Draft Integrated Interim Response Feasibility Report and Environmental Assessment for Actionable Elements

NEW YORK-NEW JERSEY HARBOR AND TRIBUTARIES COASTAL STORM RISK MANAGEMENT FEASIBILITY STUDY

APPENDIX A-2H HAZARDOUS, TOXIC AND RADIOACTIVE WASTE

July 2025

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1 INTRODUCTION

The United States Army Corps of Engineers (USACE), New York District is preparing an Integrated Interim Response Feasibility Report (FR) and Environmental Assessment (EA) for the East Harlem River Actionable Element (AE) of the New York & New Jersey Harbor & Tributaries Focus Area Feasibility Study (NYNJHATS).

This Hazardous, Toxic and Radioactive Waste (HTRW) Report constitutes a Sub-Appendix that was prepared to support HTRW discussions in the main EA Appendix, analyze HTRW sites within or near the Study Area, and evaluate other environmental concerns that could impact the proposed project.

1.1 STUDY AREA

The proposed project includes two alternatives:

1. An approximately 4,000-foot seawall along the west bank of the Harlem River between approximately the 148th Street Subway Station and the northern tip of the Rangel New York City Housing Authority (NYCHA) development
2. A floodwall spanning roughly the northern two thirds of the approximately 4,000-foot seawall.

Both alternatives are accompanied by several deployable flood barriers/vehicle gates in select locations. For the purpose of this HTRW Report, the Study Area is defined as the area encompassing the features of both proposed alternative along with an approximate 100-foot buffer in any direction.

The surrounding area includes the Harlem River to the east, the Harlem River Drive between alternative project features, and a mix of residential, institutional, commercial, and industrial properties to the north, south, and west.

1.2 REGULATORY FRAMEWORK

This HTRW report was prepared in accordance with the USACE Engineering Regulation (ER) 1165-2-132 and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) 42 United States Code (USC) 9601 et seq. HTRW is defined by ER 1165-2-132 as:

“Except for dredged material and sediments beneath navigable waters proposed for dredging… HTRW includes any material listed as a “hazardous substance” under [CERCLA]… Dredged material and sediments beneath navigable waters proposed for dredging qualify as HTRW only if they are within the boundaries of a site designated by the EPA or a state for a response action (either a removal action or a remedial action) under CERCLA, or if they are part of a National Priority List (NPL) site under CERCLA.”

This HTRW report was prepared by performing the following:

- Review existing and readily available Federal and State records of contaminated sites within or near the Study Area;
- Identification of contaminated sites that are collocated within or near the areas of the proposed project; and
- Determine if collocated or nearby contaminated sites may affect or be affected by the project.

1.3 LIMITS OF REPORT

This HTRW Report relies on publicly available HTRW data. No field visits, site investigations, or samplings were performed. The public databases do not always identify the exact location of an HTRW site within a real property parcel, the media (e.g., soil, sediment, groundwater) that is contaminated, nor the specific chemicals responsible for the contamination. The Study Area is highly urbanized with an extensive history of anthropogenic activity that leads to inherent uncertainty of the subsurface conditions.

Additionally, certain information typical of HTRW Reports (e.g., topography) is not included in this Sub-Appendix due to the information being discussed in the main EA Appendix.

2 REGIONAL DESCRIPTION

The regional description, including topography, geology, hydrogeology, and other usually pertinent information, is discussed in the main EA Appendix.

This East Harlem River AE is located in the Lower Hudson/East River Planning Region. This Planning Region is defined and further discussed in the 2022 Integrated Feasibility Report (IFR) and Tier 1 Environmental Impact Statement (EIS). For HTRW information on this Planning Region as a whole, refer to HTRW Appendix A9 of the 2022 IFR/EIS.

2.1 STUDY AREA ALTERNATIVES

There are two Study Area alternatives:

- The seaward alignment
- The landward alignment

For the purpose of this HTRW Report, both Study Area alternatives are discussed. In general, both alignments have similar HTRW sites with the potential to impact the projects due to their geographic proximity. Below is a discussion of the HTRW considerations unique to each Study Area alternative.

2.1.1 Seaward Alignment

Construction of this alignment will necessitate dredging of sediment located within the Harlem River to support construction of the seawall. The Harlem River has a history of anthropogenic activity and there exists a risk of encountering contaminated sediments. Additionally, this alternative will be disproportionally affected by potential CSO discharges due to being constructed within the Harlem River.

2.1.2 Landward Alignment

Construction of this alignment will necessitate excavation of soil located along the Harlem River to support construction of the floodwall. The Harlem River has a history of anthropogenic activity and there exists a risk of encountering contaminated soils.

3 HISTORICAL CHARACTERISTICS

3.1 SANBORN FIRE INSURANCE MAPS

A select number of Sanborn Fire Insurance Maps were reviewed from the years: 1868, 1879, 1891, 1893, 1897, 1909, and 1928. The entirety of Study Area was not available for every single year and certain years were illegible due to document quality.

1868
The Study Area was depicted as a gridded-out development without significant indication of industry at the time. Minor streams and narrow waterbodies were sparsely shown throughout the map. Highlights of the depiction include swathes of property called out for specific owners and illustrations of marsh overlying development to the west of Harlem River Drive.

1879
This depiction appeared similar to the previous year with some of the waterbody depictions becoming smaller.

1891
The "Polo Grounds Manhattan Field" was shown between 155th and 158th Street. A building labeled "Wood Vulcanizing Co." was depicted in the Study Area north of 155th Street.

1893
The Polo Grounds, ancillary buildings (e.g., club house, grandstands, etc), and the "Huskin Wood Vulcanizing Co." are depicted. Additionally, the "N.Y. & Northern Railroad Station" is shown east-adjacent to the Polo Grounds and the "Manhattan Railway Co. Coaling Station" is shown immediately northeast of the Polo Grounds. Ancillary buildings of the coaling station include those labeled for ash and sand. A bridge labeled "N.Y. and N.R.R." is depicted where the current Macombs Dam Bridge is.

1897
The depiction appeared similar to the previous year.

1909
A comprehensive railroad yard ("Manhattan Railway Company") is depicted north of the Polo Grounds. This includes a large "Inspection Shed and Truck Shop" on the west side of the footprint, a machine shop southwest-adjacent to the inspection shed, and a "Coal Bridge" on the southeast portion of the footprint. Further south, the Polo Grounds and Manhattan Field remain. "Derrick Factory" is show on the corner of 157th Street and 8th Avenue, "Uvalde Asphalt Paving Co" is shown on the eastern end of 157th Street near the water, "N.Y. Foundry Co." is shown on 155th Street, and "Central Bridge Coal Co." and ancillary coal bins are shown on the eastern end of 155th Street near the water.

Further south there are intermittent boat clubs along the water and a "Stone Crushing Works" on the corner of 152nd Street and 7th Avenue. Another railroad yard ("Interborough Rapid Transit Co") is depicted along the water between 148th Street and 150 Street. Ancillary buildings of this property include store houses for paints oils and varnish; blacksmith shops; "coal pockets"; contractor yards; car repair shops; and other storage.

1928
The 1928 map was not of sufficient quality to inform further evaluations.

3.2 HISTORICAL AERIAL PHOTOGRAPHS

Historical aerial photographs from the NYC Now & Then Geographical Informational System (GIS) tool were reviewed. The following years were reviewed: 1924, 1951, 1996, 2006, 2016, and 2022.

The most relevant information was gathered from a comparison of the 1924 (oldest) historical aerial photograph compared to the present day and is discussed below:

The current Rangel NYCHA development was shown to be a railroad yard. Public School (PS) 46, immediately south of the NYCHA development, and its southern and western surrounding properties were shown to be the Polo Grounds and Manhattan field, which extended south to 155th Street. The triangular piece of property between Frederick Douglas Boulevard, Harlem River Drive, and 155th Street was shown to have a shore further landward than today, and a railroad bridge crossing the Harlem River. In general, the properties along the Harlem River appear more industrial than today with shores further landward and a notable absence of Harlem River Drive.

A discussion and comparison of historical aerial photographs in chronological order from present day is included below:

2022
Appears similar to today. The most notable difference is the absence of the the currently constructed structure south of 155th Street and east of Frederick Douglas Boulevard, which is shown as a construction site on the photograph.

2016
Appears similar to the previous photograph with the exception of the above-mentioned construction property being shown as a parking lot.

2006
Appears similar to the previous photograph.

1996
Appears similar to the previous photograph with the property west-adjacent to PS46 shown as a sports field instead of a building.

1951
The Rangel NYCHA development is still shown with what appears to be a road to its east, although it looks characteristically different than the current version of Harlem River Drive. The Polo Grounds and Manhattan Field are shown immediately south of the NYCHA Rangel development. A bridge across the Harlem River is shown immediately east of the Polo Grounds. Harlem River Drive is not shown east of the Polo Grounds; instead, there appears to be general industry with boats along the shore. The shore of the river is slightly further landward and many of the previously shown buildings are not present on the photograph.

Further south, the area south of Macombs Dam Bridge looks generally similar to previous photographs, with the notable absence of Harlem River Drive. A railyard is shown near the southern extent of the Study Area.

1924
The Rangel NYCHA development is shown as a yard filled with railcars and associated storage/loading buildings. The area south of Macombs Dam Bridge is less developed than in the 1954 photograph with the shore further landward.

4 REVIEW OF ENVIRONMENTAL DATABASES

Environmental databases pertaining to HTRW contamination are maintained online by the United State Environmental Protection Agency (USEPA) and the New York State Department of Environmental Conservation (NYSDEC). Based on a review of the readily available USEPA and NYSDEC databases, several listings were identified near or within the Study Area.

4.1 FEDERAL RECORDS

USEPA maintains various environmental databases and interactive mapping tools. The following USEPA tools were utilized for preparing this report:

- Cleanups in My Community (CIMC), located at: https://map22.epa.gov/cimc
- EnviroAtlas, located at: https://enviroatlas.epa.gov/enviroatlas/interactivemap
- Resource Conservation and Recovery Act Information (RCRAInfo) Search, located at: https://enviro.epa.gov/envirofacts/rcrainfo/search

4.1.1 Superfund

CERCLA was established by Congress in 1980, giving USEPA the funds and authority to remediate contaminated sites where there is no identifiable responsible party. The purpose of CERCLA, also referred to as Superfund, is to protect human health and the environment, identify responsible parties to pay for remediation, involve communities in the process, and return contaminated sites to productive uses (USEPA, 2024).

The most contaminated sites under the Superfund Program are those listed on the National Priority List (NPL). The NPL includes over 1,200 sites that represent a significant risk to human health and the environment. For sites investigated by the USEPA that are not elevated to the NPL, their information and data are still compiled on the Superfund Enterprise Management System (SEMS) to ensure adequate tracking of hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of the Superfund Program. For a site to be removed from the NPL, USEPA follows criteria set in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP); however, the sites remain on the Delisted NPL database.

There are no reported NPL, SEMS, or Delisted NPL sites in the Study Area or within one-mile radius. A depiction of regional Superfund database listings in relation to the Study Area is included below as Figure 1.

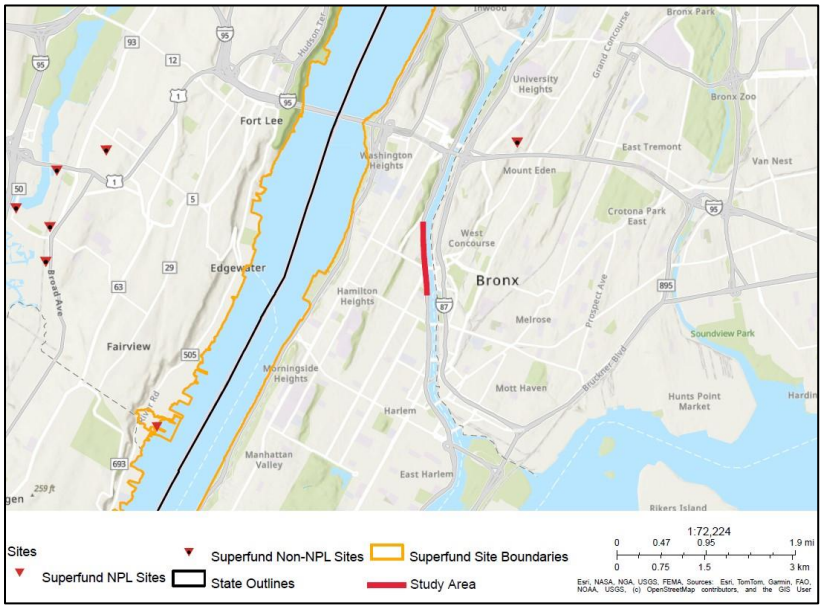

Figure 1: USEPA CIMC Superfund Listings.

4.1.2 RCRAInfo

Hazardous waste information is contained in the RCRAInfo database, a national program management and inventory system about hazardous waste handlers. There are various listings on the RCRAInfo database, with many not relevant to the project. For the purpose of this report, only RCRAInfo listings meeting the following criteria are discussed below:

- Within immediate vicinity of the Study Area (i.e., generally a 1/16-mile radius)
- A known handler type in the database (e.g., Large Quantity Generator [LQG], Small Quantity Generator [SQG], of Very Small Quantity Generator [VSQG])

RCRA LQG

The RCRA LQG database includes facilities that generate more than 1,000 kilograms (kg) of hazardous waste or 1 kg of acutely hazardous waste per month.

There were five RCRA LQGs listings identified in the Study area or in its immediate vicinity. A depiction of RCRA LQG listings in the vicinity of the Study Area is included below as Figure 2.

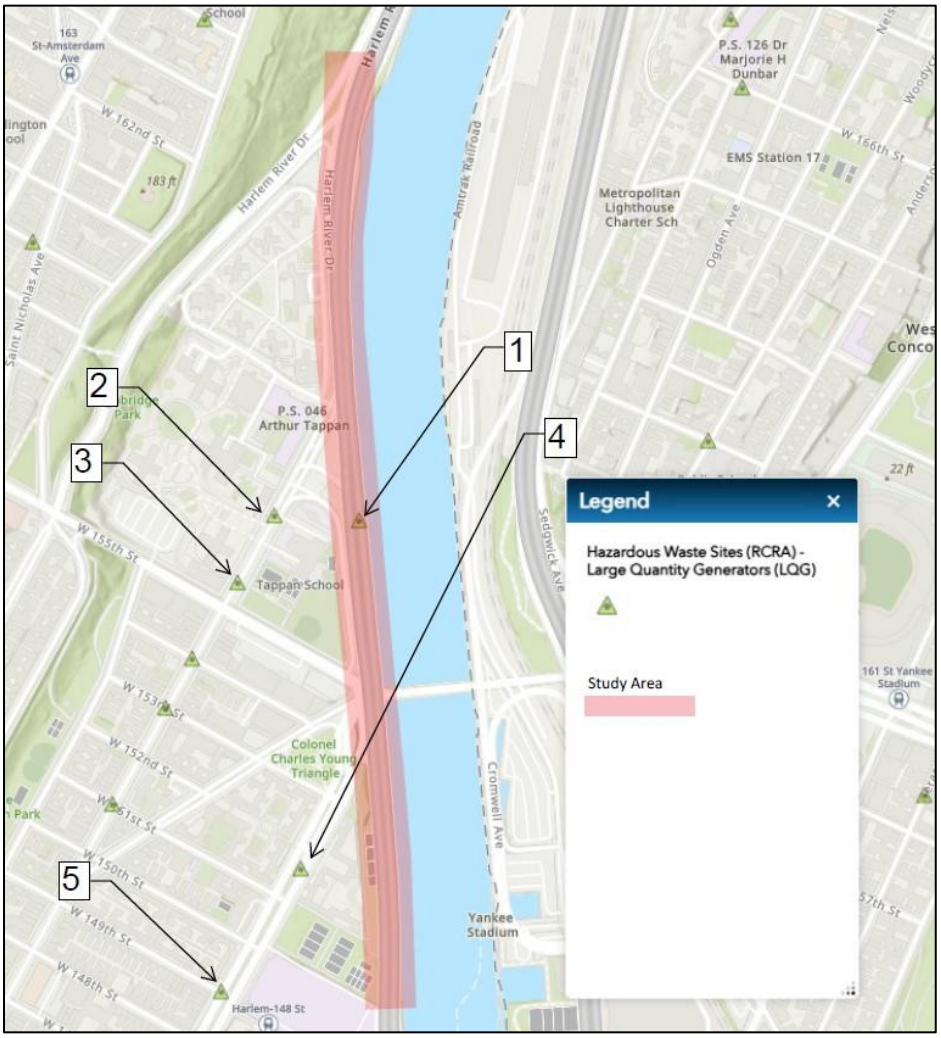

Figure 2: USEPA EnviroAtlas LQG Listings.

Supplemental detail pertaining to the RCRA LQG listings is included below as Table 1.

Table 1: RCRA LQGs.

Key	Site Name	Site Number	Status	Waste	Amount
1	NYCDOT - FDR Dr Viaduct Ave C to 23rd St	NYR000251975	Inactive	Not Listed	Not Listed

Key	Site Name	Site Number	Status	Waste	Amount
2	Con Edison - Manhole 32909	NYP004853863	Inactive	Lead (D008)	5 tons
3	Con Edison - Manhole M32901	NYP005133699	Inactive	Lead (D008)	2.5 tons
4	NYCHA Harlem River Houses Building 1 To 7	NYR000081885	Active	Lead (D008)	2.5 tons
5	Con Edison - Manhole 60935	NYP005080676	Inactive	Lead (D008)	2.5 tons

RCRA SQG/VSQG/Other Collocated

The RCRA SQG database includes facilities that generate between 100 kg and 1,000 kg of hazardous waste per month and the RCRA VSQG database includes facilities that generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

There were three RCRA SQGs and three RCRA VSQGs listings identified in the Study area or in its immediate vicinity. There were also three RCRAInfo Listings that did not meet the criteria for LQG, SQG, or VSQG but were collocated within the Study Area. A depiction of RCRA SQG, VSQG, and other collocated RCRAInfo listings in the vicinity of the Study Area is included below as Figure 3.

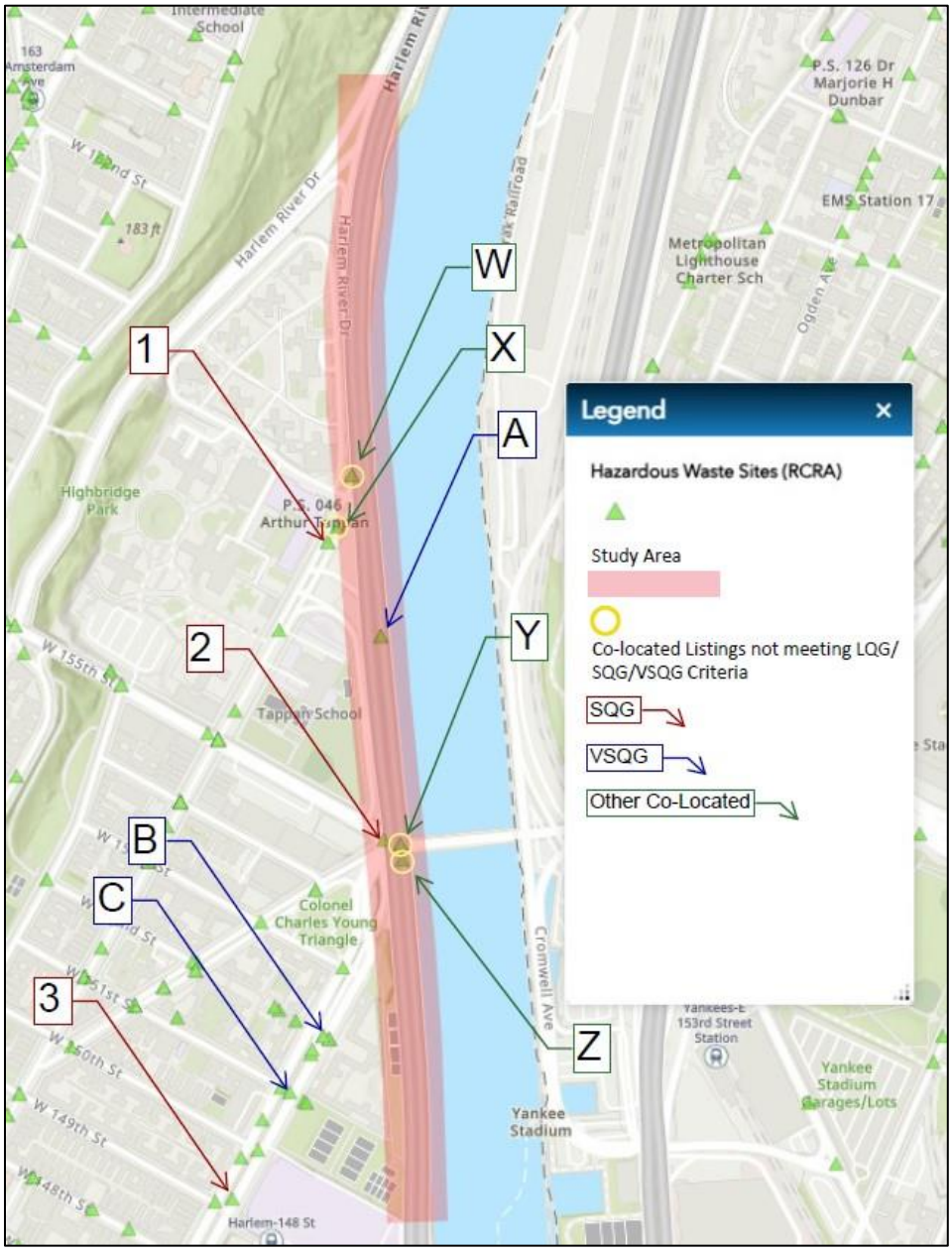

Figure 3: USEPA EnviroAtlas SQG/VSQG/Other Collocated Listings.

Supplemental detail pertaining to the RCRA SQG, VSQG, and other collocated listings is included below as Table 2.

Table 2: RCRA SQGs/VSQGs/Other Collocated Sites.

Key	Site Name	Site Number	Status	Waste	Amount
SQGs					
1	NYC Dept of Education - PS 846M	NYR000187393	Active	Lead (D008)	Not Listed
2	Macombs Dam Bridge NYCDOT	NYR000028712	Active	Not Listed	143.4 tons
3	NYC Dept. of Ed. – Public School 200 IS 10 Manhattan	NYR000172957	Active	Not Listed	Not Listed
VSQGs					
A	NYCPR - Asser Levy Recreation Center	NYR000154195	Active	Ignitable (D001)	Not Listed
B	NYCHA - Harlem River Houses	NYR000081919	Active	Lead (D008)	Not Listed
C	Percy E Sutton Playground	NYR000253971	Active	Lead (D008)	Not Listed
Other Collocated					
W	NYC-HA Rangel (Colonial Park) Houses	NYR000021329	Inactive	Not Listed	Not Listed
X	NYCHA - Polo Grounds	NYR000053231	Inactive	Not Listed	Not Listed
Y	Con Edison Service Box 46083	NYP004242897	Inactive	Not Listed	Not Listed
Z	NYSDOT Contract D254368	NY0000607994	Inactive	Not Listed	Not Listed

Note: many of the Hazardous Waste Site listings shown in the above Figure 3 do not meet the thresholds for RCRA LQG, SQG, or VSQG and are sufficiently distant from the Study Area such that they do not warrant further discussion in this HTRW report.

Additionally, no RCRA Transfer, Storage and Disposal Facilities (TSDF) were identified in the Study Area or within one-mile radius

4.2 STATE RECORDS

NYSDEC maintains a DECinfo Locator tool which compiles various environmental database listings and displays them on an interactive map. The tool displays several layers; however, upon review of the available listings the most relevant layers based on geographical proximity and applicability to the Study Area were: remediation parcels, closed sites, petroleum bulk storage facilities (PBS), chemical bulks storage facilities (CBS), and combined sewer overflow (CSO) outfalls. Other database layers were reviewed as part of this report, but further discussion is not included due to either a lack of relevance or subject listings not being sufficiently close to the Study Area.

4.2.1 Brownfield Cleanup Program

The Brownfield Cleanup Program (BCP) is operated by NYSDEC to encourage private-sector cleanups of brownfields and promote their redevelopment. Eligible sites largely include properties where a contaminant is present at levels exceeding the soil cleanup objectives or other health-based or environmental standards (NYSDEC, 2025a). One BCP listing: 280 West 155th Street Development (ID# C231138) is responsible for both the closed site and remediation parcel listing on the DECinfo locator in the vicinity of the Study Area on the west side of the Harlem River. A depiction of this site and its relation to the Study Area is included below as Figure 4.

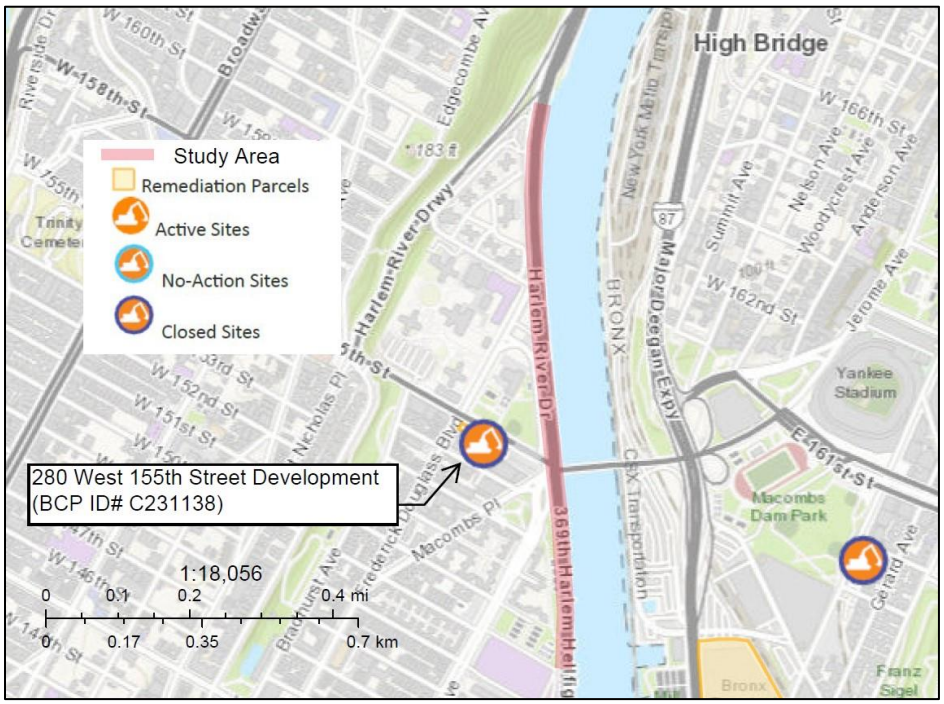

Figure 4: NYSDEC DECinfo Environmental Cleanup Listings.
Source: (NYSDEC, 2025b)

280 West 155th Street Development (ID# C231138)
This BCP Site is located west of the Study Area, with its easternmost boundary approximately 200-feet from the southern tip of the proposed floodwall in the landward alignment and approximately 400-feet from the sea wall in the seaward alignment.

The BCP Site is currently closed indicating that cleanup requirements to address contamination have been met to the satisfaction of the NYSDEC. Accordingly, the site received a Certificate of Completion for a Track 4 Cleanup under the BCP.

Based on a review of available documentation, the BCP Site had varied historical uses including a steam laundry building, an automative repair facility, and a parking lot. On 6 June 2019 NYSDEC Spill No. 1902392 was assigned to the property based on observations of non-aqueous phase liquid (NAPL) during a Phase II Environmental Investigation. The primary contaminants of concern identified in BCP documentation included free phase petroleum in soil and groundwater within the eastern portion of the property; semi-volatile organic compounds (SVOCs) and metals detected in soil and groundwater; and petroleum-related volatile organic compounds (VOCs) and chlorinated VOCs in soil vapor.

Remediation of the BCP Site included excavation and off-site disposal of approximately 14,250 cubic yards of contaminated historic fill exceeding NYSDEC restricted commercial use soil cleanup objectives; closure of Spill No. 1902392; removal and decommissioning of a 6,000-gallon and 800-gallon underground storage tank (UST); and development of a site cover system, site management plan, and environmental easement.

This closed BCP Site has minimal potential to impact the Study Area as remediation has been completed and there exist engineering controls on-site and institutional controls employed to protect human health and the environment.

Further documentation regarding this BCP Site is included on the NYSDEC document repository linked at: https://www.dec.ny.gov/data/DecDocs/C231138/.

4.2.2 PBS, CBS, and CSO Outfalls

NYSDEC maintains environmental databases related to PBS facilities, CBS facilities, and CSO outfalls. These databases contain the remaining listings that are relevant to this report or are sufficiently close to the Study Area. A depiction of these listings in relations to the Study Area is included below as Figure 5.

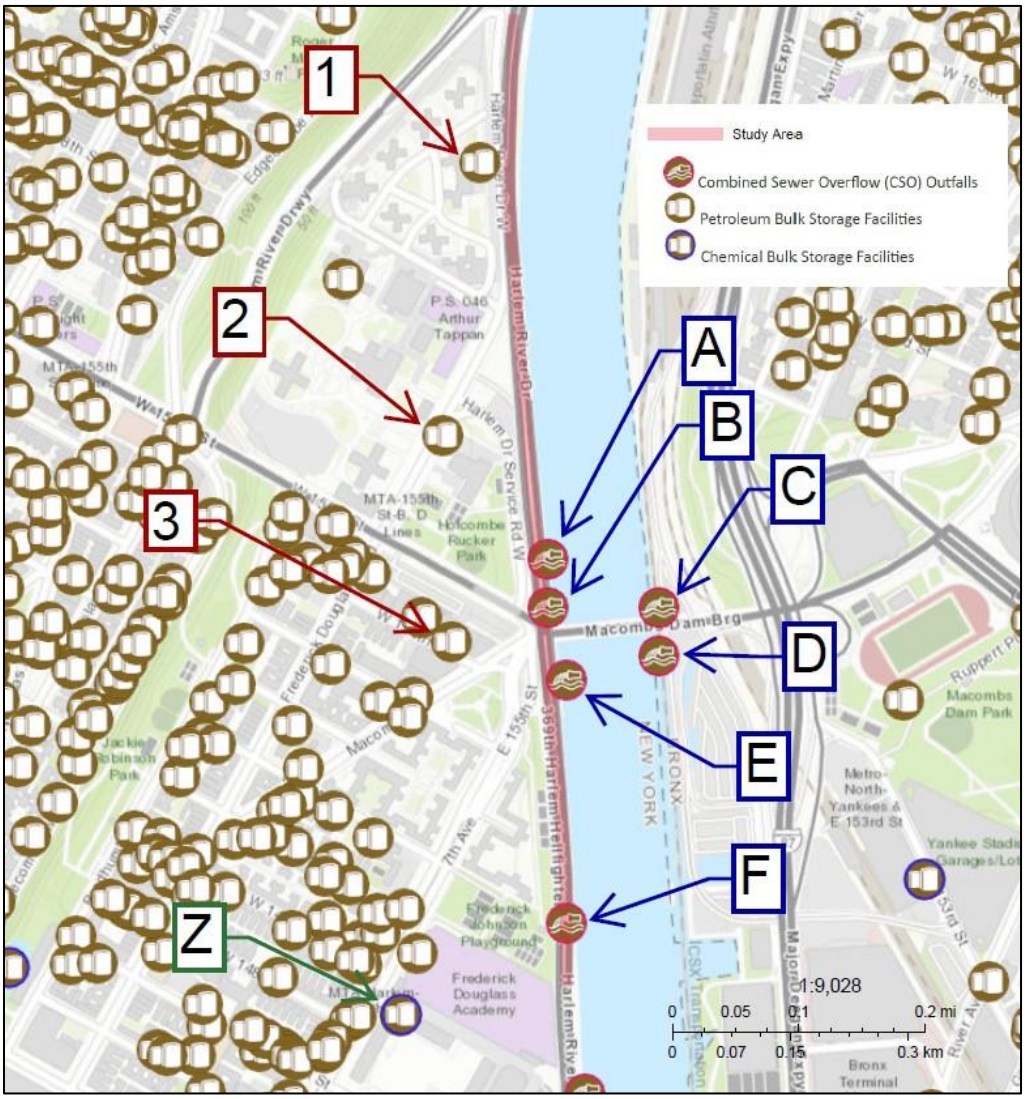

Figure 5: NYSDEC DECinfo PBS/CBS/CSO Outfall Listings.

Source: (NYSDEC, 2025b)

PBS Facilities

Supplemental detail pertaining to the PBS listings is included below as Table 3.

Table 3: PBS Facilities.

Key	Site Name	Site Number	Status
1	Ralph J. Rangel Houses	2-474940	Unregulated/Closed
2	Harlem Men's Shelter	2-601678	Active
3	Fordham Toyota	2-604069	Active

Ralph J. Rangel Houses:

This unregulated/closed facility has seven listed aboveground storage tanks (ASTs) or USTs all either closed – removed or closed – in place. There were previously four 15,000-gallon ASTs in subterranean vaults that stored No. 2 fuel oil; two 20,000-gallon USTs without storage data; and one 275-gallon AST that stored waste oil/used oil.

Harlem Men's Shelter:
This active facility has one in-service 10,000-gallon AST located in a subterranean vault that stores No. 2 fuel oil. No closed ASTs or USTs are listed for this facility.

Fordham Toyota:
This active facility has two in-service 500-gallon ASTs in contact with soil, with Tank No. 001 storing motor oil and Tank No. 002 storing waste oil/used oil. There were previously 13 USTs with capacities ranging from 500-gallons to 5,000-gallons that are all listed as closed – removed, with the exception of one which was closed – in place. The closed USTs had a combined listed capacity of 16,050-gallons and stored either No. 2 fuel oil, gasoline, or waste/used oil.

CSO Outfalls
A combined sewer system (CSS) collects rainwater runoff, domestic sewage, and industrial wastewater into one pipe. Under normal conditions, it transports all the wastewater it collects to a wastewater treatment plant (WWTP), where it receives treatment, before it is then discharged as treated effluent to a nearby waterbody. During wet weather (e.g., rainfall events or snowmelt), the volume of combined wastewater can sometimes exceed the capacity of the CSS or WWTP. When this occurs, untreated or partially treated combined wastewater discharges from an outfall directly to nearby streams, rivers, and other water bodies. Discharges from CSO outfalls may contain bacteria or other pollutants, that may cause illness or other environmental hazards.

Although the project will not impact the operation of the existing CSOs, the listings warrant further discussion due to their ability to potentially discharge pollutants into the vicinity of the study area. Supplemental detail pertaining to the CSO listings shown on the above Figure 5 is included below as

Table 4: CSO Listings.

Key	CSO Outfall Number	SPDES Permit
A	WIM-050	NY0026131
B	WIM-048	NY0026131
C	WIB-062	NY0026131
D	WIB-063	NY0026131
E	WIM-047	NY0026131
F	WIM-046	NY0026131

The NYSDEC link to the State Pollutant Discharge Elimination System (SPDES) Permit No. NY0026131 is located at:
https://extapps.dec.ny.gov/data/IF/SPDES/NY0026131/

The SPDES permit requires a variety of best management practices that reduce the negative effects of CSOs.

CBS Facilities
There is one CBS Facility located in the vicinity of the Study Area shown as "Z" on the above Figure 5. This facility is listed as Esplanade Garden, Inc.-Pool (ID# 2-000172).

This unregulated/closed facility has one closed – removed 250-gallon AST in contact with soil without storage data.

4.3 EXISTING INFORMATION

The HTRW Appendix A9 of the 2022 IFR/EIS identified several sites in the general, but not immediate, vicinity of the Study Area (i.e., not meeting the proximity/relevance thresholds for this HTRW Report) but warrant discussion due to their documented history within the NYNJHATS project. Identified sites were categorized into Groups based on listing type and are summarized in more detail in the abovementioned document. Below is a brief summary of previously identified/mapped sites in the general vicinity of the Study Area.

Group A: NPL and Ongoing Correction Action Sites
No Group A sites were identified in the Study Area or within one-mile radius.

Group B: State Program Sites
One Group B site was identified within a one-mile radius of the Study Area. It is the NYSDEC Voluntary Cleanup Program (VCP) Site 2350 Fifth Ave (ID# V00256). The site is located approximately 0.5-miles south of the southern extent of the Study Area and is listed as closed. Based on closure status and distance to the Study Area it is not anticipated to impact the proposed project.

Group C: Sites with Hazardous Chemical Usage and Releases
Two Group C sites were called out in the 2022 HTRW Appendix A9 and within a one-mile radius of the Study Area. Both were identified on the lead site directory and were not characterized as lead smelters. The 2022 HTRW Appendix A9 concluded that they were not likely of impacting the sites around them. The sites were listed as:

- Con Edison Service Box: 38255
- Con Edison 2911 Frederick Douglass and 216 Bradhurtst Ave and 2113 Amsterdam Ave & 164th St

Group D: Bulk Chemical and Petroleum Storage and Known Spill Sites
There were 1,000+ Group D sites in the Lower Hudson/East River Planning Region. None were specifically called out and for the purpose of this HTRW Report it is not feasible to evaluate all of them. For further information on these listings, refer to the 2022 HTRW Appendix A9.

Group E: Radiological Sites
No Group E sites were identified in the Study Area or within one-mile radius.

5 FINDINGS AND CONCLUSIONS

The Study Area exists in a heavily urbanized portion of the New York Metropolitan Area that has been subject to a history of anthropogenic activity and other uses with the potential to affect the subsurface or otherwise impact the project. Through the evaluations contained within this HTRW Report, several relevant collocated environmental listings or other environmental concerns have been documented, including:

- A history of placing fill of unknown origins to advance the shore of the Harlem River and further development. There exists the potential that certain project features will necessitate excavation through this placed fill.
- A history of industrial activity (e.g., railyards, coal, ash, factories, etc.) in the vicinity of the Study Area.
- Documented environmental database listings in the immediate vicinity of the Study Area, most notably:
    - RCRA LQG: NYCDOT - FDR Dr Viaduct Ave C to 23rd St (ID# NYR000251975)
    - RCRA SQG: Macombs Dam Bridge NYCDOT (ID# NYR000028712)
    - RCRA VSQG: NYCPR - Asser Levy Recreation Center (ID# NYR000154195)
    - NYSDEC BCP: 280 West 155th Street Development (ID# C231138)
    - PBS Facility: Ralph J. Rangel Houses (ID# 2-474940)

These collocated environmental listings and concerns are typical of the New York Metropolitan Area, particularly along the waterfront where industrial activities historically took place. As the proposed project progresses into the Pre-Construction Engineering and Design (PED) a subsurface planning investigation will take place to further characterize the subsurface conditions. This investigation will inform any potential HTRW risks associated with construction and implementation of the proposed project.

Should HTRW be identified during any phase of the project, it is USACE policy to avoid it as practicable. However, if HTRW avoidance is not possible it will be the responsibility of the Non-Federal Sponsor (NFS) to provide a clean site for the project, using 100% non-federal non-project funds, in accordance with ER 1165-2-132.

Implementation of this AE of the NYNJHATS provides not only benefit from a flood risk reduction standpoint, but also a benefit from an HTRW risk reduction standpoint. Storm damage to a significantly urbanized area, such as the Lower Hudson/East River Planning Region, can cause new releases of petroleum and/or hazardous substances, further spread historical contaminated soils and sediment, increase potential risk of exposure, and extend time and increase costs for addressing HTRW sites. In addition to the many benefits of this AE discussed in other parts of the main EA Appendix, it should be noted that implementation of this AE will be associated with a distinct reduction in HTRW risk for the area due to a reduced risk of flooding and its associated negative impacts to HTRW sites.

6 ACRONYMS

AE	Actionable Element
AST	Aboveground Storage Tank
BCP	Brownfield Cleanup Program
CBS	Chemical Bulk
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CIMC	Cleanup in My Community
CSO	Combined Sewer Overflow
CSS	Combined Sewer System
EA	Environmental Assessment
EIS	Environmental Impact Statement
ER	Engineering Regulation
FR	Feasibility Report
GIS	Geographical Information System
HTRW	Hazardous, Toxic and Radioactive Waste
IFR	Integrated Feasibility Report
KG	Kilogram
LQG	Large Quantity Generator
NAPL	Non-aqueous Phase Liquid
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NFS	Non-Federal Sponsor
No.	Number
NPL	National Priority List
NY	New York
NYC	New York City
NYCDOT	New York City Department of Transportation
NYCHA	New York City Housing Authority
NYCPR	New York City Department of Parks & Recreation
NYNJHATS	New York & New Jersey Harbor & Tributaries Focus Area Feasibility Study
NYSDEC	New York State Department of Environmental Conservation
NYSDOT	New York State Department of Transportation
PBS	Petroleum Bulk Storage
PED	Pre-Construction Engineering and Design
PS	Public School
RCRA	Resource Conservation and Recovery Act
RCRAInfo	Resource Conservation and Recovery Act Information
SEMS	Superfund Enterprise Management System
SPDES	State Pollutant Discharge Elimination System
SQG	Small Quantity Generator
SVOC	Semi-volatile Organic Compound
TSDF	Treatment, Storage, and Disposal Facilities
USACE	United States Army Corps of Engineers
USC	United States Codes
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VCP	Voluntary Cleanup Program
VOC	Volatile Organic Compound
VSQG	Very Small Quantity Generator
WWTP	Wastewater Treatment Plant

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