remedy in accordance with the NYSDEC BCA. This includes: (1) development, implementation, and management of all ECs and ICs; (2) development and implementation of monitoring systems and a Monitoring Plan; (3) development of a plan to operate and maintain any treatment, collection, containment, recovery or other mechanical systems (including, where appropriate, preparation of an Operation and Maintenance Manual); (4) submittal of Site Management Reports, performance of inspections and certification of results, and demonstration of proper communication of site information to the NYSDEC; and (5) defining criteria for termination of treatment or other mechanical system operation.

To address these needs, this SMP will include three plans: (1) an EC and IC Plan for implementation and management of EC/ICs; (2) a Monitoring Plan for implementation of Site Monitoring; and (3) a Site Management Reporting Plan for submittal of data, information, recommendations, and certifications to NYSDEC. The SMP will be prepared in accordance with the requirements in NYSDEC DER-10 and the guidelines provided by the NYSDEC.

Site management activities, reporting, and EC/IC certification will be scheduled on a periodic basis, and will be submitted in a Periodic Review Report. The certification period will be determined by NYSDEC and the initial submittal will be 15 months after issuance of the COC.

No exclusions for handling of remaining contaminated soil will be provided in the SMP. All handling of remaining contaminated soil and non-native soil will be subject to provisions contained in the SMP.

9.0 FINAL ENGINEERING REPORT

An FER will be submitted to NYSDEC following implementation of the Remedial Action defined in this RAWP. The FER provides the documentation that the remedial work required under this RAWP has been completed and has been performed in compliance with this plan. The FER will provide a comprehensive account of the locations and characteristics of all material removed from the site including the surveyed map(s) of all sources. The FER will include as-built drawings for all constructed elements, calculation and manufacturer documentation for treatment systems, certifications, manifests, bills of lading as well as the complete SMP. The FER will provide a description of the changes in the Remedial Action from the elements provided in the RAWP and associated design documents. The FER will provide a tabular summary of all performance evaluation sampling results and all material characterization results and other sampling, and chemical analysis performed as part of the Remedial Action. The FER will provide test results demonstrating that all mitigation and remedial systems are functioning properly. The FER will be prepared in conformance with DER-10.

Where determined to be necessary by the NYSDEC, a Financial Assurance Plan will be required to ensure the sufficiency of revenue to perform long-term operations, maintenance and monitoring tasks defined in the SMP and EE. This determination will be made by the NYSDEC in the context of the FER review.

The FER will include written and photographic documentation of all remedial work performed under this remedy and an estimate of remedial costs.

The FER will provide a thorough summary of all residual contamination left on the site after the remedy is complete. Residual contamination includes all contamination that exceeds the Track 4 RUI SCO in 6 NYCRR Part 375-6. A table that shows exceedances from Track 4 RUI SCOs for all soil/fill remaining at the site after the Remedial Action and a map that shows the location and summarizes exceedances from Track 4 RUI SCOs for all soil/fill remaining at the site after the Remedial Action will be included in the FER.

The FER will include an accounting of the destination of all material removed from the site, including excavated contaminated soil, non-native fill, solid waste, hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material must also include records and approvals for receipt of the material. It will provide an accounting of the origin and chemical quality of all material imported onto the site.

The FER must include a discussion of the green remediation practices/technologies employed throughout the remedial program. A final footprint analysis using a DER accepted model, and any tracking methods used through the construction including restoration activities. Before

approval of a FER and issuance of a COC, all project reports must be submitted in digital form on electronic media (PDF).

9.1 Certifications

The following certification will appear in front of the Executive Summary of the FER. The certification will be signed by the RE, Gerald Nicholls, who is a PE registered in New York State. This certification will be appropriately signed and stamped. The certification will include the following statements:

I, _____, am currently a registered PE licensed by the State of New York. I had primary direct responsibility for implementation of the remedial program for the 145-165 Wolcott Street site (NYSDEC BCP Site No. C224256).

I certify that the site description presented in this FER is identical to the site descriptions presented in the EE, the SMP, and the BCA for 145-165 Wolcott Street site and related amendments.

I certify that the RAWP dated [month day year] and Stipulations [if any] in a letter dated [month day year] and approved by the NYSDEC were implemented and that all requirements in those documents have been substantively complied with.

I certify that the remedial activities were observed by engineers, geologists and scientists under my supervision and that the remediation requirements set forth in the RAWP and any other relevant provisions of ECL 27-1419 have been achieved.

I certify that all use restrictions, ICs, ECs, and all operation and maintenance requirements applicable to the site are contained in an EE created and recorded pursuant ECL 71-3605 and that all affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded. An SMP has been submitted by the Volunteer for the continual and proper operation, maintenance, and monitoring of all ECs employed at the site, including the proper maintenance of all remaining monitoring wells, and that such plan has been approved by the NYSDEC.

I certify that the export of all contaminated soil, fill, and liquids from the property was performed in accordance with the RAWP, and were taken to facilities licensed to accept this material in full compliance with all Federal, State and local laws.

I certify that all import of soil from off-site was performed in accordance with the RAWP.

I certify that all invasive work during the remediation and all invasive development work were conducted in accordance with dust and odor suppression methodology and soil screening methodology defined in the RAWP.

I certify that all information and statements in this certification are true. I understand that a false statement made herein is punishable as Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

It is a violation of Article 130 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 130, New York State Education Law.

10.0 SCHEDULE

Implementation of the remedy is anticipated to begin in 2025 and be completed in 2026. After completion of remediation, an FER will be submitted to the NYSDEC as detailed in Section 9.0. A remedial action construction schedule is included in Appendix K.

Appendix V:

Waterfront Revitalization Program (WRP) Assessment

FOR INTERNAL USE ONLY	WRP No. _____
Date Received: _____	DOS No. _____

NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM
Consistency Assessment Form

Proposed actions that are subject to CEQR, ULURP or other local, state or federal discretionary review procedures, and that are within New York City's Coastal Zone, must be reviewed and assessed for their consistency with the *New York City Waterfront Revitalization Program (WRP)* which has been approved as part of the State's Coastal Management Program.

This form is intended to assist an applicant in certifying that the proposed activity is consistent with the WRP. It should be completed when the local, state, or federal application is prepared. The completed form and accompanying information will be used by the New York State Department of State, the New York City Department of City Planning, or other city or state agencies in their review of the applicant's certification of consistency.

A. APPLICANT INFORMATION

Name of Applicant: NYM 145 Wolcott, LLC

Name of Applicant Representative: Susi Yu

Address: 279 Broadway, 10th Floor

Telephone: [redacted] Email: [redacted]

Project site owner (if different than above): _____

B. PROPOSED ACTIVITY

If more space is needed, include as an attachment.

1. Brief description of activity

The Applicant, NYM 145 Wolcott LLC, is seeking an authorization by the City Planning Commission pursuant to Section 75-21 of the Zoning Resolution of the City of New York for modifications to applicable bulk regulations for an otherwise as-of-right production studio development at 176 Dikeman Street (Brooklyn Block 574, Lots 1, 30, and 31). The Applicant proposes to construct the Proposed Development, an approximately 244,568-gross-square-foot (167,028 zoning square feet, 1.97 FAR) facility to be used as a production studio. The Proposed Development, which would consist of four sound stages that would be able to support two productions, aims to fill the demand for a state-of-the-art purpose-built production facility. The Proposed Development would also contain approximately 202 parking spaces and five loading berths.

2. Purpose of activity

While the production studio would be built under both the No-Action and With-Action condition, the proposed zoning authorization would allow for better layouts for the production studio proposed to be developed at the Development Site. By permitting a higher base height, reducing the required setback, and removing the rear-yard-equivalent requirement, the Proposed Development will be able to meet the minimum depth required for an optimal sound stage and locate more ancillary support spaces within the Proposed Development. The Authorization was created in the Text Amendment specifically to allow for new production studios like the Proposed Development to be developed with more flexible zoning regulations.

C. PROJECT LOCATION

Borough: Brooklyn Tax Block/Lot(s): Block 574, Lots 1, 30 and 31

Street Address: 176 Dikeman Street, Brooklyn, NY 11231

Name of water body (if located on the waterfront): _____

D. REQUIRED ACTIONS OR APPROVALS

Check all that apply.

City Actions/Approvals/Funding

City Planning Commission ☑ Yes ☐ No

- ☐ City Map Amendment
- ☐ Zoning Map Amendment
- ☐ Zoning Text Amendment
- ☐ Site Selection – Public Facility
- ☐ Housing Plan & Project
- ☐ Special Permit
  (if appropriate, specify type: ☐ Modification ☐ Renewal ☐ other) Expiration Date: _____
- ☐ Zoning Certification
- ☑ Zoning Authorizations
- ☐ Acquisition – Real Property
- ☐ Disposition – Real Property
- ☐ Other, explain: _____
- ☐ Concession
- ☐ UDAAP
- ☐ Revocable Consent
- ☐ Franchise

Board of Standards and Appeals ☐ Yes ☑ No

- ☐ Variance (use)
- ☐ Variance (bulk)
- ☐ Special Permit
  (if appropriate, specify type: ☐ Modification ☐ Renewal ☐ other) Expiration Date: _____

Other City Approvals

- ☐ Legislation
- ☐ Rulemaking
- ☐ Construction of Public Facilities
- ☐ 384 (b) (4) Approval
- ☐ Other, explain: _____
- ☐ Funding for Construction, specify: _____
- ☐ Policy or Plan, specify: _____
- ☐ Funding of Program, specify: _____
- ☐ Permits, specify: _____

State Actions/Approvals/Funding

- ☑ State permit or license, specify Agency: NYSDEC Permit type and number: Brownfield Cleanup Program #C224256
- ☐ Funding for Construction, specify: _____
- ☐ Funding of a Program, specify: _____
- ☐ Other, explain: _____

Federal Actions/Approvals/Funding

- ☐ Federal permit or license, specify Agency: _____ Permit type and number: _____
- ☐ Funding for Construction, specify: _____
- ☐ Funding of a Program, specify: _____
- ☐ Other, explain: _____

Is this being reviewed in conjunction with a Joint Application for Permits? ☐ Yes ☑ No

E. LOCATION QUESTIONS

1.	Does the project require a waterfront site?	☐ Yes	☑ No
2.	Would the action result in a physical alteration to a waterfront site, including land along the shoreline, land under water or coastal waters?	☐ Yes	☑ No
3.	Is the project located on publicly owned land or receiving public assistance?	☐ Yes	☑ No
4.	Is the project located within a FEMA 1% annual chance floodplain? *(6.2)*	☑ Yes	☐ No
5.	Is the project located within a FEMA 0.2% annual chance floodplain? *(6.2)*	☑ Yes	☐ No
6.	Is the project located adjacent to or within a special area designation? *See Maps – Part III of the NYC WRP. If so, check appropriate boxes below and evaluate policies noted in parentheses as part of WRP Policy Assessment (Section F).*	☑ Yes	☐ No

- ☑ Significant Maritime and Industrial Area (SMIA) (*2.1*)
- ☐ Special Natural Waterfront Area (SNWA) (*4.1*)
- ☐ Priority Maritime Activity Zone (PMAZ) (*3.5*)
- ☐ Recognized Ecological Complex (REC) (*4.4*)
- ☐ West Shore Ecologically Sensitive Maritime and Industrial Area (ESMIA) (*2.2, 4.2*)

F. WRP POLICY ASSESSMENT

Review the project or action for consistency with the WRP policies. For each policy, check Promote, Hinder *or* Not Applicable (N/A). *For more information about consistency review process and determination, see* ***Part I*** *of the NYC Waterfront Revitalization Program. When assessing each policy, review the full policy language, including all sub-policies, contained within* ***Part II*** *of the WRP. The relevance of each applicable policy may vary depending upon the project type and where it is located (i.e. if it is located within one of the special area designations).*

For those policies checked Promote *or* Hinder, *provide a written statement on a separate page that assesses the effects of the proposed activity on the relevant policies or standards. If the project or action promotes a policy, explain how the action would be consistent with the goals of the policy. If it hinders a policy, consideration should be given toward any practical means of altering or modifying the project to eliminate the hindrance. Policies that would be advanced by the project should be balanced against those that would be hindered by the project. If reasonable modifications to eliminate the hindrance are not possible, consideration should be given as to whether the hindrance is of such a degree as to be substantial, and if so, those adverse effects should be mitigated to the extent practicable.*

		Promote	Hinder	N/A
1	**Support and facilitate commercial and residential redevelopment in areas well-suited to such development.**	☑	☐	☐
1.1	Encourage commercial and residential redevelopment in appropriate Coastal Zone areas.	☑	☐	☐
1.2	Encourage non-industrial development with uses and design features that enliven the waterfront and attract the public.	☐	☐	☑
1.3	Encourage redevelopment in the Coastal Zone where public facilities and infrastructure are adequate or will be developed.	☑	☐	☐
1.4	In areas adjacent to SMIAs, ensure new residential development maximizes compatibility with existing adjacent maritime and industrial uses.	☐	☐	☑
1.5	Integrate consideration of climate change and sea level rise into the planning and design of waterfront residential and commercial development, pursuant to WRP Policy 6.2.	☑	☐	☐

		Promote	Hinder	N/A
2	**Support water-dependent and industrial uses in New York City coastal areas that are well-suited to their continued operation.**	☐	☐	☑
2.1	Promote water-dependent and industrial uses in Significant Maritime and Industrial Areas.	☐	☐	☑
2.2	Encourage a compatible relationship between working waterfront uses, upland development and natural resources within the Ecologically Sensitive Maritime and Industrial Area.	☐	☐	☑
2.3	Encourage working waterfront uses at appropriate sites outside the Significant Maritime and Industrial Areas or Ecologically Sensitive Maritime Industrial Area.	☐	☐	☑
2.4	Provide infrastructure improvements necessary to support working waterfront uses.	☐	☐	☑
2.5	Incorporate consideration of climate change and sea level rise into the planning and design of waterfront industrial development and infrastructure, pursuant to WRP Policy 6.2.	☐	☐	☑
3	**Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation.**	☐	☐	☑
3.1.	Support and encourage in-water recreational activities in suitable locations.	☐	☐	☑
3.2	Support and encourage recreational, educational and commercial boating in New York City's maritime centers.	☐	☐	☑
3.3	Minimize conflicts between recreational boating and commercial ship operations.	☐	☐	☑
3.4	Minimize impact of commercial and recreational boating activities on the aquatic environment and surrounding land and water uses.	☐	☐	☑
3.5	In Priority Marine Activity Zones, support the ongoing maintenance of maritime infrastructure for water-dependent uses.	☐	☐	☑
4	**Protect and restore the quality and function of ecological systems within the New York City coastal area.**	☐	☐	☑
4.1	Protect and restore the ecological quality and component habitats and resources within the Special Natural Waterfront Areas.	☐	☐	☑
4.2	Protect and restore the ecological quality and component habitats and resources within the Ecologically Sensitive Maritime and Industrial Area.	☐	☐	☑
4.3	Protect designated Significant Coastal Fish and Wildlife Habitats.	☐	☐	☑
4.4	Identify, remediate and restore ecological functions within Recognized Ecological Complexes.	☐	☐	☑
4.5	Protect and restore tidal and freshwater wetlands.	☐	☐	☑
4.6	In addition to wetlands, seek opportunities to create a mosaic of habitats with high ecological value and function that provide environmental and societal benefits. Restoration should strive to incorporate multiple habitat characteristics to achieve the greatest ecological benefit at a single location.	☐	☐	☑
4.7	Protect vulnerable plant, fish and wildlife species, and rare ecological communities. Design and develop land and water uses to maximize their integration or compatibility with the identified ecological community.	☐	☐	☑
4.8	Maintain and protect living aquatic resources.	☐	☐	☑

		Promote	Hinder	N/A
5	**Protect and improve water quality in the New York City coastal area.**	☐	☐	☑
5.1	Manage direct or indirect discharges to waterbodies.	☐	☐	☑
5.2	Protect the quality of New York City's waters by managing activities that generate nonpoint source pollution.	☐	☐	☑
5.3	Protect water quality when excavating or placing fill in navigable waters and in or near marshes, estuaries, tidal marshes, and wetlands.	☐	☐	☑
5.4	Protect the quality and quantity of groundwater, streams, and the sources of water for wetlands.	☐	☐	☑
5.5	Protect and improve water quality through cost-effective grey-infrastructure and in-water ecological strategies.	☐	☐	☑
6	**Minimize loss of life, structures, infrastructure, and natural resources caused by flooding and erosion, and increase resilience to future conditions created by climate change.**	☑	☐	☐
6.1	Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the site, the use of the property to be protected, and the surrounding area.	☑	☐	☐
6.2	Integrate consideration of the latest New York City projections of climate change and sea level rise (as published in *New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms*) into the planning and design of projects in the city's Coastal Zone.	☑	☐	☐
6.3	Direct public funding for flood prevention or erosion control measures to those locations where the investment will yield significant public benefit.	☐	☐	☑
6.4	Protect and preserve non-renewable sources of sand for beach nourishment.	☐	☐	☑
7	**Minimize environmental degradation and negative impacts on public health from solid waste, toxic pollutants, hazardous materials, and industrial materials that may pose risks to the environment and public health and safety.**	☑	☐	☐
7.1	Manage solid waste material, hazardous wastes, toxic pollutants, substances hazardous to the environment, and the unenclosed storage of industrial materials to protect public health, control pollution and prevent degradation of coastal ecosystems.	☑	☐	☐
7.2	Prevent and remediate discharge of petroleum products.	☑	☐	☐
7.3	Transport solid waste and hazardous materials and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.	☑	☐	☐
8	**Provide public access to, from, and along New York City's coastal waters.**	☐	☐	☐
8.1	Preserve, protect, maintain, and enhance physical, visual and recreational access to the waterfront.	☐	☐	☐
8.2	Incorporate public access into new public and private development where compatible with proposed land use and coastal location.	☐	☐	☐
8.3	Provide visual access to the waterfront where physically practical.	☐	☐	☐
8.4	Preserve and develop waterfront open space and recreation on publicly owned land at suitable locations.	☐	☐	☐

		Promote	Hinder	N/A
8.5	Preserve the public interest in and use of lands and waters held in public trust by the State and City.	☐	☐	☐
8.6	Design waterfront public spaces to encourage the waterfront's identity and encourage stewardship.	☐	☐	☐
9	**Protect scenic resources that contribute to the visual quality of the New York City coastal area.**	☐	☐	☐
9.1	Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.	☐	☐	☐
9.2	Protect and enhance scenic values associated with natural resources.	☐	☐	☐
10	**Protect, preserve, and enhance resources significant to the historical, archaeological, architectural, and cultural legacy of the New York City coastal area.**	☐	☐	☐
10.1	Retain and preserve historic resources, and enhance resources significant to the coastal culture of New York City.	☐	☐	☐
10.2	Protect and preserve archaeological resources and artifacts.	☐	☐	☐

G. CERTIFICATION

The applicant or agent must certify that the proposed activity is consistent with New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program. If this certification cannot be made, the proposed activity shall not be undertaken. If this certification can be made, complete this Section.

"The proposed activity complies with New York State's approved Coastal Management Program as expressed in New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program, and will be conducted in a manner consistent with such program."

Applicant/Agent's Name: Bungalow Projects, on behalf of NYM 145 Wolcott, LLC

Address: 233 Broadway, 10th Floor, New York, NY 10279

Telephone: 917-816-8171 Email: syu@bungalowre.com

Applicant/Agent's Signature: _____

Date: 1/29/25

Submission Requirements

For all actions requiring City Planning Commission approval, materials should be submitted to the Department of City Planning.

For local actions not requiring City Planning Commission review, the applicant or agent shall submit materials to the Lead Agency responsible for environmental review. A copy should also be sent to the Department of City Planning.

For State actions or funding, the Lead Agency responsible for environmental review should transmit its WRP consistency assessment to the Department of City Planning.

For Federal direct actions, funding, or permits applications, including Joint Applicants for Permits, the applicant or agent shall also submit a copy of this completed form along with his/her application to the NYS Department of State Office of Planning and Development and other relevant state and federal agencies. A copy of the application should be provided to the NYC Department of City Planning.

The Department of City Planning is also available for consultation and advisement regarding WRP consistency procedural matters.

New York City Department of City Planning
Waterfront and Open Space Division
120 Broadway, 31st Floor
New York, New York 10271
212-720-3696
wrp@planning.nyc.gov
www.nyc.gov/wrp

New York State Department of State
Office of Planning and Development
Suite 1010
One Commerce Place, 99 Washington Avenue
Albany, New York 12231-0001
518-474-6000
www.dos.ny.gov/opd/programs/consistency

Applicant Checklist

- ☑ Copy of original signed NYC Consistency Assessment Form
- ☑ Attachment with consistency assessment statements for all relevant policies
- ☐ For Joint Applications for Permits, one (1) copy of the complete application package
- ☑ Environmental Review documents
- ☑ Drawings (plans, sections, elevations), surveys, photographs, maps, or other information or materials which would support the certification of consistency and are not included in other documents submitted. All drawings should be clearly labeled and at a scale that is legible.
- ☑ Policy 6.2 Flood Elevation worksheet, if applicable. For guidance on applicability, refer to the WRP Policy 6.2 Guidance document available at www.nyc.gov/wrp

The Applicant is proposing an authorization (the "Proposed Action") by the City Planning Commission ("CPC") pursuant to Section 75-21 of the Zoning Resolution ("ZR") of the City of New York for modifications to applicable bulk regulations for an otherwise as-of-right production studio development at 176 Dikeman Street (Brooklyn Block 574, Lots 1, 30 and 31; the "Development Site" or the "Project Area"). The Proposed Action would facilitate the construction of the Proposed Development, an approximately 244,568-gross-square-foot (gsf) facility to be used as a production studio. The Proposed Development, which would consist of four soundstages that would be able to support two productions, aims to fill the demand for a state-of-the-art purpose-built production facility. In the future without the Proposed Action, it is anticipated that the Development Site would be redeveloped with a production studio similar in size and capacity to the Proposed Development, but the height, setback, and rear yard regulations would be consistent with the current underlying M2-1 zoning district.

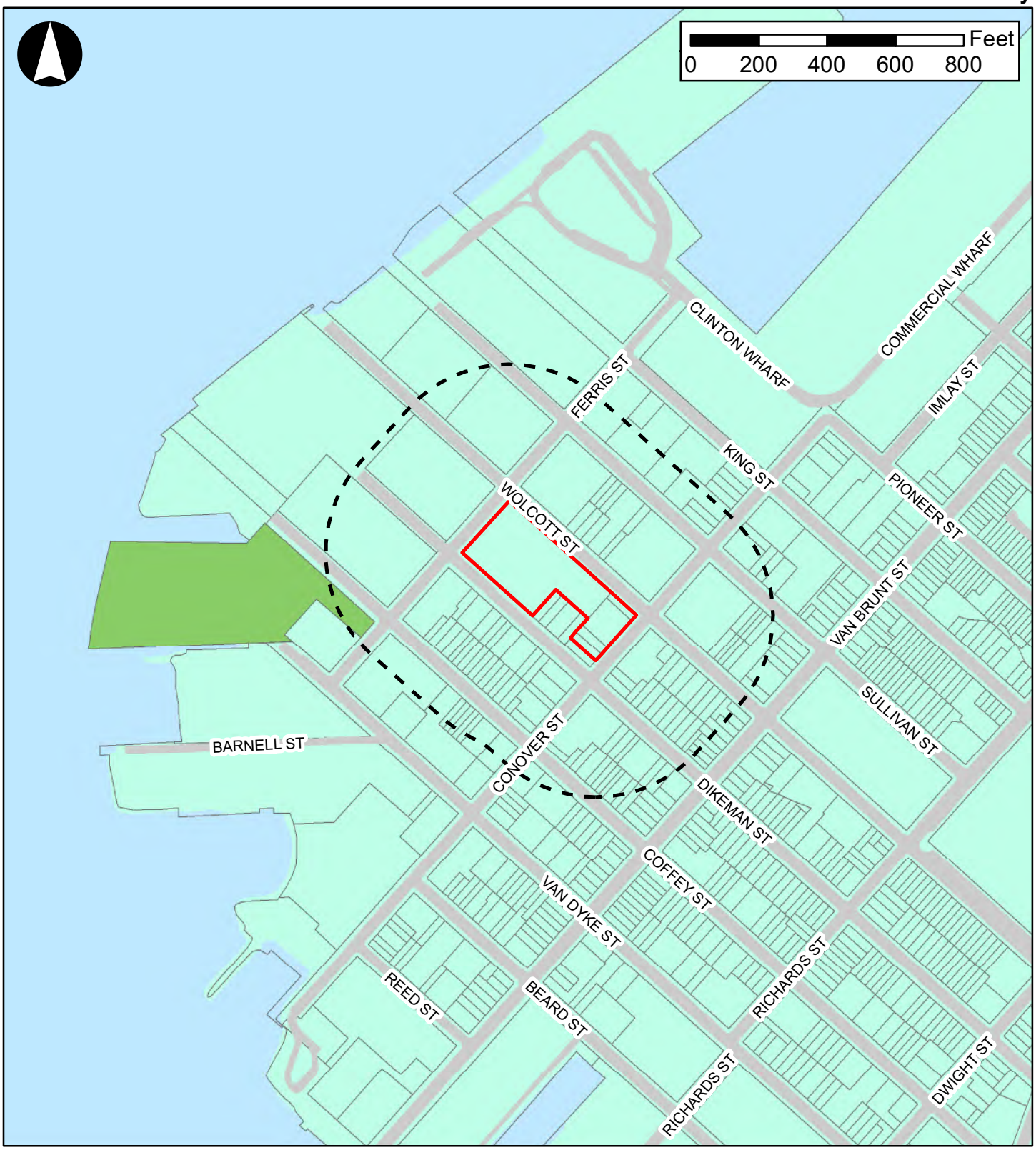
As the Development Site is located within the City's designated Coastal Zone Boundary (CZB) (see **Figure I-1**), the Proposed Action is subject to review for consistency with the policies of the Waterfront Revitalization Plan (WRP). The WRP includes policies designed to maximize the benefits derived from economic development, environmental preservation, and public use of the waterfront, while minimizing the conflicts among those objectives. The WRP Consistency Assessment Form (CAF) lists the WRP policies and indicates whether the Proposed Actions would promote or hinder that policy, or if that policy would not be applicable. The development facilitated by the Proposed Action would not hinder any of the applicable WRP policies, and as such is not likely to have any adverse effect on economic development, environmental preservation, and public use of the waterfront. This appendix provides additional information for the policies that have been checked "promote" in the WRP CAF. As the Proposed Action would not hinder any of the applicable policies, all other policies not discussed below have been checked "not applicable" in the WRP CAF.

Policy 1: Support and facilitate commercial and residential development in areas well suited to such development.

Policy 1.1: Encourage commercial and residential development in appropriate Coastal Zone areas.

Compliance Statement: The Project Area is not located on the waterfront but is located approximately 900 feet from the Upper New York Bay. At the Development Site, the Proposed Actions would facilitate the development of a 244,578-gsf new production studio with four soundstages. The Project Area is located within an M2-1 zoning district. A production studio is classified as a Use Group VIII land use and is currently allowed under M2-1. As such, the Proposed Development would not introduce a land use that is not currently permitted in the area. Furthermore, the Development Site is located in the Red Hook neighborhood, a formerly industrial neighborhood that has undergone significant mixed-use development in recent years and is well served by public infrastructure. The Project Area is not located within a Significant Maritime and Industrial Area (SMIA) (it is adjacent to the Red Hook Significant Maritime & Industrial Area), Special Natural Waterfront Area (SNWA), Priority Maritime Activity Zone (PMAZ), Recognized Ecological Complex (REC), or West Shore Ecologically Sensitive Maritime and Industrial Area (ESMIA), as defined in the WRP, and is therefore not located in a special area that may be inappropriate for the development of new commercial land uses. For these reasons, the Proposed Action would advance Policy 1.1.

Figure I-1
Coastal Zone Boundary



Legend

- Project Area
- 400-Foot Radius
- Open Space
- Water
- NYC Coastal Zone

Policy 1.3: Encourage redevelopment in the Coastal Zone where public facilities and infrastructure are adequate or will be developed.

Compliance Statement: The Proposed Action would encourage new development in an area served by existing public facilities and infrastructure. The density of the proposed facility is compatible with the capacity of surrounding roadways, public transportation, infrastructure, and essential community services. It is anticipated that the Proposed Action, and the scale of the resultant development would not overburden the surrounding Red Hook neighborhood, and the area would continue to be adequately served by existing public facilities and infrastructure. Overall, the Proposed Action would encourage development in an area that is adequately served by existing public facilities and infrastructure. For these reasons, the Proposed Action would advance Policy 1.3.

Policy 1.5: Integrate consideration of climate change and sea level rise into the planning and design of waterfront residential and commercial development, pursuant to WRP Policy 6.2.

Compliance Statement: As detailed in the Compliance Statement for WRP Policy 6.2 below, the Proposed Development would integrate consideration of the latest projections of climate change and sea level rise in New York City into planning and design. All new vulnerable, critical, or potentially hazardous features would be protected through flood damage reduction measures or future adaptive actions, and through compliance with all applicable rules and regulations. For these reasons, the Proposed Action would advance Policy 1.5.

Policy 6: Minimize loss of life, structures, infrastructure, and natural resources caused by flooding and erosion, and increase resilience to future conditions created by climate change.

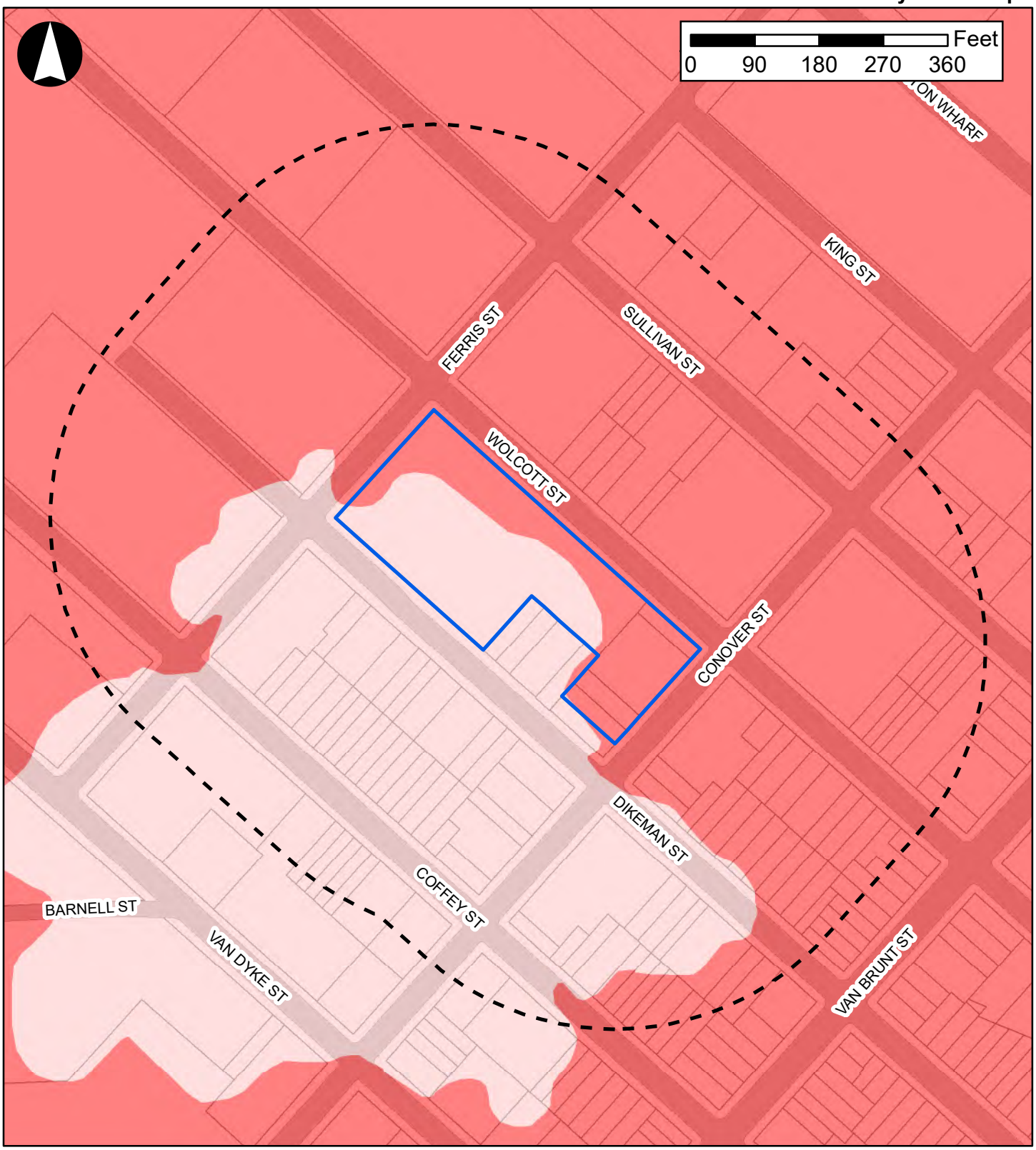
Policy 6.1: Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the site, the use of the property to be protected, and the surrounding area.

Compliance Statement: Based on the most recent flood hazard data, the Project Area is located within an area of special flood hazard. According to the 2015 FEMA Preliminary Flood Insurance Rate Maps (PFIRMs), the Project Area is located within the 100-year flood zone (Zone AE) and the 500-year flood zone (refer to **Figure I-2**). As the Project Area is within the boundaries of the 100-year and 500-year floodplains, the area to be developed (the building footprint of the Proposed Development) is delineated as an area of special flood hazard and Appendix G of the *New York City Building Code* applies to the Proposed Development.

As a result, the Proposed Development would incorporate both wet and dry-floodproofed areas, providing comprehensive protection against flooding events. This strategic integration not only safeguards the building itself but also contributes to the broader goal of minimizing the impact on the surrounding environment. In tandem with the physical adaptations, a Flood Emergency Action Plan ("the Plan") would be implemented. This Plan involves the proactive development of protocols to prepare the building for potential flooding, including the installation of deployable flood barriers. The Plan ensures the safe and timely evacuation of all non-vital occupants ahead of a flood emergency, while essential personnel, such as building engineers, undergo thorough training to manage the building during such events and safely egress if necessary.

To minimize losses from flooding and erosion, the building design would employ a combination of non-structural and structural management measures tailored to the unique characteristics of the

Figure I-2
2015 FEMA Preliminary Flood Maps



Legend

- Project Area
- 400-Foot Radius
- 100-Year Floodplain
- 500-Year Floodplain

Development Site, the intended use of the property, and the surrounding area. In areas designated for dry flood-proofing, robust structural elements would be incorporated. Concrete walls and slabs are designed to withstand hydrostatic pressure induced by flooding. Friction piles and/or rock anchors are strategically employed to counteract uplift forces during flooding conditions and minimizing the risk of structural damage. Wet flood-proofed areas, essential for effective flood management, are constructed from flood-resistant materials such as concrete masonry unit (CMU) blocks, cast-in-place concrete, and pre-cast concrete. Adhering to NYC compliance standards, flood vents are seamlessly integrated into the exterior walls. To further fortify the property, a combination of passive and/or deployable flood barriers is strategically positioned at openings below the design flood elevation. For these reasons, the Proposed Action would advance Policy 6.1.

Policy 6.2: Integrate consideration of the latest New York City projections of climate change and sea level rise (as published in the New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms) into the planning and design of projects in the city's Coastal Zone.

Compliance Statement:

As outlined in The New York City Waterfront Revitalization Program Climate Change Adaptation Guidance document, for site-specific actions that include (or would facilitate the development of) new vulnerable, critical, or potentially hazardous features, the following three-step approach was utilized to assess a project or action's consistency with Policy 6.2.

STEP 1: IDENTIFY VULNERABILITIES AND CONSEQUENCES

The goal of this first step is to assess the project's vulnerabilities to future coastal hazards and what potential consequences may result. As discussed above, the Project Area is within New York City's CZB and is within the boundaries of the 100-year flood zone (Zone AE) and 500-year flood zone (Shaded Zone X) as delineated in the 2015 FEMA PFIRMs. The Proposed Development would be constructed within the "0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile" (Zone X), where the risk of major flooding is low.

Coastal storms could bring high winds in addition to flood hazards to the Project Area. However, the Project Area is not located within a Coastal A or V zone. The Proposed Development is not expected to make flooding on adjacent properties worse, nor would the Proposed Development conflict with other plans for flood protection on adjacent properties.

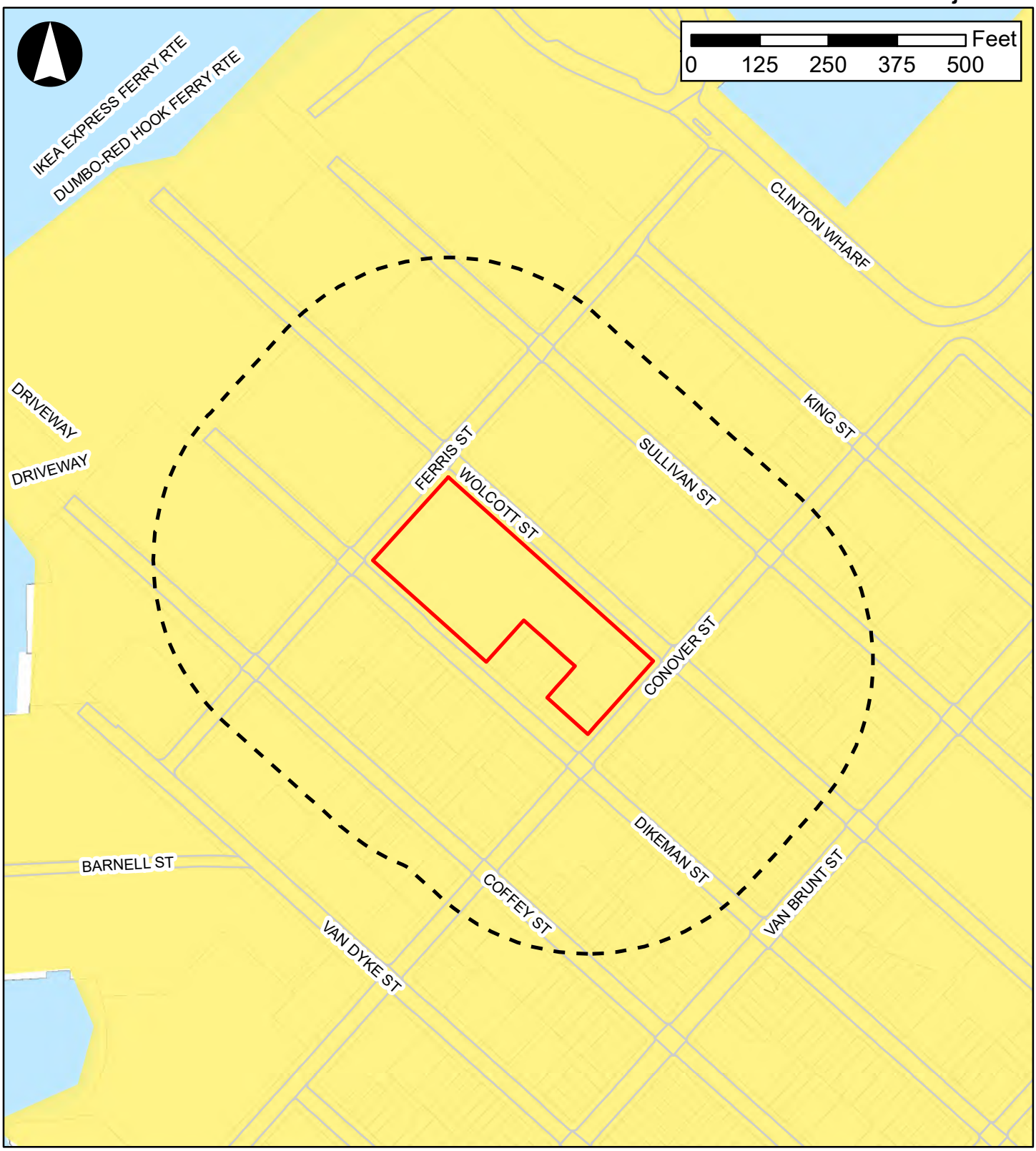
The New York City Panel on Climate Change ("NPCC") recommends assessing the impacts of projected sea level rise on the lifespan of projects. While the NPCC developed a series of flood projection maps that incorporate sea level rise projections with FEMA's January 2015 FIRMs, because of limitations in the accuracy of flood projections, the NPCC recommends that these flood projection maps not be used to judge site-specific risks. However, in general, the NPCC estimates that in the New York City area, sea level will rise up to a high estimate of 10 inches by the 2020s, and up to a high estimate of 30 inches by the 2050s. The NPCC projects that the frequency, extent, and height of 100-year and 500-year floods will increase by the 2050s. As illustrated in **Figure I-3** through **Figure I-5**, the Project Area is expected to continue to fall within the 100-year flood zone in the future (2050s through 2100s), as published by the NPCC. Per 2021 *CEQR Technical Manual* guidance, the Flood Elevation Worksheet was prepared for the Proposed Development and is attached to this **Appendix**.

Figure I-3
NPCC 2050s Flood Zone Projections

Legend

- Project Area
- 400-Foot Radius
- 2050s 100-Year Floodplain
- 2050s 500-Year Floodplain
- Water

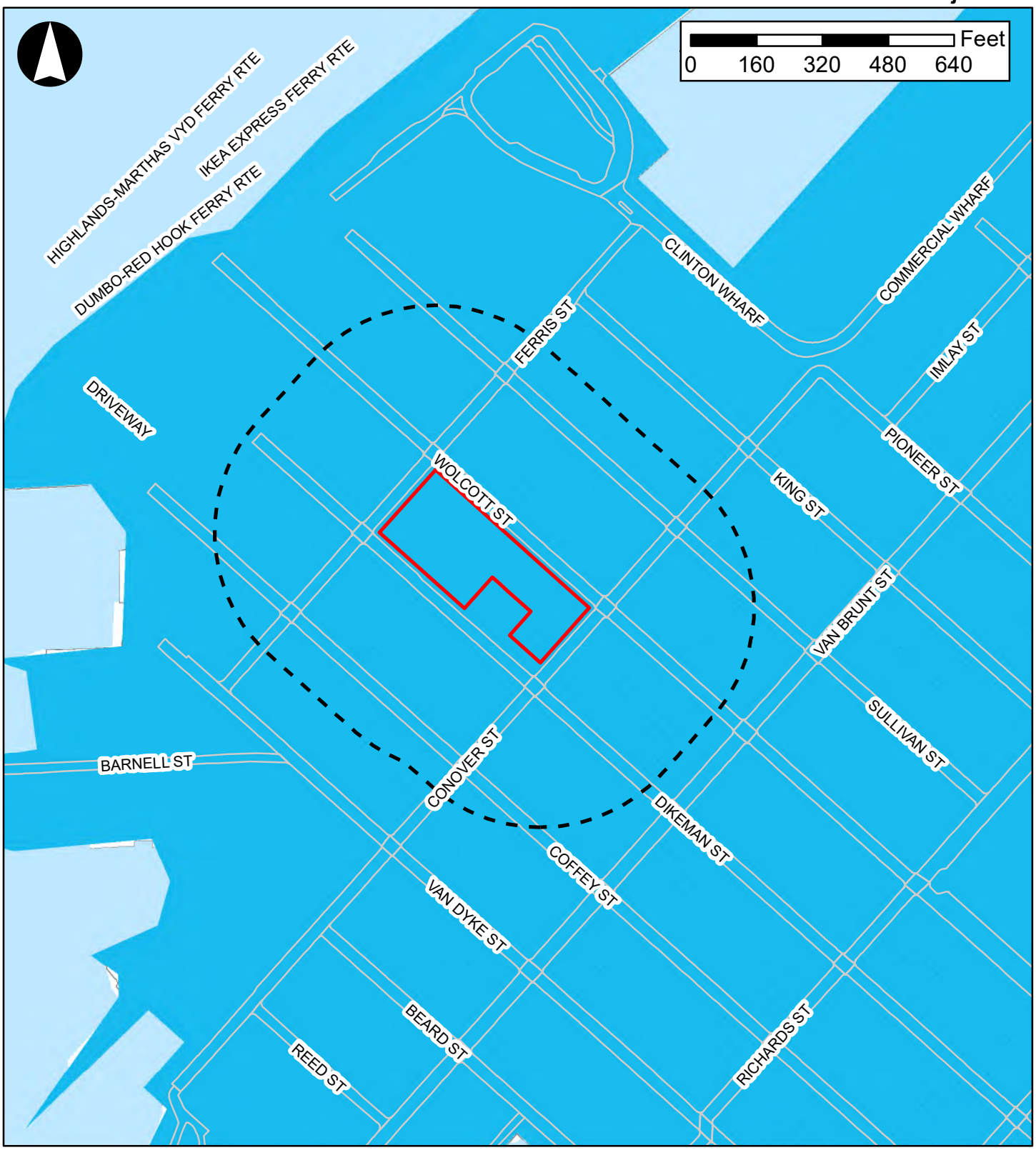
Figure I-4
NPCC 2080s Flood Zone Projections



Legend

- Project Area
- 400-Foot Radius
- 2080s 100-Year Floodplain
- 2080s 500-Year Floodplain
- Water

Figure I-5
NPCC 2100s Flood Zone Projections



Legend

- Project Area
- 400-Foot Radius
- 2100s 100-Year Floodplain
- 2100s 500-Year Floodplain
- Water

The New York Bay, which is the body of water in the vicinity of the Proposed Development, is a tidal estuary. Therefore, the flood elevation is controlled by the tidal conditions within East River, Long Island Sound, and the Atlantic Ocean. Because the coastal floodplain adjacent to the Project Area is affected by coastal flooding, rather than local or fluvial flooding, the operation of the Proposed Development would not exacerbate flooding conditions on or near the Development Site. Furthermore, coastal floodplains are influenced by astronomic tide and meteorological forces (e.g., northeasters and hurricanes) and not by fluvial flooding (e.g., rivers and streams overflowing their banks), and, as such, are not affected by the placement of obstructions (e.g., buildings) within the coastal floodplain. As shown in **Figures I-6 through I-9**, between the 2020s and 2100s, the Proposed Development would not fall within an area that is anticipated to be impacted by tidal flooding.

As shown in the Mean Higher High Water + Sea Level Rise graph below, only the parking garage and mechanical level would be located below the elevation of the Mean Higher High Water for the Proposed Development's lifespan (spanning an estimated 75 years subsequent to completion in 2027) under the high sea level rise projections only. As shown in the graph, no other critical and vulnerable features of the Proposed Development are anticipated to be located below the elevation of the Mean Higher High Water at any point over the Proposed Development's lifespan. Therefore, the operation of the Proposed Development is not expected to exacerbate future projected coastal flooding conditions.

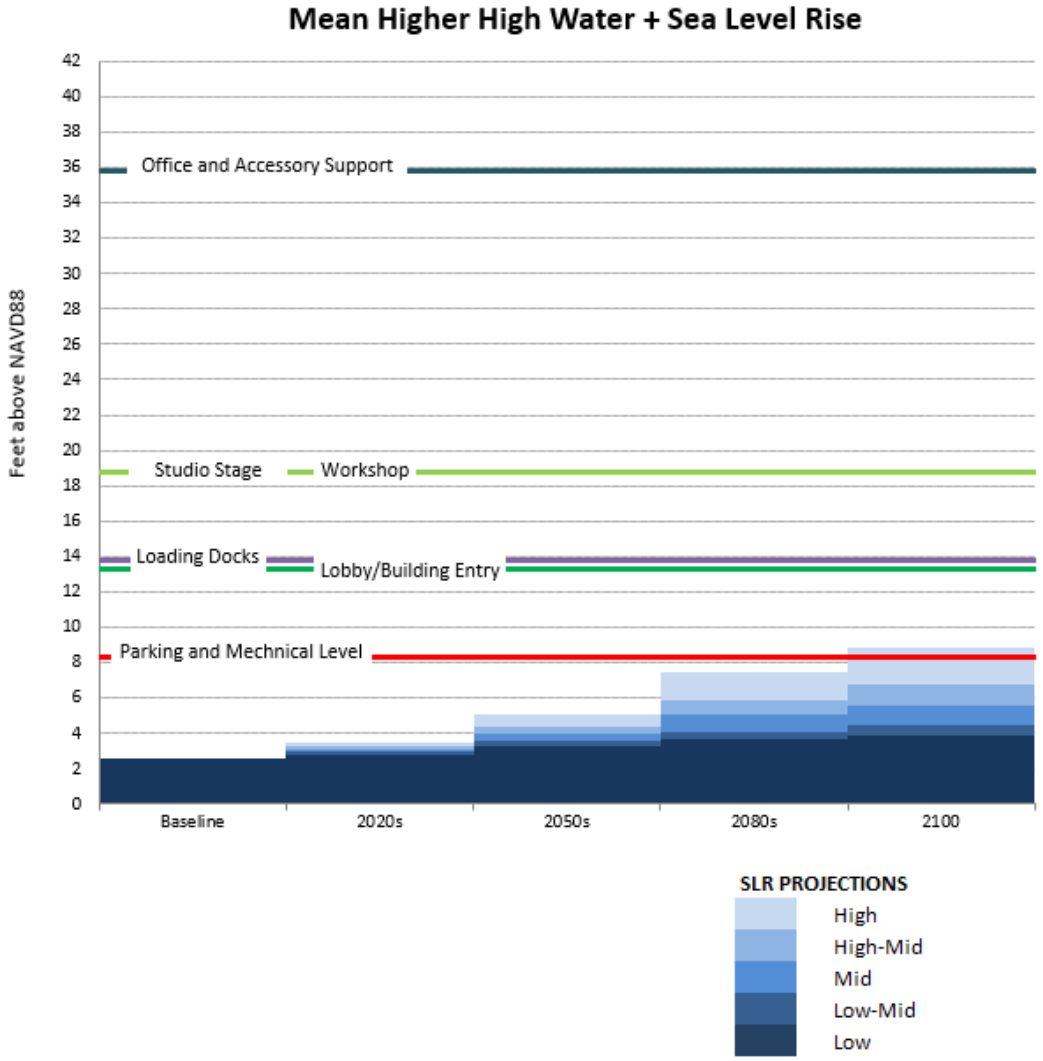
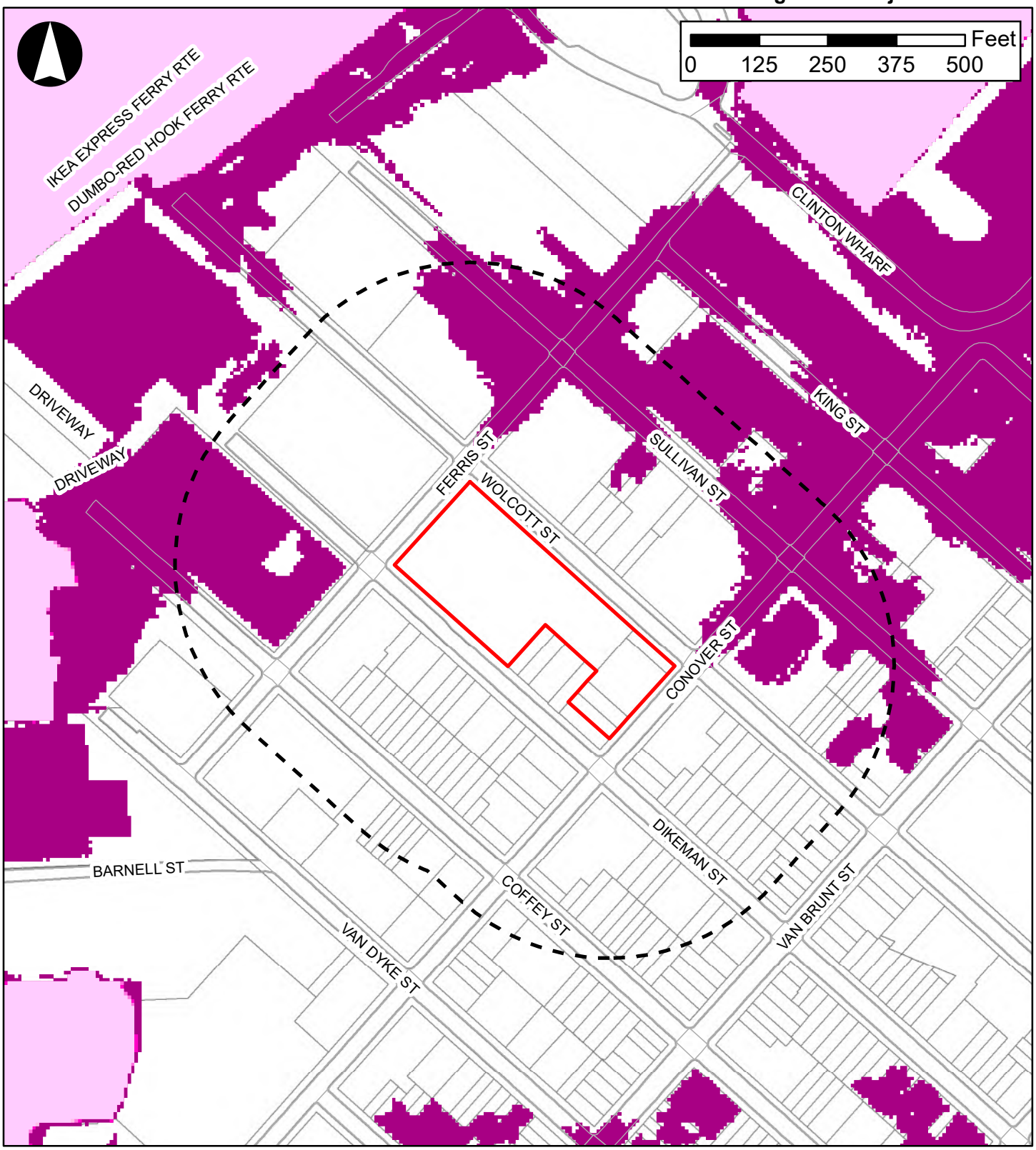


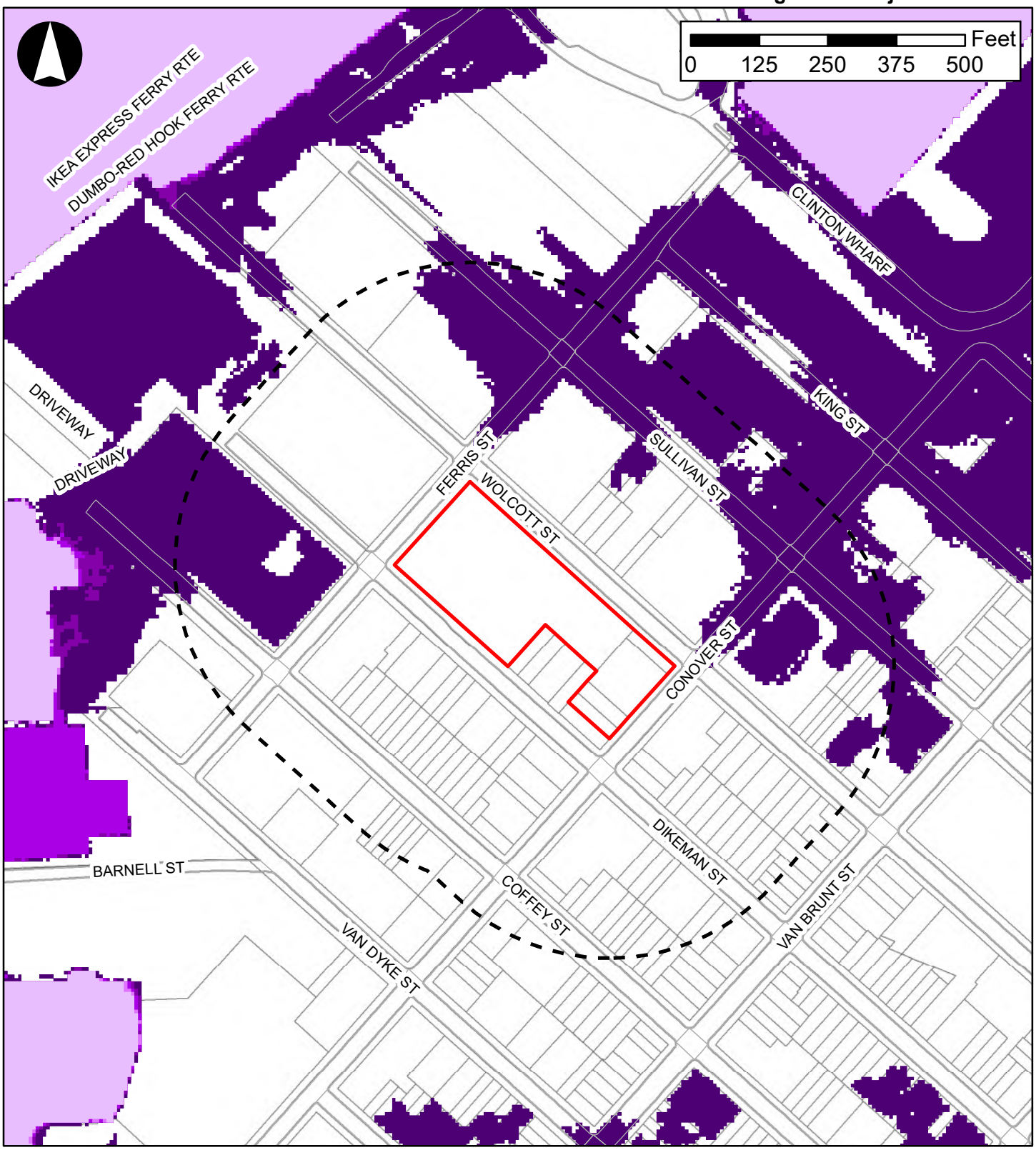
Figure I-6
High Tide Projections 2020s



Legend

- Project Area
- 400-Foot Radius
- Low Estimate (2 inches SLR)
- Low-Mid Estimate (4 inches SLR)
- Middle Estimate (6 inches SLR)
- Mid-High Estimate (8 inches SLR)
- High Estimate (10 inches SLR)

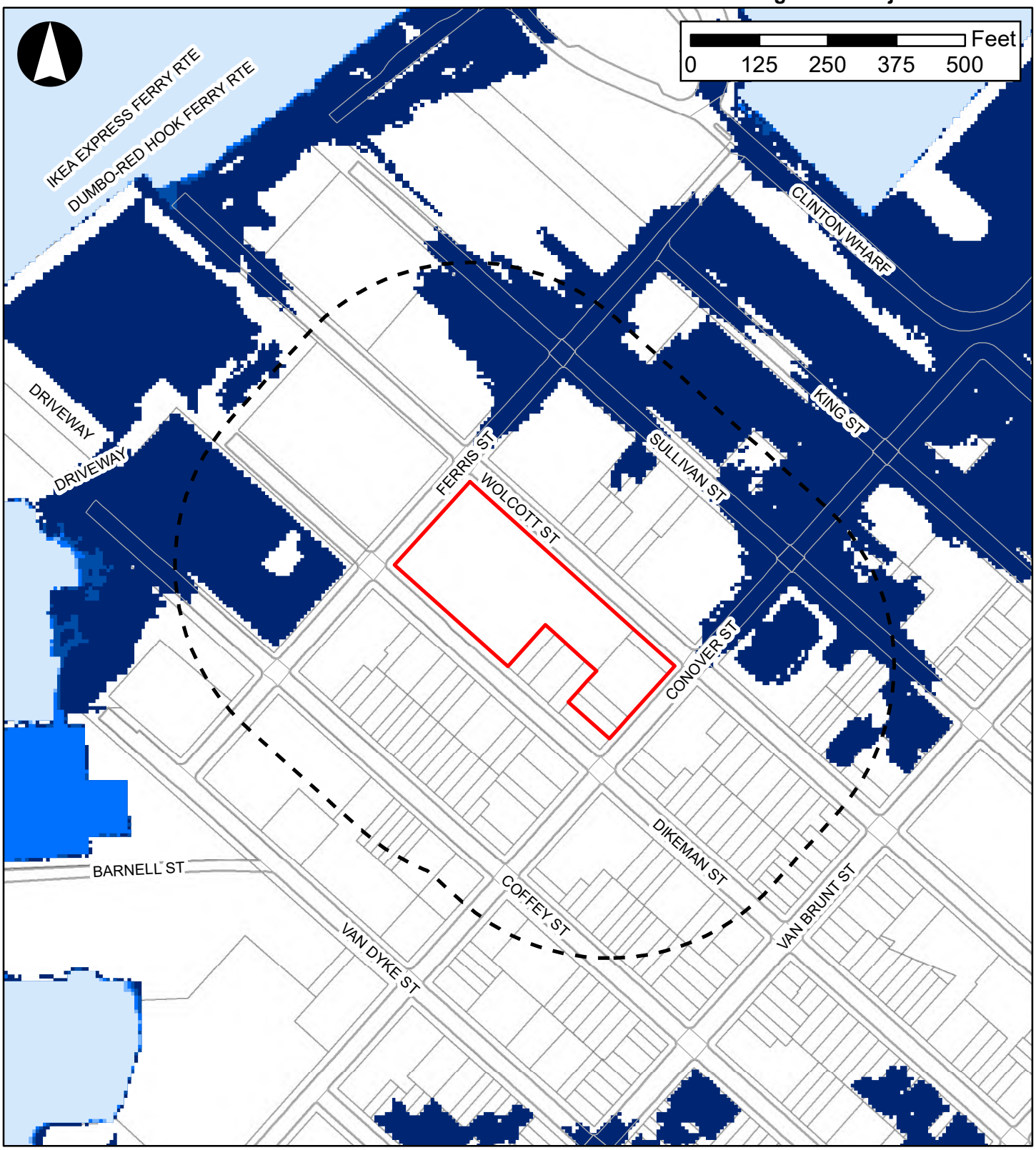
Figure I-7
High Tide Projections 2050s



Legend

- Project Area
- 400-Foot Radius
- Low Estimate (13 inches SLR)
- Low-Mid Estimate (18 inches SLR)
- Middle Esitmate (29 inches SLR)
- Mid-High Estimate (39 inches SLR)
- High Estimate (58 inches SLR)

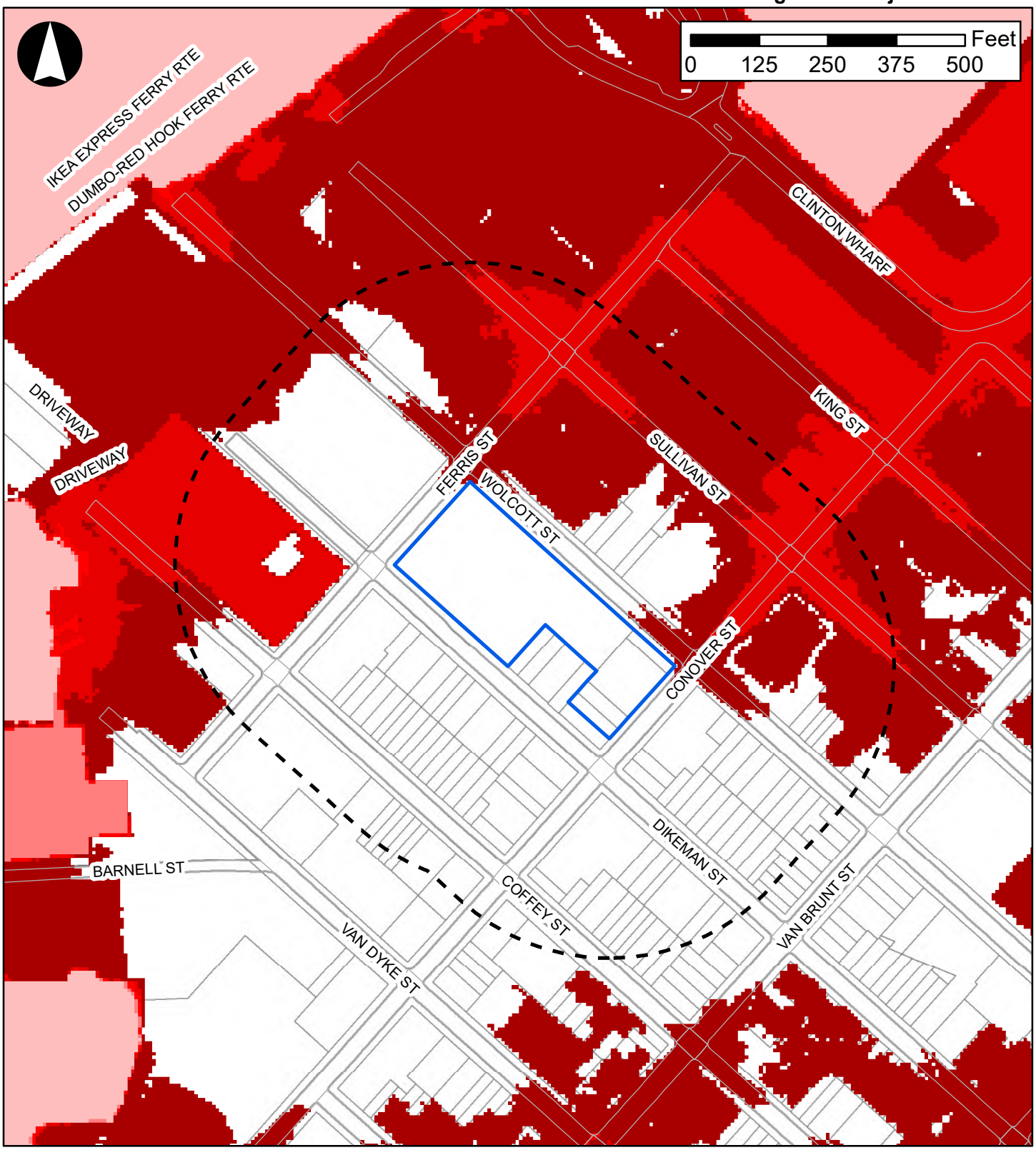
Figure I-8
High Tide Projections 2080s



Legend

- Project Area
- 400-Foot Radius
- Low Estimate (13 inches SLR)
- Low-Mid Estimate (18 inches SLR)
- Middle Esitmate (29 inches SLR)
- Mid-High Estimate (39 inches SLR)
- High Estimate (58 inches SLR)

Figure I-9
High Tide Projections 2100s

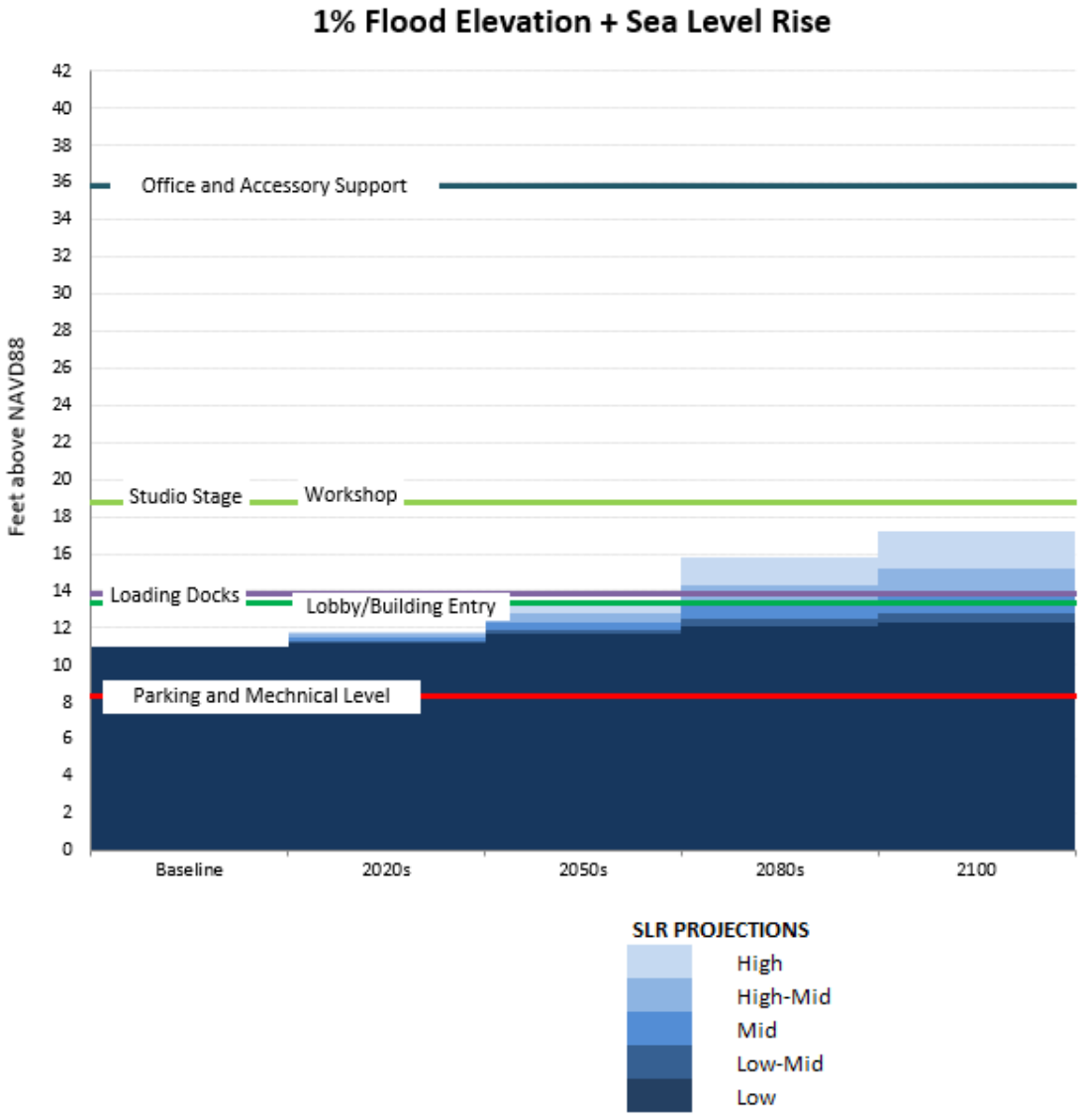


Legend

- Project Area
- 400-Foot Radius
- Low Estimate (15 inches SLR)
- Low-Mid Estimate (22 inches SLR)
- Middle Estimate (36 inches SLR)
- Mid-High Estimate (50 inches SLR)
- High Estimate (75 inches SLR)

The parking garage and mechanical level located within the Proposed Development's cellar would be a critical and vulnerable feature. As illustrated in the 1% Flood Elevation + Sea Level Rise graph below, the Proposed Development's parking garage and mechanical level would be located below the base flood elevation (BFE) of the 100-year flood zone (11 feet [NAVD88]) upon completion of the Proposed Development and critical and vulnerable features within the cellar would remain below the elevation of the 100-year flood zone for the remainder of the Proposed Development's lifespan (approximately 75 years).

As a result, future flooding events could result in a loss of building services, structural damage and damage to property, loss of inventory, or potentially increased flood insurance costs. However, the NPCC recommends that these flood projection maps not be used to judge site-specific risks, and they are subject to change. As mentioned previously, this section of the Proposed Development would be dry-floodproofed and would have cast-in-place concrete slab and walls with deployable flood barriers. These features would resist hydrostatic pressure and flood conditions.



Beginning in the 2080s, the elevation of the Proposed Development's lobby and loading docks would fall below the elevation of the one percent annual chance flood zone (under high sea level rise projections) and would remain below the elevation of the future one percent annual chance flood zone for the remainder of the Proposed Development's lifespan (approximately 53 years). If any of the Proposed Development's critical and vulnerable features located on these floors were to fall below the elevation of the future one percent annual chance flood zone, future flooding events could result in a loss of building services, structural damage, loss of inventory, or potentially increased flood insurance costs.

As shown in the 1% Flood Elevation + Sea Rise graph, the Proposed Development's studio stages, workshops, offices and accessory support spaces (vulnerable features) would be located above the current and future one percent annual chance flood zone under high sea level rise projections for the full lifespan of the Proposed Development (approximately 75 years).

STEP 2: IDENTIFY ADAPTIVE STRATEGIES

Based on the future 100-year flood zone projections for the 2020s, 2050s, 2080s, 2100, the Project Area would continue to remain within the 100-year flood zone but would fall outside the future tidal zone by the 2050s and beyond (see **Figures I-7 through I-9**). However, as described above, the NPCC recommends that these maps not be used to judge site-specific risks and they are subject to change. As previously stated, coastal floodplains are influenced by astronomic tide and meteorological forces and not by fluvial flooding, and as such are not affected by the placement of obstructions within the floodplain. In the event of a 100-year flood event, the Proposed Development would respond well based on the adaptive measures described below.

The lowest level of the facility, the parking garage and mechanical level, would be dry-floodproofed using cast-in-place concrete slab and walls with deployable flood barriers, which are designed to resist hydrostatic pressure and flood conditions. Next, the lobby/building entry would be wet and dry-floodproofed with deployable flood barriers, flood-resistant finishes and pre-cast concrete walls. The loading docks would be wet-floodproofed with flood-resistance finishes and pre-cast concrete walls. Both the loading docks and the lobby/building entry levels are not considered vulnerable or critical features.

As shown in the graphs above, the vulnerable studio stages, workshops, and office and accessory support spaces are not anticipated to be affected by future flooding. However, adaptive measures have still been established for these areas. The stages and works would feature cast in place concrete floors and pre-cast concrete walls. The offices and accessory support spaces would feature composite metal and concrete slabs, pre-cast concrete walls and a steel structure.

STEP 3: ASSESS POLICY CONSISTENCY

The Proposed Action would advance Policy 6.2 and there would be no significant adverse impacts associated with the Project Area's location within the 100-year and 500-year flood zones. At present, the Project Area is susceptible to flooding risk. In the future, according to NPCC projections, the Proposed Development would continue to be susceptible to flooding risk. In addition, the NPCC recommends that these flood projection maps not be used to judge site-specific risks and they are subject to change. All new vulnerable, critical, or potentially hazardous features would be protected through flood damage reduction measures or future adaptive actions, as described in Step 2. Therefore, the Proposed Project would be consistent with New York City policies regarding adaptation to climate change.

Policy 7: Minimize environmental degradation and negative impacts on public health from solid waste, toxic pollutants, hazardous materials, and industrial materials that may pose risk to the environment and public health and safety.

Policy 7.1 Manage solid waste material, hazardous waste, toxic pollutants, substances that are hazardous to the environment, and the unenclosed storage of industrial materials to protect public health, control pollution and prevent degradation of coastal ecosystems.

Compliance Statement: The proposed project is enrolled in the Voluntary Brownfield Clean-up Program with the New York State Department of Environmental Conservation (NYSDEC). This project would coincide with the remediation of petroleum, tar, solvent, and metal-impacted soil and groundwater in accordance with a NYSDEC and New York State Department of Health (NYSDOH) approved Remedial Action Work Plan (RAWP) under the administration of the New York State Brownfield Cleanup Program (BCP). These actions will reduce the impact of contaminants on the environment and mitigate against potential public exposure to any residual hazardous substances following completion of the project. For these reasons, the Proposed Action would advance Policy 7.1.

Policy 7.2 Prevent and remediate discharge of petroleum products.

Compliance Statement: As described above, the environmental remedy will include the mass removal of hazardous materials released to the environment in accordance with a Profession Engineer-certified design. Implementation of the RAWP will be overseen by a remedial engineer and subject to review by the NYSDEC and NYSDOH. For these reasons, the Proposed Action would advance Policy 7.2.

Policy 7.3 Transport solid waste and hazardous materials and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.

Compliance Statement: Contaminant removal will be achieved via soil excavation, localized dewatering, groundwater treatment, and the removal of tar and petroleum products in groundwater. All contaminated soil disposed of off-site will be transported on NYSDEC Part 364-permitted vehicles outfitted with appropriate tarp covers and placarding. Based on its distance of over 600 feet from the nearest marine shoreline and through the implementation of the aforementioned mitigation measures, the project will not compromise nearby coastal resources. For these reasons, the Proposed Action would advance Policy 7.3.

The assessment provided herein found that the Proposed Action would be consistent with all applicable WRP policies. Therefore, the Proposed Action is not expected to result in any significant adverse impacts related to the WRP. DCP's division of Climate and Sustainability Planning, on behalf of the New York City Coastal Commission, has reviewed the WRP assessment, and the project has been assigned WRP No. [TBD].

NYC Waterfront Revitalization Program - Policy 6.2 Flood Elevation Workhsheet

COMPLETE INSTRUCTIONS ON HOW TO USE THIS WORKSHEET ARE PROVIDED IN THE "CLIMATE CHANGE ADAPTATION GUIDANCE" DOCUMENT AVAILABLE AT www.nyc.gov/wrp

Enter information about the project and site in highlighted cells in Tabs 1-3. Tab 4, "Summary Charts" contains primary results. Tab 5, "0.2%+SLR" produces charts to be used for critical infrastructure or facilities. Tab 6, "Calculations" contains background computations. Appendix A contains tide elevations for station across the city to be used for the elevation of MHHW if a site survey is not available. Non-highlighted cells have been locked.

Background Information	
Project Name	176 Dikeman Street EAS
Location	176 Dikeman Street, Brooklyn, NY 11231 (574, Lots 1, 30, 31)
Type(s)	☑ Residential, Commercial, Community Facility ☐ Parkland, Open Space, and Natural Areas ☐ Tidal Wetland Restoration ☐ Critical Infrastructure or Facility ☐ Industrial Uses ☐ Over-water Structures ☐ Shoreline Structures ☐ Transportation ☐ Wastewater Treatment/Drainage ☐ Coastal Protection
Description	The Proposed Development is an approximately 244,568-gross-square-foot (167,028 zoning square feet, 1.97 FAR) facility to be used as a production studio. The Proposed Development, which would consist of four sound stages that would be able to support two productions, aims to fill the demand for a state-of-the-art purpose-built production facility. The Proposed Development would also contain approximately 190 parking spaces and five loading berths.
Planned Completion Date	2027
Expected Project Lifespan	75 Years; 2102

For technical assistance on using this worksheet, email wrp@planning.nyc.gov, using the message subject "Policy 6.2 Worksheet."

Last update: Sept. 7, 2018

Establish current tidal and flood heights.

	FT (NAVD88)	Feet	Datum	Source
MHHW	2.61	**2.61**	**NAVD88**	*Appendix A- The Battery Station*
1% flood height	11.00	**11.00**	**NAVD88**	*DCP Flood Hazard Mapper*
Design flood elevation	16.00	**16.00**	**NAVD88**	*From Applicant*
As relevant:				
0.2% flood height	14.90	14.90	**NAVD88**	*FEMA FIS Report Upper New York Bay Transect K-42*

Data will be converted based on the following datums:

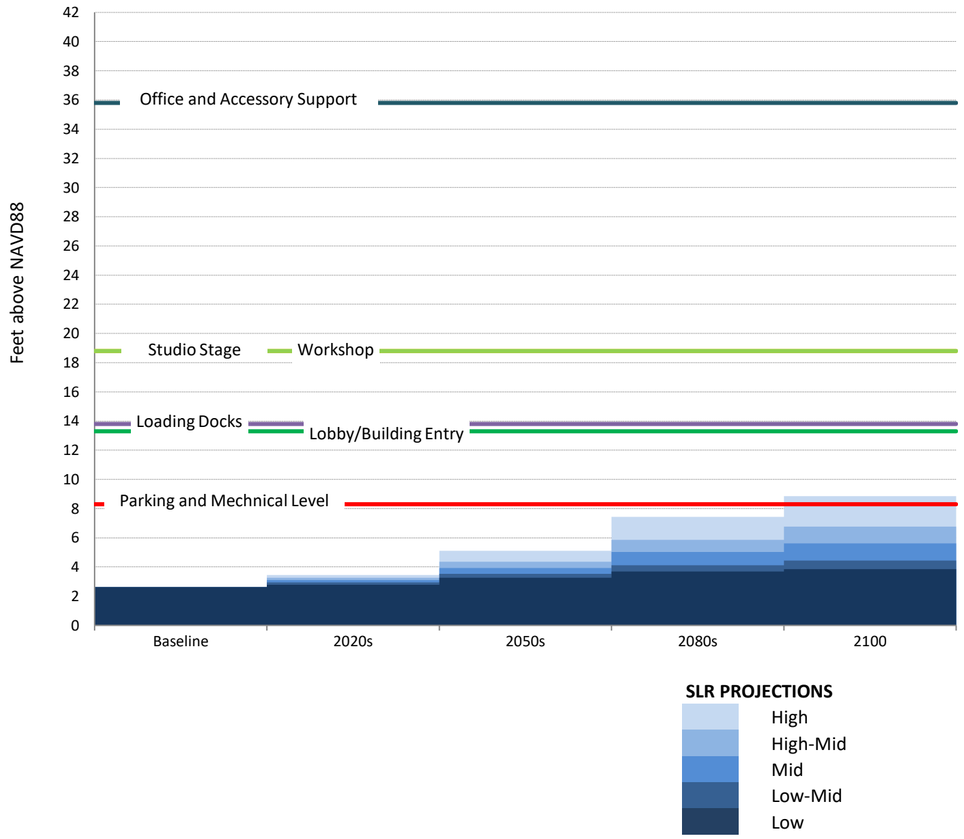
Datum	FT (NAVD88)
NAVD88	*0.00*
NGVD29	*-1.10*
Manhattan Datum	*1.65*
Bronx Datum	*1.51*
Brooklyn Datum (Sewer)	*0.61*
Brooklyn Datum (Highway)	*1.45*
Queens Datum	*1.63*
Richmond Datum	*2.09*

Describe key physical features of the project.

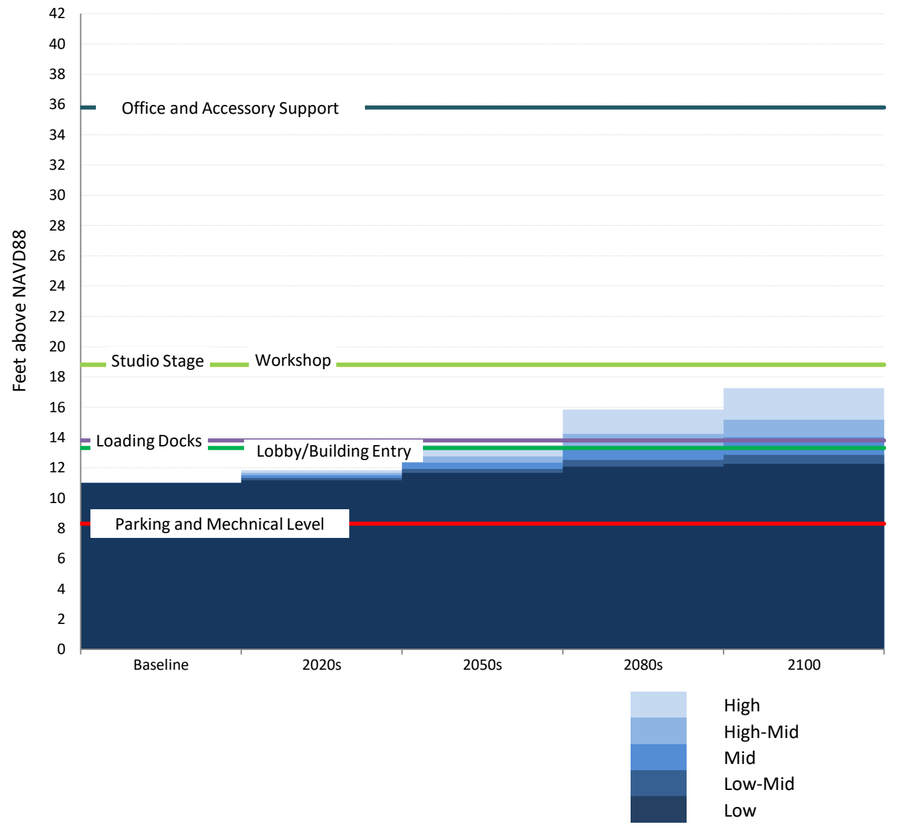
Feature *(enter name)*	Feature Category	Lifespan	Elevation	Units	Datum	Ft	Ft Above NAVD88	Ft Above MHHW	Ft Above 0.2% flood height
Parking and Mechnical Level	☐ Vulnerable ☑ Critical ☐ Potentially Hazardous ☐ Other	2102	8.3	Feet	NAVD88	*8.3*	*8.3*	*5.7*	*-6.6*
Dry-floodproofed basement and cellar space for 190 cars, mechanical equipment and incoming services, and storage. Cast-in-place concrete slab and walls with deployable flood barriers, designed to resist hydrostatic pressure and flood conditions.									
Studio Stage	☑ Vulnerable ☐ Critical ☐ Potentially Hazardous ☐ Other	2102	18.8	Feet	NAVD88	*18.8*	*18.8*	*16.2*	*3.9*
Production Studio Stage locted above DFE. Cast in place concrete floor, pre-cast concrete walls.									
Workshop	☑ Vulnerable ☐ Critical ☐ Potentially Hazardous ☐ Other	2102	18.8	Feet	NAVD88	*18.8*	*18.8*	*16.2*	*3.9*
Workshop and Storage located above DFE. Cast in place concrete floor, pre-cast concrete walls, steel structure.									
Office and Accessory Support	☑ Vulnerable ☐ Critical ☐ Potentially Hazardous ☐ Other	2102	35.8	Feet	NAVD88	*35.8*	*35.8*	*33.2*	*20.9*
Office and Studio Support spaces located above DFE. Composite metal and concrete slabs, pre-cast concrete walls, and steel structure.									
Loading Docks	☑ Vulnerable ☐ Critical ☐ Potentially Hazardous ☐ Other	2102	13.8	Feet	NAVD88	*13.8*	*13.8*	*11.2*	*-1.1*
Wet-floodproofed loading dock with flood-resistant finishes. Pre-cast concrete walls.									
Lobby/Building Entry	☑ Vulnerable ☐ Critical ☐ Potentially Hazardous ☐ Other	2102	13.3	Feet	NAVD88	*13.3*	*13.3*	*10.7*	*-1.6*
Wet and Dry-floodproofed building entry with deployable flood barriers. Flood-resistant finishes and pre-cast concrete walls.									
G	☐ Vulnerable ☐ Critical ☐ Potentially Hazardous ☐ Other			Feet	NAVD88				
Description of Planned Uses and Materials									
H	☐ Vulnerable ☐ Critical ☑ Potentially Hazardous ☐ Other			Feet	NAVD88				
Description of Planned Uses and Materials									

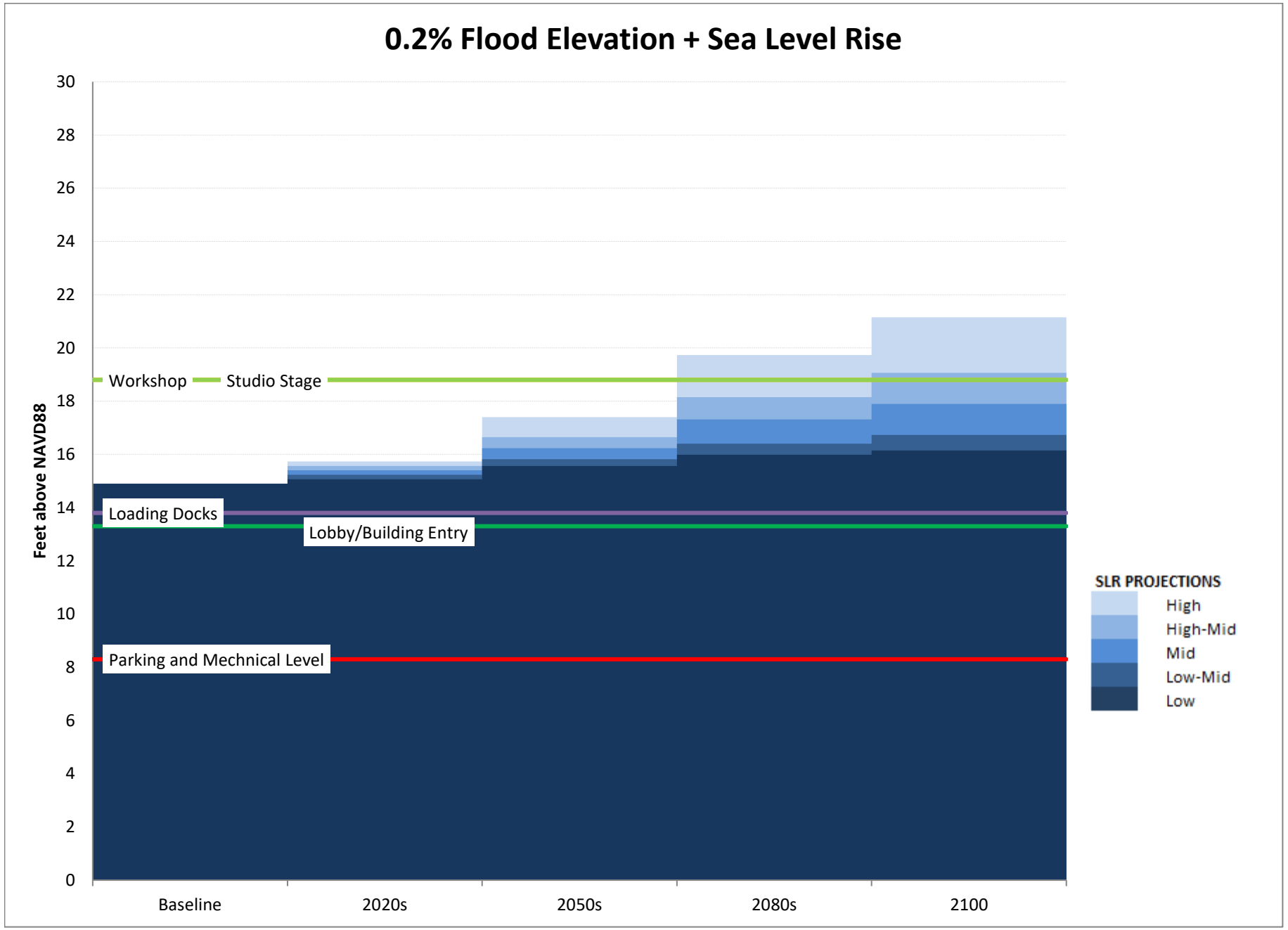
Assess project vulnerability over a range of sea level rise projections.

Mean Higher High Water + Sea Level Rise



1% Flood Elevation + Sea Level Rise




0.2% Flood Elevation + Sea Level Rise
Feet above NAVD88
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
Workshop
Studio Stage
Loading Docks
Lobby/Building Entry
Parking and Mechnical Level
Baseline
2020s
2050s
2080s
2100
SLR PROJECTIONS
High
High-Mid
Mid
Low-Mid
Low

	SLR (ft)				
	Low	**Low-Mid**	**Mid**	**High-Mid**	**High**
Baseline	0.00	0.00	0.00	0.00	0.00
2020s	0.17	0.33	0.50	0.67	0.83
2050s	0.67	0.92	1.33	1.75	2.50
2080s	1.08	1.50	2.42	3.25	4.83
2100	1.25	1.83	3.00	4.17	6.25

	SLR (in)				
	Low	**Low-Mid**	**Mid**	**High-Mid**	**High**
2014	0	0	0	0	0
2020s	2	4	6	8	10
2050s	8	11	16	21	30
2080s	13	18	29	39	58
2100	15	22	36	50	75

	MHHW+SLR (ft above NAVD88)				
	Low	**Low-Mid**	**Mid**	**High-Mid**	**High**
Baseline	2.61	2.61	2.61	2.61	2.61
2020s	2.78	2.94	3.11	3.28	3.44
2050s	3.28	3.53	3.94	4.36	5.11
2080s	3.69	4.11	5.03	5.86	7.44
2100	3.86	4.44	5.61	6.78	8.86

	1%+SLR (ft above NAVD88)				
	Low	**Low-Mid**	**Mid**	**High-Mid**	**High**
Baseline	11.00	11.00	11.00	11.00	11.00
2020s	11.17	11.33	11.50	11.67	11.83
2050s	11.67	11.92	12.33	12.75	13.50
2080s	12.08	12.50	13.42	14.25	15.83
2100	12.25	12.83	14.00	15.17	17.25

	0.2%+SLR (ft above NAVD88)				
	Low	**Low-Mid**	**Mid**	**High-Mid**	**High**
Baseline	14.90	14.90	14.90	14.90	14.90
2020s	15.07	15.23	15.40	15.57	15.73
2050s	15.57	15.82	16.23	16.65	17.40
2080s	15.98	16.40	17.32	18.15	19.73
2100	16.15	16.73	17.90	19.07	21.15

	0	1
Parking and Mechnical Level	8.3	8.3
Studio Stage	18.8	18.8
Workshop	18.8	18.8
Office and Accessory Support	35.8	35.8
Loading Docks	13.8	13.8
Lobby/Building Entry	13.3	13.3
G	0.0	0.0
H	0.0	0.0
DFE	16.0	16.0

NOAA Tide Station Data

(to be used only when a site survey is unavailable)

Station ID	*Station Name*	*Source MHHW (Feet, NAVD88)**	*Adjusted MHHW (Feet, NAVD88)**	*Source*
8518687	Queensboro Bridge	2.27	2.60	NOAA Tides and Currents
8530095	Alpine	2.11	2.44	NOAA Tides and Currents
8516614	Glen Cove	3.72	4.05	NOAA Tides and Currents
8516990	Willets Point	3.72	4.05	NOAA Tides and Currents
8518639	Port Morris	3.33	3.66	NOAA Tides and Currents
8518699	Williamsburg Bridge	2.14	2.47	NOAA Tides and Currents
8518750	The Battery	2.28	2.61	NOAA Tides and Currents
8531680	Sandy Hook	2.41	2.74	NOAA Tides and Currents
8518490	New Rochelle	3.71	4.04	NOAA Tides and Currents
8531545	Keyport	2.66	2.99	NOAA Tides and Currents
8516891	Norton Point	2.08	2.41	NOAA VDATUM
8517201	North Channel	2.72	3.05	NOAA Tides and Currents
8517137	Beach Channel	2.10	2.43	NOAA VDATUM
8517756	Kingsborough	2.13	2.46	NOAA VDATUM
8519436	Great Kills	2.22	2.55	NOAA VDATUM
8531142	Port Reading	2.82	3.15	NOAA VDATUM
8519483	Bergen Point	2.56	2.89	NOAA VDATUM
8519050	USCG	2.28	2.61	NOAA Tides and Currents
8518902	Dyckman St	2.01	2.34	NOAA Tides and Currents
8517251	Worlds Fair Marina	3.59	3.92	NOAA VDATUM
8518668	Horns Hook	2.54	2.87	NOAA VDATUM
8518643	Randalls Island	2.60	2.93	NOAA VDATUM
8518526	Throggs Neck	3.68	4.01	NOAA Tides and Currents

* MHHW values include an addition 0.33 feet to account for changes in sea level since the 1983-2001 tidal epoch.

Appendix VI:

EAF Mapper Summary Report

EAF Mapper Summary Report

Tuesday, February 18, 2025 4:13 PM

Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

B.i.i [Coastal or Waterfront Area]	Yes
B.i.ii [Local Waterfront Revitalization Area]	Yes
C.2.b. [Special Planning District]	Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook.
C.2.b. [Special Planning District - Name]	Remediaton Sites:C224256
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Yes - Digital mapping data for Spills Incidents are not available for this location. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Yes
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Yes
E.1.h.i [DEC Spills or Remediation Site - DEC ID Number]	C224256
E.1.h.iii [Within 2,000' of DEC Remediation Site]	Yes
E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID]	C224256, C224214, C224213, C224302, C224043, C224199, C224300, 224238
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	No
E.2.h.ii [Surface Water Features]	No
E.2.h.iii [Surface Water Features]	No
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	Yes
E.2.k. [500 Year Floodplain]	Yes
E.2.l. [Aquifers]	Yes

E.2.l. [Aquifer Names]	Sole Source Aquifer Names:Brooklyn-Queens SSA
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	Yes
E.2.o. [Endangered or Threatened Species - Name]	Common Tern, Atlantic Sturgeon, Shortnose Sturgeon
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Yes - Digital mapping data for archaeological site boundaries are not available. Refer to EAF Workbook.
E.3.e.ii [National or State Register of Historic Places or State Eligible Sites - Name]	Eligible property:former Wittemann Brothers Bottlers Supplies & Machinery Co., Eligible property:Red Hook Pentecostal Holiness Church
E.3.f. [Archeological Sites]	No
E.3.i. [Designated River Corridor]	No

Agency Use Only [If applicable]

Project : Bungalow 145 Wolcott

Date : March 18, 2025

Full Environmental Assessment Form
Part 2 - Identification of Potential Project Impacts

Part 2 is to be completed by the lead agency. Part 2 is designed to help the lead agency inventory all potential resources that could be affected by a proposed project or action. We recognize that the lead agency's reviewer(s) will not necessarily be environmental professionals. So, the questions are designed to walk a reviewer through the assessment process by providing a series of questions that can be answered using the information found in Part 1. To further assist the lead agency in completing Part 2, the form identifies the most relevant questions in Part 1 that will provide the information needed to answer the Part 2 question. When Part 2 is completed, the lead agency will have identified the relevant environmental areas that may be impacted by the proposed activity.

If the lead agency is a state agency **and** the action is in any Coastal Area, complete the Coastal Assessment Form before proceeding with this assessment.

Tips for completing Part 2:

- Review all of the information provided in Part 1.
- Review any application, maps, supporting materials and the Full EAF Workbook.
- Answer each of the 18 questions in Part 2.
- If you answer "**Yes"** to a numbered question, please complete all the questions that follow in that section.
- If you answer "**No"** to a numbered question, move on to the next numbered question.
- Check appropriate column to indicate the anticipated size of the impact.
- Proposed projects that would exceed a numeric threshold contained in a question should result in the reviewing agency checking the box "Moderate to large impact may occur."
- The reviewer is not expected to be an expert in environmental analysis.
- If you are not sure or undecided about the size of an impact, it may help to review the sub-questions for the general question and consult the workbook.
- When answering a question consider all components of the proposed activity, that is, the "whole action".
- Consider the possibility for long-term and cumulative impacts as well as direct impacts.
- Answer the question in a reasonable manner considering the scale and context of the project.

1. Impact on Land

Proposed action may involve construction on, or physical alteration of, the land surface of the proposed site. (See Part 1. D.1)

☑ NO ☐ YES

If "Yes", answer questions a - j. If "No", move on to Section 2.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may involve construction on land where depth to water table is less than 3 feet.	E2d	☐	☐
b. The proposed action may involve construction on slopes of 15% or greater.	E2f	☐	☐
c. The proposed action may involve construction on land where bedrock is exposed, or generally within 5 feet of existing ground surface.	E2a	☐	☐
d. The proposed action may involve the excavation and removal of more than 1,000 tons of natural material.	D2a	☐	☐
e. The proposed action may involve construction that continues for more than one year or in multiple phases.	D1e	☐	☐
f. The proposed action may result in increased erosion, whether from physical disturbance or vegetation removal (including from treatment by herbicides).	D2e, D2q	☐	☐
g. The proposed action is, or may be, located within a Coastal Erosion hazard area.	B1i	☐	☐
h. Other impacts: _____ _____		☐	☐

2. Impact on Geological Features

The proposed action may result in the modification or destruction of, or inhibit access to, any unique or unusual land forms on the site (e.g., cliffs, dunes, minerals, fossils, caves). (See Part 1. E.2.g) ☑ NO ☐ YES

If "Yes", answer questions a - c. If "No", move on to Section 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Identify the specific land form(s) attached: _____ _____	E2g	□	□
b. The proposed action may affect or is adjacent to a geological feature listed as a registered National Natural Landmark. Specific feature: _____	E3c	□	□
c. Other impacts: _____ _____		□	□

3. Impacts on Surface Water

The proposed action may affect one or more wetlands or other surface water bodies (e.g., streams, rivers, ponds or lakes). (See Part 1. D.2, E.2.h) ☑ NO ☐ YES

If "Yes", answer questions a - l. If "No", move on to Section 4.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may create a new water body.	D2b, D1h	□	□
b. The proposed action may result in an increase or decrease of over 10% or more than a 10 acre increase or decrease in the surface area of any body of water.	D2b	□	□
c. The proposed action may involve dredging more than 100 cubic yards of material from a wetland or water body.	D2a	□	□
d. The proposed action may involve construction within or adjoining a freshwater or tidal wetland, or in the bed or banks of any other water body.	E2h	□	□
e. The proposed action may create turbidity in a waterbody, either from upland erosion, runoff or by disturbing bottom sediments.	D2a, D2h	□	□
f. The proposed action may include construction of one or more intake(s) for withdrawal of water from surface water.	D2c	□	□
g. The proposed action may include construction of one or more outfall(s) for discharge of wastewater to surface water(s).	D2d	□	□
h. The proposed action may cause soil erosion, or otherwise create a source of stormwater discharge that may lead to siltation or other degradation of receiving water bodies.	D2e	□	□
i. The proposed action may affect the water quality of any water bodies within or downstream of the site of the proposed action.	E2h	□	□
j. The proposed action may involve the application of pesticides or herbicides in or around any water body.	D2q, E2h	□	□
k. The proposed action may require the construction of new, or expansion of existing, wastewater treatment facilities.	D1a, D2d	□	□

l. Other impacts: _____ _____		□	□

4. Impact on groundwater

The proposed action may result in new or additional use of ground water, or may have the potential to introduce contaminants to ground water or an aquifer. (See Part 1. D.2.a, D.2.c, D.2.d, D.2.p, D.2.q, D.2.t) ☑ NO ☐ YES

If "Yes", answer questions a - h. If "No", move on to Section 5.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may require new water supply wells, or create additional demand on supplies from existing water supply wells.	D2c	□	□
b. Water supply demand from the proposed action may exceed safe and sustainable withdrawal capacity rate of the local supply or aquifer. Cite Source: _____	D2c	□	□
c. The proposed action may allow or result in residential uses in areas without water and sewer services.	D1a, D2c	□	□
d. The proposed action may include or require wastewater discharged to groundwater.	D2d, E2l	□	□
e. The proposed action may result in the construction of water supply wells in locations where groundwater is, or is suspected to be, contaminated.	D2c, E1f, E1g, E1h	□	□
f. The proposed action may require the bulk storage of petroleum or chemical products over ground water or an aquifer.	D2p, E2l	□	□
g. The proposed action may involve the commercial application of pesticides within 100 feet of potable drinking water or irrigation sources.	E2h, D2q, E2l, D2c	□	□
h. Other impacts: _____ _____		□	□

5. Impact on Flooding

The proposed action may result in development on lands subject to flooding. (See Part 1. E.2) ☐ NO ☑ YES

If "Yes", answer questions a - g. If "No", move on to Section 6.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in development in a designated floodway.	E2i	☑	☐
b. The proposed action may result in development within a 100 year floodplain.	E2j	☑	☐
c. The proposed action may result in development within a 500 year floodplain.	E2k	☑	☐
d. The proposed action may result in, or require, modification of existing drainage patterns.	D2b, D2e	☑	☐
e. The proposed action may change flood water flows that contribute to flooding.	D2b, E2i, E2j, E2k	☑	☐
f. If there is a dam located on the site of the proposed action, is the dam in need of repair, or upgrade?	E1e	☑	☐

g. Other impacts: _____ _____		☑	☐

6. Impacts on Air

The proposed action may include a state regulated air emission source. (See Part 1. D.2.f., D.2.h, D.2.g) ☑ NO ☐ YES

If "Yes", answer questions a - f. If "No", move on to Section 7.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. If the proposed action requires federal or state air emission permits, the action may also emit one or more greenhouse gases at or above the following levels:			
i. More than 1000 tons/year of carbon dioxide (CO_2)	D2g	☐	☐
ii. More than 3.5 tons/year of nitrous oxide (N_2O)	D2g	☐	☐
iii. More than 1000 tons/year of carbon equivalent of perfluorocarbons (PFCs)	D2g	☐	☐
iv. More than .045 tons/year of sulfur hexafluoride (SF_6)	D2g	☐	☐
v. More than 1000 tons/year of carbon dioxide equivalent of hydrochloroflourocarbons (HFCs) emissions	D2g	☐	☐
vi. 43 tons/year or more of methane	D2h	☐	☐
b. The proposed action may generate 10 tons/year or more of any one designated hazardous air pollutant, or 25 tons/year or more of any combination of such hazardous air pollutants.	D2g	☐	☐
c. The proposed action may require a state air registration, or may produce an emissions rate of total contaminants that may exceed 5 lbs. per hour, or may include a heat source capable of producing more than 10 million BTU's per hour.	D2f, D2g	☐	☐
d. The proposed action may reach 50% of any of the thresholds in "a" through "c", above.	D2g	☐	☐
e. The proposed action may result in the combustion or thermal treatment of more than 1 ton of refuse per hour.	D2s	☐	☐
f. Other impacts: _____ _____		☐	☐

7. Impact on Plants and Animals

The proposed action may result in a loss of flora or fauna. (See Part 1. E.2. m.-q.) ☑ NO ☐ YES

If "Yes", answer questions a - j. If "No", move on to Section 8.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may cause reduction in population or loss of individuals of any threatened or endangered species, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2o	☐	☐
b. The proposed action may result in a reduction or degradation of any habitat used by any rare, threatened or endangered species, as listed by New York State or the federal government.	E2o	☐	☐
c. The proposed action may cause reduction in population, or loss of individuals, of any species of special concern or conservation need, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2p	☐	☐
d. The proposed action may result in a reduction or degradation of any habitat used by any species of special concern and conservation need, as listed by New York State or the Federal government.	E2p	☐	☐

e. The proposed action may diminish the capacity of a registered National Natural Landmark to support the biological community it was established to protect.	E3c	□	□
f. The proposed action may result in the removal of, or ground disturbance in, any portion of a designated significant natural community. Source: _____	E2n	□	□
g. The proposed action may substantially interfere with nesting/breeding, foraging, or over-wintering habitat for the predominant species that occupy or use the project site.	E2m	□	□
h. The proposed action requires the conversion of more than 10 acres of forest, grassland or any other regionally or locally important habitat. Habitat type & information source: _____ _____	E1b	□	□
i. Proposed action (commercial, industrial or recreational projects, only) involves use of herbicides or pesticides.	D2q	□	□
j. Other impacts: _____ _____		□	□

8. Impact on Agricultural Resources

The proposed action may impact agricultural resources. (See Part 1. E.3.a. and b.) ☑ NO ☐ YES

If "Yes", answer questions a - h. If "No", move on to Section 9.

	Relevant Part I Question(s)	**No, or small impact may occur**	**Moderate to large impact may occur**
a. The proposed action may impact soil classified within soil group 1 through 4 of the NYS Land Classification System.	E2c, E3b	□	□
b. The proposed action may sever, cross or otherwise limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc).	E1a, Elb	□	□
c. The proposed action may result in the excavation or compaction of the soil profile of active agricultural land.	E3b	□	□
d. The proposed action may irreversibly convert agricultural land to non-agricultural uses, either more than 2.5 acres if located in an Agricultural District, or more than 10 acres if not within an Agricultural District.	E1b, E3a	□	□
e. The proposed action may disrupt or prevent installation of an agricultural land management system.	El a, E1b	□	□
f. The proposed action may result, directly or indirectly, in increased development potential or pressure on farmland.	C2c, C3, D2c, D2d	□	□
g. The proposed project is not consistent with the adopted municipal Farmland Protection Plan.	C2c	□	□
h. Other impacts: _____		□	□

9. Impact on Aesthetic Resources

The land use of the proposed action are obviously different from, or are in sharp contrast to, current land use patterns between the proposed project and a scenic or aesthetic resource. (Part 1. E.1.a, E.1.b, E.3.h.)

☑ NO ☐ YES

If "Yes", answer questions a - g. If "No", go to Section 10.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Proposed action may be visible from any officially designated federal, state, or local scenic or aesthetic resource.	E3h	☐	☐
b. The proposed action may result in the obstruction, elimination or significant screening of one or more officially designated scenic views.	E3h, C2b	☐	☐
c. The proposed action may be visible from publicly accessible vantage points: i. Seasonally (e.g., screened by summer foliage, but visible during other seasons) ii. Year round	E3h	 ☐ ☐	 ☐ ☐
d. The situation or activity in which viewers are engaged while viewing the proposed action is: i. Routine travel by residents, including travel to and from work ii. Recreational or tourism based activities	E3h E2q, E1c	 ☐ ☐	 ☐ ☐
e. The proposed action may cause a diminishment of the public enjoyment and appreciation of the designated aesthetic resource.	E3h	☐	☐
f. There are similar projects visible within the following distance of the proposed project: 0-1/2 mile ½ -3 mile 3-5 mile 5+ mile	D1a, E1a, D1f, D1g	☐	☐
g. Other impacts: _____ _____		☐	☐

10. Impact on Historic and Archeological Resources

The proposed action may occur in or adjacent to a historic or archaeological resource. (Part 1. E.3.e, f. and g.)

☑ NO ☐ YES

If "Yes", answer questions a - e. If "No", go to Section 11.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may occur wholly or partially within, or substantially contiguous to, any buildings, archaeological site or district which is listed on the National or State Register of Historical Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places.	E3e	☐	☐
b. The proposed action may occur wholly or partially within, or substantially contiguous to, an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory.	E3f	☐	☐
c. The proposed action may occur wholly or partially within, or substantially contiguous to, an archaeological site not included on the NY SHPO inventory. Source: _____	E3g	☐	☐

d. Other impacts: _____ _____		□	□
e. If any of the above (a-d) are answered "Moderate to large impact may occur", continue with the following questions to help support conclusions in Part 3:			
i. The proposed action may result in the destruction or alteration of all or part of the site or property.	E3e, E3g, E3f	□	□
ii. The proposed action may result in the alteration of the property's setting or integrity.	E3e, E3f, E3g, E1a, E1b	□	□
iii. The proposed action may result in the introduction of visual elements which are out of character with the site or property, or may alter its setting.	E3e, E3f, E3g, E3h, C2, C3	□	□

11. Impact on Open Space and Recreation

The proposed action may result in a loss of recreational opportunities or a reduction of an open space resource as designated in any adopted municipal open space plan.
(See Part 1. C.2.c, E.1.c., E.2.q.)
If "Yes", answer questions a - e. If "No", go to Section 12.

☑ NO ☐ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in an impairment of natural functions, or "ecosystem services", provided by an undeveloped area, including but not limited to stormwater storage, nutrient cycling, wildlife habitat.	D2e, E1b E2h, E2m, E2o, E2n, E2p	□	□
b. The proposed action may result in the loss of a current or future recreational resource.	C2a, E1c, C2c, E2q	□	□
c. The proposed action may eliminate open space or recreational resource in an area with few such resources.	C2a, C2c E1c, E2q	□	□
d. The proposed action may result in loss of an area now used informally by the community as an open space resource.	C2c, E1c	□	□
e. Other impacts: _____ _____		□	□

12. Impact on Critical Environmental Areas

The proposed action may be located within or adjacent to a critical environmental area (CEA). (See Part 1. E.3.d)
If "Yes", answer questions a - c. If "No", go to Section 13.

☑ NO ☐ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in a reduction in the quantity of the resource or characteristic which was the basis for designation of the CEA.	E3d	□	□
b. The proposed action may result in a reduction in the quality of the resource or characteristic which was the basis for designation of the CEA.	E3d	□	□
c. Other impacts: _____ _____		□	□

13. Impact on Transportation

The proposed action may result in a change to existing transportation systems. ☑ NO ☐ YES
(See Part 1. D.2.j)
If "Yes", answer questions a - f. If "No", go to Section 14.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Projected traffic increase may exceed capacity of existing road network.	D2j	☐	☐
b. The proposed action may result in the construction of paved parking area for 500 or more vehicles.	D2j	☐	☐
c. The proposed action will degrade existing transit access.	D2j	☐	☐
d. The proposed action will degrade existing pedestrian or bicycle accommodations.	D2j	☐	☐
e. The proposed action may alter the present pattern of movement of people or goods.	D2j	☐	☐
f. Other impacts: _____ _____		☐	☐

14. Impact on Energy

The proposed action may cause an increase in the use of any form of energy. ☑ NO ☐ YES
(See Part 1. D.2.k)
If "Yes", answer questions a - e. If "No", go to Section 15.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action will require a new, or an upgrade to an existing, substation.	D2k	☐	☐
b. The proposed action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two-family residences or to serve a commercial or industrial use.	D1f, D1q, D2k	☐	☐
c. The proposed action may utilize more than 2,500 MWhrs per year of electricity.	D2k	☐	☐
d. The proposed action may involve heating and/or cooling of more than 100,000 square feet of building area when completed.	D1g	☐	☐
e. Other Impacts: _____ _____			

15. Impact on Noise, Odor, and Light

The proposed action may result in an increase in noise, odors, or outdoor lighting. ☑ NO ☐ YES
(See Part 1. D.2.m., n., and o.)
If "Yes", answer questions a - f. If "No", go to Section 16.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may produce sound above noise levels established by local regulation.	D2m	☐	☐
b. The proposed action may result in blasting within 1,500 feet of any residence, hospital, school, licensed day care center, or nursing home.	D2m, E1d	☐	☐
c. The proposed action may result in routine odors for more than one hour per day.	D2o	☐	☐

d. The proposed action may result in light shining onto adjoining properties.	D2n	☐	☐
e. The proposed action may result in lighting creating sky-glow brighter than existing area conditions.	D2n, E1a	☐	☐
f. Other impacts: _____ _____		☐	☐

16. Impact on Human Health

The proposed action may have an impact on human health from exposure to new or existing sources of contaminants. (See Part 1.D.2.q., E.1. d. f. g. and h.) ☑ NO ☐ YES

If "Yes", answer questions a - m. If "No", go to Section 17.

	Relevant Part I Question(s)	No,or small impact may cccur	Moderate to large impact may occur
a. The proposed action is located within 1500 feet of a school, hospital, licensed day care center, group home, nursing home or retirement community.	E1d	☐	☐
b. The site of the proposed action is currently undergoing remediation.	E1g, E1h	☐	☐
c. There is a completed emergency spill remediation, or a completed environmental site remediation on, or adjacent to, the site of the proposed action.	E1g, E1h	☐	☐
d. The site of the action is subject to an institutional control limiting the use of the property (e.g., easement or deed restriction).	E1g, E1h	☐	☐
e. The proposed action may affect institutional control measures that were put in place to ensure that the site remains protective of the environment and human health.	E1g, E1h	☐	☐
f. The proposed action has adequate control measures in place to ensure that future generation, treatment and/or disposal of hazardous wastes will be protective of the environment and human health.	D2t	☐	☐
g. The proposed action involves construction or modification of a solid waste management facility.	D2q, E1f	☐	☐
h. The proposed action may result in the unearthing of solid or hazardous waste.	D2q, E1f	☐	☐
i. The proposed action may result in an increase in the rate of disposal, or processing, of solid waste.	D2r, D2s	☐	☐
j. The proposed action may result in excavation or other disturbance within 2000 feet of a site used for the disposal of solid or hazardous waste.	E1f, E1g E1h	☐	☐
k. The proposed action may result in the migration of explosive gases from a landfill site to adjacent off site structures.	E1f, E1g	☐	☐
l. The proposed action may result in the release of contaminated leachate from the project site.	D2s, E1f, D2r	☐	☐
m. Other impacts: _____ _____			

17. Consistency with Community Plans

The proposed action is not consistent with adopted land use plans. ☑ NO ☐ YES

(See Part 1. C.1, C.2. and C.3.)

If "Yes", answer questions a - h. If "No", go to Section 18.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action's land use components may be different from, or in sharp contrast to, current surrounding land use pattern(s).	C2, C3, D1a E1a, E1b	☐	☐
b. The proposed action will cause the permanent population of the city, town or village in which the project is located to grow by more than 5%.	C2	☐	☐
c. The proposed action is inconsistent with local land use plans or zoning regulations.	C2, C2, C3	☐	☐
d. The proposed action is inconsistent with any County plans, or other regional land use plans.	C2, C2	☐	☐
e. The proposed action may cause a change in the density of development that is not supported by existing infrastructure or is distant from existing infrastructure.	C3, D1c, D1d, D1f, D1d, Elb	☐	☐
f. The proposed action is located in an area characterized by low density development that will require new or expanded public infrastructure.	C4, D2c, D2d D2j	☐	☐
g. The proposed action may induce secondary development impacts (e.g., residential or commercial development not included in the proposed action)	C2a	☐	☐
h. Other: _____ _____		☐	☐

18. Consistency with Community Character

The proposed project is inconsistent with the existing community character. ☑ NO ☐ YES

(See Part 1. C.2, C.3, D.2, E.3)

If "Yes", answer questions a - g. If "No", proceed to Part 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may replace or eliminate existing facilities, structures, or areas of historic importance to the community.	E3e, E3f, E3g	☐	☐
b. The proposed action may create a demand for additional community services (e.g. schools, police and fire)	C4	☐	☐
c. The proposed action may displace affordable or low-income housing in an area where there is a shortage of such housing.	C2, C3, D1f D1g, E1a	☐	☐
d. The proposed action may interfere with the use or enjoyment of officially recognized or designated public resources.	C2, E3	☐	☐
e. The proposed action is inconsistent with the predominant architectural scale and character.	C2, C3	☐	☐
f. Proposed action is inconsistent with the character of the existing natural landscape.	C2, C3 E1a, E1b E2g, E2h	☐	☐
g. Other impacts: _____ _____		☐	☐

PRINT FULL FORM

Full Environmental Assessment Form
Part 3 - Evaluation of the Magnitude and Importance of Project Impacts
and
Determination of Significance

Part 3 provides the reasons in support of the determination of significance. The lead agency must complete Part 3 for every question in Part 2 where the impact has been identified as potentially moderate to large or where there is a need to explain why a particular element of the proposed action will not, or may, result in a significant adverse environmental impact.

Based on the analysis in Part 3, the lead agency must decide whether to require an environmental impact statement to further assess the proposed action or whether available information is sufficient for the lead agency to conclude that the proposed action will not have a significant adverse environmental impact. By completing the certification on the next page, the lead agency can complete its determination of significance.

Reasons Supporting This Determination:
To complete this section:

- Identify the impact based on the Part 2 responses and describe its magnitude. Magnitude considers factors such as severity, size or extent of an impact.
- Assess the importance of the impact. Importance relates to the geographic scope, duration, probability of the impact occurring, number of people affected by the impact and any additional environmental consequences if the impact were to occur.
- The assessment should take into consideration any design element or project changes.
- Repeat this process for each Part 2 question where the impact has been identified as potentially moderate to large or where there is a need to explain why a particular element of the proposed action will not, or may, result in a significant adverse environmental impact.
- Provide the reason(s) why the impact may, or will not, result in a significant adverse environmental impact
- For Conditional Negative Declarations identify the specific condition(s) imposed that will modify the proposed action so that no significant adverse environmental impacts will result.
- Attach additional sheets, as needed.

The New York City Industrial Development Agency (NYCIDA), as Lead Agency for this review, has determined that the Project as described in the EAF parts 1 and 2 will not result in any significant adverse environmental impacts. The resolution of the board provides the reasons supporting this determination.

Determination of Significance - Type 1 and Unlisted Actions

SEQR Status: ☑ Type 1 ☐ Unlisted

Identify portions of EAF completed for this Project: ☑ Part 1 ☑ Part 2 ☑ Part 3

Upon review of the information recorded on this EAF, as noted, plus this additional support information
176 Dikeman Street Environmental Assessment by Philip, Habib & Associates

and considering both the magnitude and importance of each identified potential impact, it is the conclusion of the
New York City Industrial Development Agency(NYCIDA) as lead agency that:

☑ A. This project will result in no significant adverse impacts on the environment, and, therefore, an environmental impact statement need not be prepared. Accordingly, this negative declaration is issued.

☐ B. Although this project could have a significant adverse impact on the environment, that impact will be avoided or substantially mitigated because of the following conditions which will be required by the lead agency:

There will, therefore, be no significant adverse impacts from the project as conditioned, and, therefore, this conditioned negative declaration is issued. A conditioned negative declaration may be used only for UNLISTED actions (see 6 NYCRR 617.7(d)).

☐ C. This Project may result in one or more significant adverse impacts on the environment, and an environmental impact statement must be prepared to further assess the impact(s) and possible mitigation and to explore alternatives to avoid or reduce those impacts. Accordingly, this positive declaration is issued.

Name of Action: Bungalow 145 Wolcott

Name of Lead Agency: New York CIty Industrial Development Agency (NYCIDA)

Name of Responsible Officer in Lead Agency: Sam Justiniano

Title of Responsible Officer: Planner

Signature of Responsible Officer in Lead Agency: Sam Justiniano Date:

Signature of Preparer (if different from Responsible Officer) Date:

For Further Information:

Contact Person: Sam Justininao

Address: One Liberty Plaza, New York, NY 10022

Telephone Number: [redacted]

E-mail: [redacted]

For Type 1 Actions and Conditioned Negative Declarations, a copy of this Notice is sent to:

Chief Executive Officer of the political subdivision in which the action will be principally located (e.g., Town / City / Village of)
Other involved agencies (if any)
Applicant (if any)
Environmental Notice Bulletin: http://www.dec.ny.gov/enb/enb.html

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