THIRD FIVE-YEAR REVIEW REPORT
LAWRENCE AVIATION INDUSTRIES SUPERFUND SITE
PORT JEFFERSON STATION,
SUFFOLK COUNTY, NEW YORK

Prepared by

U.S. Environmental Protection Agency
Region 2
New York, New York

Pat Evangelista Digitally signed by Pat Evangelista Date: 2025.03.24 07:58:45 -04'00'

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Pat Evangelista, Director
Superfund and Emergency Management Division

Date

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LIST OF ABBREVIATIONS & ACRONYMS

AWQG	Ambient Water Quality Guidance
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	Contaminant of Concern
EPA	United States Environmental Protection Agency
ICs	Institutional Controls
MCL	Maximum Contaminant Level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OU	Operable Unit
O&M	Operation and Maintenance
PCE	Tetrachloroethene
PRPs	Potentially Responsible Parties
ROD	Record of Decision
RA	Remedial Action
RAO	Remedial Action Objective
RD	Remedial Design
RI/FS	Remedial Investigation/Feasibility Study
RPM	Remedial Project Manager
TCE	Trichloroethene
VOC	Volatile Organic Compound
µg/L	Microgram Per Liter
ηg/L	Nanogram Per Liter

I. INTRODUCTION

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (40 CFR Section 300.430(f)(4)(ii)) and considering EPA policy.

This is the third FYR for the for the Lawrence Aviation Industries (LAI) Superfund site (Site), located in Port Jefferson Station, Suffolk County, New York. The triggering action for this statutory FYR is the completion date of the previous FYR, dated March 31, 2020. The FYR has been prepared due to the fact that hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE). The Site consists of one operable unit, which addresses contamination in soil, groundwater, surface water, and sediments.

The LAI Superfund Site FYR was led by EPA: Maria Jon, Remedial Project Manager (RPM), Damian Duda (Supervisor), Chuck Nace (Ecological Risk Assessor), Lora Smith (Human Health Risk Assessor) and William Yeung (Hydrogeologist).

Site Background

The LAI industrial facility (LAI Facility) property, which is part of the Site, is located at 100 Sheep Pasture Road, Port Jefferson Station, Suffolk County, New York. Appendix A, **Figure 1** exhibits the Facility Property Location Map, which covers approximately 42 acres.

The LAI Facility was originally part of a turkey farm owned by LAI's corporate predecessor, Ledkote Products Company of New York. Established in 1951 in Port Jefferson Station, Ledkote produced items including lead gutters and spouts for roof drains. Starting in 1959, under the LAI name, various products were manufactured at the industrial facility from titanium, including sheet metal for the aeronautics industry and other products, including golf clubs.

The LAI Facility previously consisted of 10 dilapidated former manufacturing buildings that occupied over 200,000 square feet of space; these were located in the southwestern portion of the property. An abandoned, unlined, earthen lagoon that formerly received liquid wastes lies west of the buildings. A former drum-crushing area was located south of the buildings. Approximately 80 acres of the Site located to the northeast and east of the LAI Facility are referred to as the "Outlying Parcels," consisting of vacant, wooded areas. Finally, the Site also consists of a downgradient contaminated groundwater plume in a primarily residential area, located to the north of the LAI Facility. The former LAI Facility property has been inactive and unoccupied since 2004, and the 10 abandoned manufacturing buildings were demolished in March 2024.

Port Jefferson High School is within a one-mile radius of the Site. Topographically, the LAI properties (both the industrial facility and the Outlying Parcels) are located at approximately 225 feet

above sea level. The Long Island Railroad and Sheep Pasture Road form the northern boundary of the LAI Facility property; to the east and the west are residential single-family homes; and to the south are a New York State Department of Transportation right-of-way (NYSDOT ROW) and the Long Island Power Authority Right-of-Way (LIPA ROW). The Village of Port Jefferson, the Port Jefferson Harbor, which is an inlet of the Long Island Sound, and a ferry terminal are located one mile to the north. A Site Map depicting relevant Site features and the surrounding area is included as **Figure 2** in **Appendix A**.

During the 1970s and 1980s, the Suffolk County Department of Health Services (SCDHS) and the NYSDEC conducted several inspections and investigations at the Site and documented various environmental concerns. Surface samples from sumps, puddles, laboratory cesspools, and surface water run-off at the LAI Facility were found to contain high levels of fluoride, toluene, carbon tetrachloride, and heavy metals. Adjacent residential wells were found to be contaminated with fluoride, nitrates, trichloroethene (TCE), 1,1-dichloroethene (DCE), cis-1,2-DCE, tetrachloroethene (PCE), and heavy metals. In 1987, as part of a removal action, EPA provided bottled water to affected residences in Port Jefferson and, subsequently, connected those homes with private wells affected by contaminated groundwater to public water supplies. In 1991, the NYSDEC Region 1 Resource Conservation and Recovery Act (RCRA) Hazardous Substance Group oversaw a major drum removal action. In the 1990s, the Suffolk County Water Authority, under contract with the NYSDEC, connected additional homes, affected by groundwater contamination attributed to LAI, to public water supplies. In 1997, NYSDEC conducted a limited remedial investigation (RI) which revealed that groundwater and surface water had been affected by elevated concentrations of chlorinated volatile organic compounds (VOCs).

In 1999, based on the above investigations, NYSDEC requested that EPA place the Site on the National Priorities List (NPL). EPA proposed the Site for inclusion on the NPL on October 22, 1999. The Site was officially listed on the NPL on March 6, 2000.

In December 2003, EPA personnel noted that conditions at the Site, including (but not limited to) leaking vats and drums, warranted EPA to perform a removal action. After LAI did not consent to grant access, as requested by EPA in order to conduct the removal action, EPA issued an Administrative Compliance Order to LAI on February 4, 2004, pursuant to Section 104(e)(5) of CERCLA, directing LAI to comply with EPA's request for access. LAI ultimately complied with this order.

In March and April 2004, the EPA Region 2 Removal Action Branch unstacked and restaged approximately 1,300 drums, containers, and cylinders containing various flammable solids, acids, bases, gas cylinders and unknown compounds, and inventoried the laboratory area, identifying at least 390 containers. Most of the drums and containers were transported off-site for proper disposal in October and November 2004. In March 2005, a 13.5-ton shipment of electric transformers and capacitors filled with suspected polychlorinated bi-phenyl (PCB) liquids which were leaking out was removed from the Site and disposed of as part of the removal action. Any other electric transformers that were intact and not leaking were subsequently removed by NYSDEC personnel.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Lawrence Aviation Industries, Inc		
EPA ID: NYD002041531		
Region: 2	**State:** NY	**City/County:** Port Jefferson Station/Suffolk
SITE STATUS		
NPL Status: Final		
Multiple OUs? No	**Has the site achieved construction completion?** Yes	
REVIEW STATUS		
Lead agency: EPA		
Author name (Federal or State Project Manager): Maria Jon		
Author affiliation: EPA		
Review period 2/30/2020 -2/15/2025		
Date of site inspection: 12/9/2024		
Type of review: Statutory		
Review number: 3		
Triggering action date: 3/31/2020		
Due date *(five years after triggering action date)*: 3/31/2025		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

EPA conducted a Remedial Investigation/Feasibility Study (RI/FS) of the Site for soil, surface water and groundwater from August 2003 to May 2005. The RI documented a VOC-plume originating at the LAI Facility and also identified soil contaminated with PCBs on the LAI Facility property. The VOC that has been identified as the primary contaminant of concern (COC) in groundwater and surface water is TCE. The highest TCE concentrations in groundwater were detected on the LAI Facility at monitoring well MPW-07, at a depth of approximately 200 to 210 feet, with concentrations of approximately 1,100 micrograms per liter (µg/L).

The results of the Human Health Risk Assessment conducted indicated a cancer risk above the EPA target range (10-6 to 10-4) at the Site from exposure to groundwater through ingestion, inhalation,

and dermal contact. Results also indicated a non-cancer hazard above the EPA threshold of unity from exposure to groundwater through ingestion, inhalation, and dermal contact from contaminated groundwater, as well as an elevated non-cancer hazard from exposure to PCB in surface soil at the LAI Facility industrial property.

A screening-level ecological risk assessment evaluation identified the potential for adverse effects as a result of exposure to cis-1,2-DCE in surface water in Old Mill Creek (OMC) and Old Mill Pond (OMP); and PCBs in the soils at the LAI Facility.

A list of documents reviewed in conducting this FYR is provided in **Appendix B**.

Response Actions

EPA issued a Record of Decision (ROD) on September 29, 2006, selecting the remedial action for the Site. The following remedial action objectives (RAOs) were established for the Site:

- Prevent or minimize human exposure with soils having PCB contaminant concentrations in excess of soil cleanup objectives;
- Manage ecological risks;
- Prevent or minimize potential, current, and future human exposures including inhalation, ingestion and dermal contact with VOC-contaminated groundwater;
- Minimize the potential for off-site migration of VOC-contaminated groundwater;
- Restore groundwater to levels which meet NYS Groundwater and Drinking Water Quality Standards within a reasonable time frame;
- Prevent or minimize VOC-contaminated groundwater from discharging into Port Jefferson Harbor;
- Prevent or minimize potential human exposure including ingestion, inhalation and dermal contact with VOC-contaminated surface water;
- Restore surface water to levels which meet Surface Water Quality Standards within a reasonable time frame; and
- Prevent or minimize VOC-contaminated surface water that exceeds water quality standards from discharging into Port Jefferson Harbor.

Remedy Components

The selected remedy involves the remediation of soil and groundwater at the Site. Although surface water and sediments at Old Mill Pond and Old Mill Creek have been contaminated via the discharge of groundwater to these surface water bodies, it is expected that by remediating the groundwater source of contamination, the contamination levels in the surface water and sediments will also be reduced and ultimately eliminated.

Soil Remedy

The selected remedy included the removal of surface soils at the Site, transportation off-site and disposal at an appropriate facility. The estimated quantity to be excavated was approximately 2,000 cubic yards (CY) of surface soils and 25 CY of catch basin sediments at the LAI facility for a total excavation volume of 2,025 CY.

The major components of the remedy that address contaminated soils are:

- Pre-design investigation;
- Excavation of surface soils at the on-site LAI Facility exhibiting PCB concentrations exceeding the remedial goal (RG) of 1 ppm;
- Post-excavation sampling to verify achievement of soil cleanup objectives;
- Disposal of excavated soils at off-site facilities;
- Backfilling of excavated areas with clean fill;
- Institutional controls consisting of an environmental easement/restrictive covenant filed in the property records of Suffolk County that will limit the use of the industrial area to commercial and/or industrial uses only;
- Evaluation of additional catch basins and removal of sediments; and
- Evaluation of approximately 30 electrical transformers for leakage of PCB content; remedial actions to address these transformers if cleanup objectives are exceeded.

Groundwater Remedy

TCE and PCE were detected at multiple depths in the groundwater at levels exceeding EPA's cleanup criteria. The major components of the remedy that address contaminated groundwater are:

- Installation of groundwater extraction and treatment systems at both the LAI Facility and within the plume area near Old Mill Pond;
- In-situ chemical oxidation (ISCO) applied as an initial enhancement within the area of high TCE concentrations in groundwater at the LAI Facility;
- Imposition of institutional controls;
- Development of a Site Management Plan;
- Long-term groundwater and surface water monitoring to provide an understanding of changes in contaminant concentrations and distribution over time; and
- Investigation of vapor intrusion into structures within the area that could be potentially affected by the groundwater contamination plume, and implementation of an appropriate remedy (such as subslab ventilation systems) based on the investigation results. Any new or renovated building or any structure that will be occupied in the future at the LAI facility should be evaluated for soil vapor intrusion.

Status of Implementation

LAI Facility – Groundwater Remedy

EPA funded construction of the LAI Facility groundwater remedy for the source area in May 2009. Project planning and Remedial Action (RA) construction activities were implemented from May 2009 through March 2011.

The RA final construction scope of work included the following:

- Construction of ISCO injection and monitoring wells at the LAI Facility in support of the potassium permanganate ISCO groundwater remedial action performed before the

Groundwater Extraction and Treatment System (GWETS) startup, designed to accelerate the Site remediation schedule.

- Construction of a GWETS at the LAI Facility to achieve hydraulic control and remove contaminant mass from the saturated-zone source of VOC groundwater contamination.

The ISCO injection included the installation of 13 injection and five monitoring wells and required the injection of a 1.5 percent potassium permanganate solution. The GWETS included the following components: two groundwater extraction wells; an air stripper; a transfer pumping system; bag filters; an off-gas treatment system (activated carbon adsorption); and five injection wells. Following the ISCO treatment in the former source area, TCE concentrations rebounded between October 2010 and May 2012 before establishing an anticipated declining trend. The ISCO program met the intended goal of mass reduction and decreased concentrations in the former source area.

The GWETS at the LAI Facility was completed on September 15, 2010, and was deemed operational and functional on September 13, 2011. Hydraulic plume control of the source area is achieved by extracting contaminated groundwater via two extraction wells (EW-01 and EW-02). Extracted groundwater is treated by an air stripper and discharged to groundwater via five upgradient injection wells (IW-01 through IW-05) under a NYSDEC State Pollutant Discharge Elimination System (SPDES) permit equivalent. The VOC-rich air exiting the air stripper is treated by two vapor-phase granular activated carbon (GAC) units before discharging to the air, under a NYSDEC air permit equivalent. In August 2021, EPA optimized the LAI Facility GWETS with the installation of an additional extraction well EW-3. In September 2021, the responsibility for operating and maintaining the LAI Facility GWETS was transferred from EPA to NYSDEC under a formal transfer agreement.

Old Mill Pond – Groundwater Remedy

In the fall of 2009, EPA authorized the allocation of funding to build a second GWETS near Old Mill Pond (GWETS-OMP). This system would capture and treat the contaminated groundwater emanating from the upgradient LAI property, as well as prevent contaminated water from discharging into the Old Mill Pond, Old Mill Creek, and Port Jefferson Harbor.

The GWETS-OMP is located in a predominately residential neighborhood and occupies approximately 0.35 acres of land. Approximately 10 acres of land lies directly east of the property and consists of the Caroline Avenue Ball Field. The southern boundary is outlined by Caroline Avenue, while the western boundary is Brook Road. Residential properties are located along Caroline Avenue and Brook Road.

In April 2010, access consent forms were signed by the Mayor of Port Jefferson, authorizing EPA to construct the GWETS-OMP on public parkland, *i.e.*, the subject property was alienated from the parkland. A replacement parcel of land located elsewhere in Port Jefferson was designated as parkland by New York State.

The downgradient GWETS-OMP was completed on August 18, 2011, and was deemed operational and functional on September 6, 2012. The system includes five extraction wells. The extracted groundwater is treated by an air stripper which is followed by two liquid-phase GAC units. The treated effluent is discharged into the Old Mill Pond and Old Mill Creek under a NYSDEC SPDES permit equivalent. The VOC-contaminated air from the air stripper is treated by three vapor-phase GAC units in lead-lag phase before discharge. In September 2022, the responsibility for operating

and maintaining the GWETS-OMP was transferred from EPA to NYSDEC under a formal transfer agreement, similar to the one transferring the first GWETS.

In January 2007, EPA initiated an investigation to determine if residences and other occupied buildings in the vicinity of the Site might be impacted by the intrusion of VOC vapors resulting from groundwater contamination beneath such properties. Permanent sub-slab soil gas ports were installed in 59 locations. Subsequently, soil gas samples and ambient air samples were collected in SUMMA canisters and analyzed for VOCs.

In April 2008, sub-slab test results from four properties (three residences and the local High School wrestling room) indicated the need for vapor mitigation systems to reduce the potential for VI. As a result, four subslab depressurizations systems (SSDSs) were installed. The responsibility for operating and maintaining the four SSDSs was transferred from EPA to NYSDEC under a formal transfer agreement.

Transformers

EPA inventoried, mapped and sampled 30 transformers for PCB analysis. On April 28, 2014, EPA removed the dielectric fluid from the three leaking transformers and shipped the transformers off-site to a recycling facility. The drums of PCB-contaminated fluids and debris generated from the operation were also shipped off-site for proper disposal. In June 2019, the NYSDEC, under an enforcement action, removed and properly disposed of leaking transformers which contained approximately 1,600 gallons of liquid with PCB concentrations ranging from 1.9 ppm to 160 ppm.

Soils

PCB-contaminated soils were removed from the Drum Crushing Area (DCA), the Recharge Basin and other additional areas of concern (AOCs). The DCA is approximately three acres of cleared land located on the southwestern part of the property and was reportedly used as an area to crush drums prior to disposal. NYSDOT and Long Island Power Authority rights-of-ways are located within the DCA. Between January and September 2009, PCB-contaminated soil was excavated to a depth where post-excavation soil sampling indicated a PCB concentration of 1 ppm or less was encountered. The soil excavation ranged from 12 to 54 inches below ground surface. All remediated areas were lined with geotextile, backfilled and graded with a minimum of one foot of clean soil cover. Final restoration included seeding and mulching of all disturbed areas.

The Recharge Basin, located on the southwestern corner of the LAI Facility, was successfully remediated. Sample locations where PCBs exceeded 1 ppm were excavated to a depth of 12 inches and disposed off-site. Post-excavation samples showed PCB concentrations less than 1 ppm. The excavated area was lined with geo-textile fabric and was backfilled only as needed to establish a consistent gradient throughout.

Additional areas of soil contamination at the Site, known as areas of concern (AOCs), were located in areas at the LAI Facility where previous excavations were conducted for the removal of underground storage tanks or the removal of contaminated soil resulting from PCB contaminated oil spills. Twelve AOCs were excavated, ranging from 12 to 114 inches below ground surface. Post-excavation samples, collected from the sidewalls and the base of the excavation in all AOCs, contained PCB

concentrations less than 1 ppm. Once remediated, as per the ROD, the AOCs were lined with geo-textile fabric, backfilled with clean fill and graded to the previous grade.

In total, approximately 17,000 tons of soil were excavated and shipped off-site for disposal from the DCA, Recharge Basin and AOCs. The Remedial Action Report (RAR) dated September 2014, for the soil component of the ROD, documents the activities completed at the LAI Site for the excavation of contaminated soil and the evaluations of transformers and catch basins located on the LAI manufacturing facility.

Additional Non-LAI Site Operations

In December 2013, EPA discovered an active scrap salvaging operation being conducted by the property owner in Building G at the Site. The salvaging activities caused Asbestos Containing Material to be released onto the floor and to exterior areas. Also, mercury and an acid liquid were spilled onto the floor. As a result of EPA's cease and desist request, the property owner retained an environmental contractor to contain the releases of hazardous substances that had occurred.

From March 2014 until February 2015, EPA performed an emergency removal action to respond to additional threats resulting from the salvaging operation; these included temporarily securing one building (Building G); re-packaging the asbestos, mercury and acid wastes, and disposing off-site; and completing a full-scale asbestos materials survey of all facility buildings. The results from the survey indicated that Building G was the only building that required a response for the removal of friable asbestos. The Pollution Report dated February 27, 2015, documents the emergency removal action performed to address the friable asbestos and properly dispose of the materials off-Site.

LAI Facility Property Redevelopment

In March 2024, in order to facilitate the re-use of the property, NYSDEC completed the demolition of all abandoned buildings at the Site. Building demolition activities were completed by Highground Industrial under a contract with the NYSDEC. Between October 25, 2023, and February 23, 2024, fifteen buildings (including 10 dilapidated former manufacturing buildings) on Site were demolished to the building slabs, and abandoned machinery removed; 3 aboveground propane tanks were sampled and removed from the Site for reuse; and twenty-nine machine pits and sumps were cleaned of debris, and the bottoms of each pit broken up to allow for stormwater infiltration. Approximately 2,315 tons of Asbestos Containing Material debris were removed and properly disposed of and approximately 2,500 tons of steel were recycled. Soil sampling was conducted in order to identify potential subsurface sources of contamination beneath the building slabs, including 34 known machine pits/trenches located throughout the LAI Facility buildings area.

In addition, during the demolition activities, Miller Environmental (Miller) was assigned as the NYSDEC contractor and was tasked with collecting machine oil from the machine pits and properly disposing of the oily waste. Machinery and electrical transformers were drained on Site and all fluids were collected in 55-gallon drums. A total of 39 drums of PCB transformer oil, hydraulics, and machine oils were labeled and stored on Site until shipped. Frac tanks were brought onsite to hold the oily water waste. In addition to the 39 drums, Miller disposed of approximately 60,000-gallons of oily impacted water extracted from the former machine pits.

A soil investigation was also conducted to identify potential subsurface sources of contamination beneath the building slabs and beneath and around the perimeter of 34 known machine pits/trenches located throughout the LAI Facility buildings area. Based on the sampling data, no sources of contamination were found, but the sampling revealed a small, localized area of PCB-contaminated soils along the southeast portion of the Site. NYSDEC performed an excavation of the PCB-contaminated soils on June 25-26, 2024, as documented in the Soil Excavation Report dated July 15, 2024. Approximately 26 cubic yards of impacted soil were removed and transported off-site for proper disposal.

EPA deleted part of the Site from the NPL, namely the 125-acre land/soils portion of the Site, on March 5, 2025. The groundwater plume portion of this Site will remain on the NPL until cleanup goals are achieved. A Final Notice was published in the Federal Register on March 5, 2025.

IC Summary Table

Table 1: Summary of Planned and/or Implemented ICs

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Soil	Yes	Yes	LAI Industrial Property	Limit the use of the former industrial area to commercial and/or industrial uses only; and an evaluation for vapor intrusion into any new or renovated building or on-site structure that will be occupied in the future.	Environmental Easement/Restrictive Covenant was recorded on July 18, 2024.
Groundwater	Yes	Yes	LAI Industrial Property	Restrict the extraction, consumption exposure or use of groundwater at the Site while the groundwater contamination is above health-based levels.	Environmental Easement/Restrictive Covenant was recorded on July 18, 2024. NYSDOH State Sanitary Code (10 NYCRR Part 5) regulates and prevent the installation of wells at a hazardous waste site in the state.
Vapor Intrusion	Yes	Yes	LAI Industrial Property	Any new or renovated building or on-site structure that will be occupied in the future should be evaluated for VI.	Town of Brookhaven has implemented a local ordinance requiring any new buildings to be evaluated for potential VI before a certificate of occupancy is issued.
Soil/Groundwater	Yes	Yes	LAI Industrial Property	Limit the use of the former industrial area to commercial and/or industrial uses only.	EPA recorded Notices to Successors-in-Title on September 23, 2020.

Systems Operations/Operation & Maintenance

HRP Associates, Inc. (HRP), under a contract with the NYSDEC, has been retained to perform the operation, maintenance and monitoring of the LAI-GWETS and the OMP-GWETS.

The operation of the LAI GWETS is being conducted to capture hydraulically and to treat contaminated groundwater at the LAI Site and to prevent the migration of contaminated groundwater further downgradient until restoration of the aquifer is achieved. The LAI-GWETS achieves hydraulic plume control of the contaminated source area by extracting contaminated groundwater via three extraction wells (EW-01, EW-02 and EW-03). Extracted groundwater is treated by two liquid-phase granular activated carbon (GAC) units before re-injected into the aquifer via five injection wells (IW-01 through IW-05) under a NYSDEC SPDES permit equivalent.

The operation of downgradient OMP-GWETS is to capture hydraulically and to provide hydraulic control of the downgradient plume. Currently, the OMP-GWETS includes five extraction wells (EW-1 through EW-4 and EW-6); EW-1, EW-2, and EW-6 are the only active wells. EW-3 and EW-4 are standby wells and are not utilized for the extraction of groundwater as a result of elevated iron levels. If these extraction wells are determined to be necessary in order to reach cleanup objectives, NYSDEC and its contractor will follow up, accordingly. Extraction well EW-5 is only used for groundwater level measurements. The extracted groundwater is treated by an air stripper which is followed by two liquid-phase GAC units. The treated effluent is discharged to OMP under a NYSDEC SPDES permit equivalent. The VOC vapors are treated by three vapor phase GAC units in lead-lag phase before discharge to the air under a NYSDEC air permit equivalent.

As part of the long-term groundwater (and surface water) monitoring plan, water-quality data has been collected to monitor changes in chlorinated VOC concentrations and distribution over time. The ongoing monitoring program consists of 65 monitoring locations, including multiport monitoring wells/extraction wells, and influent and effluent points to and from the air strippers. The effluent from the air stripper is sampled monthly; the extraction wells and re-injection wells are sampled on a quarterly basis. Sampling parameters include PCE, *cis*-1,2-DCE, TCE, ethylbenzene, xylenes, vinyl chloride, arsenic, chromium, lead, manganese, chlorides, iron, total dissolved solids, total suspended solids, pH and alkalinity.

Remedy Resilience

Potential Site impacts from severe weather have been evaluated, and the performance of the remedy is currently not at risk due to the expected effects of weather-related events in the region and near the Site. Please refer to **Appendix C** for additional information.

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the last FYR as well as the recommendations from the last FYR and the current status of those recommendations.

Table 2: Protectiveness Determinations/Statements from the 2020 FYR

OU #	Protectiveness Determination	Protectiveness Statement
LAI Former Industrial Area	Short-term Protective	The remedy for the LAI Site is protective of human health and the environment in the short term because all exposure routes have been addressed, groundwater concentrations are decreasing and impacts to surface water lessening. In order to be protective in the long term, a declaration of covenant, restrictions, and environmental easements needs to be filed for the LAI manufacturing property that will prohibit groundwater use and limit the use of the industrial area to commercial and/or industrial uses only.
Sitewide	Short-term Protective	The remedy for LAI Site is protective of human health and the environment in the short term because all exposure routes have been addressed, groundwater concentrations are decreasing and impacts to surface water lessening. In order to be protective in the long term, a declaration of covenant, restrictions, and environmental easements need to be filed for the LAI manufacturing property that will prohibit groundwater use and limit the use of the industrial area to commercial and/or industrial uses only.

Table 3: **Status of Recommendations from the 2020 FYR**

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
LAI Former Industrial Area	The deed notice contemplated by the Decision Document for the LAI Former Industrial Area has not been implemented.	File a declaration of covenant, restrictions, and environmental easements for the LAI Former Industrial Area to limit the use to commercial and/or industrial uses only.	Completed	Environmental Easement/Restrictive Covenant was recorded on July 18, 2024.	7/18/2024

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

On August 7, 2024, EPA Region 2 posted a notice on its website indicating that it would be reviewing site cleanups and remedies at Superfund sites in New York, New Jersey, and Puerto Rico, including the Lawrence Aviation Industries Superfund Site. The announcement can be found at the following web address: https://www.epa.gov/superfund/R2-fiveyearreviews. In addition to this notification, the EPA Community Involvement Coordinator, or CIC, for the site posted a public notice on the EPA Site profile page announcing the commencement of the FYR . The notice was provided to the Village on December 10, 2024, with a request that the notice be posted on the Village of Port Jefferson webpage at https://www.brookhavenny.gov/731/Town-Notices.

The purpose of the public notice was to inform the community that the EPA will be conducting the third FYR to ensure that the remedy implemented at the Site remains protective of human health and the environment and is functioning as designed. The notice included the contact information for the Remedial Project Manager and CIC for questions related to the FYR process or the Site. Once the

FYR is completed, the results will be made available on EPA's Lawrence Aviation Industries Superfund Site https://www.epa.gov/superfund/lawrence-aviation and at the local Site repository located at the Port Jefferson Free Public Library, 100 Thompson Street, Port Jefferson, NY 11777. In addition, efforts will be made to reach out to stakeholders and local public officials to inform them of the results. No interviews were conducted for this FYR.

Data Review

From June 2020 – 2024, groundwater samples were collected to measure performance of the two groundwater remediation systems. Analytical results are used to monitor contaminant levels over time and to evaluate whether the extraction wells prevent or minimize offsite migration of impacted groundwater and discharges to Port Jefferson Harbor. Groundwater samples were collected throughout the property from a monitoring well network consisting of seven extraction wells, six process monitoring points, nine multiport monitoring wells, three piezometers, and 26 monitoring wells. The monitoring well network is currently being sampled annually. During this review period, groundwater samples were not collected during 2023 as a result of the major building demolition that was occurring within the property.

Groundwater Assessment

Analytical results show a general decline in TCE concentrations between 2020 and 2024 at most sampling locations. The current lateral extent of the TCE plume (footprint) is displayed in **Figure 3**. The most recent data indicates the overall plume mass (dissolved-phase TCE) has decreased and is separating at the 100 µg/L contour into a source-attached (treated source area) plume and a detached-downgradient plume. This separation of the plume into the treated source area and downgradient plume reflects a reduction in the source mass that sustained the plume at steady-state conditions.

TCE concentrations for most monitoring wells sampled during this review period have been non-detect or have been detected but are below the remediation goal of 5.0 µg/L. Monitoring wells with concentrations of TCE that were consistently detected above the remediation goal have either remained stable or have declined in concentration with some variability. The highest concentrations of TCE have been mostly concentrated near the LAI property and downgradient from the property (near the GWETS-OMP facility and the Port Jefferson Harbor). The maximum concentration of TCE during this review period was from IW-ISCO-7 in 2021 with a concentration of 1,690 µg/L. This well was not sampled during the most recent event in 2024, however, nearby wells just downgradient contained TCE below 100 µg/L (EW-01 and EW-03). In addition, although nearby monitoring wells near the LAI property, specifically IW-ISCO-10 and MW-ISCO-2, have consistently exceeded the remediation goal during this review period, TCE at MW-ISCO-2 in 2022 declined to 25.2 µg/L. TCE also declined to 13 µg/L at IW-ISCO-10 in 2024.

Monitoring wells downgradient of the LAI property, such as ERT-MW-1A, ERT-MW-2B, and ERT-MW-2C, exceeded the remediation goal with TCE concentrations of 14 µg/L, 180 µg/L, and 90 µg/L in 2020, but declined to 5.2 µg/L, 75 µg/L, and 7.9 µg/L in 2024, respectively. Concentrations between the LAI property and the GWETS-OMP facility have exhibited TCE detections but are less than those detected from the source area as shown in **Figure 3**.

Declining trends in TCE concentration in most monitoring wells indicate the overall groundwater quality at the Site is improving. Based on the analysis of this data, we may conclude the following:

1. TCE concentrations in both the treated source and downgradient plume areas display some variability, but the overall declining trend indicates groundwater quality is improving.
2. Though concentrations in some wells fluctuated or even increased, the majority of TCE concentrations within the monitoring well network has either remained stable or declined with the majority of having non-detectable concentrations or detectable concentrations below the remediation goal.

Emerging Contaminants

In 2020, New York State established a maximum contaminant level (MCL) of 1.0 µg/L for 1,4-dioxane and 10 nanograms per liter (ηg/L) for perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). In 2023, NYSDEC issued ambient water quality guidance (AWQG) values for PFOA (6.7 ηg/L), PFOS (2.7 ηg/L) and 1,4-dioxane (0.35 µg/L). In 2024, EPA established MCLs for PFOA and PFOS at 4.0 ηg/L, along with six other PFAS compounds.

During this review period, 1,4-dioxane was sampled in 2020 and 2022 at select monitoring locations and at an expanded set of wells in 2024. Concentrations from the 2020 sampling event marginally exceeded the NYSDEC AWQG value of 0.35 µg/L at ERT-MW-2B (exceeded at duplicate sample), MW-09-C, and MW-09-D with concentrations 0.46 µg/L, 0.53 µg/L, and 0.54 µg/L respectively. Concentrations from the 2022 sampling event did not exceed the NYSDEC AWQG value. During the 2024 sampling event, 1,4-dioxane was detected above the NYSDEC AWQG value at ERT-MW-1A, ERT-MW-1B, ERT-MW-2B, ERT-MW-2D, ERT-MW-4B, ERT-MW-5A, ERT-MW-5B, ERT-MW-6A, ERT-MW-6B, MPW-01C, MPW-02C, MPW-02D, MPW-03C, MPW-03D, MPW-06D, MPW-08E, MPW-09D, MW-PD-15, and MW-PD-16. Concentrations have ranged from non-detectable levels to 0.73 µg/L, which was exhibited at MPW-09D. Most monitoring wells with 1,4-dioxane exceedances are located downgradient of the LAI property (near the OMP facility and Port Jefferson Harbor) with some monitoring wells located near the LAI property such as MPW-02C, MPW-02D, MPW-03C, and MPW-03D. Overall, the concentrations detected represent low level exceedances of the NYSDEC AWQG value, and no result exceeded the State MCL of 1.0 µg/L.

PFAS sampling was conducted in August 2018. PFAS concentrations were detected in all samples collected. Concentrations of PFOA slightly exceeded the federal MCL of 4.0 ng/L at LA-4-D (4.47 ng/L) and LA-6-D (7.8 ng/L). Concentrations of PFOS were detected below the federal MCL of 4.0 ng/L at all sampling locations.

PFAS concentrations were further analyzed during the 2024 sampling event. Concentrations of PFOA and PFOS exceeded the NYSDEC AWQG values and EPA MCL at numerous concentrations. The maximum PFOA and PFOS concentrations were 20 and 39 ng/L, respectively. Most of these detections were located downgradient of the LAI property (near the OMP facility and Port Jefferson Harbor). Monitoring wells closer to the source area generally contained PFOA and PFOS at lower levels, although some exceeded the state guidance values and EPA MCL. EPA will continue to work with NYSDEC on PFAS sampling recommendations moving forward.

Surface Water

During the June 2020, 2021, 2022, and 2024 sampling events, six surface water samples were collected and analyzed for VOCs and 1,4-dioxane. Four freshwater samples were collected from OMP, and two saltwater samples from Port Jefferson Harbor. TCE and its derivatives (cis-1,2-DCE and vinyl chloride) were detected at four locations in 2020, all six locations in 2022, and at five locations in 2024.

TCE concentrations at SW-05, SW-07, and SW-16 have seen a gradual decrease during this review period, although a slight increase was observed at SW-06 and SW-08. However, the increased concentrations at SW-08 are still below the remediation goal. SW-15 had a slight concentration increase from non-detectable levels in 2020 to 0.54 µg/L in 2022 before declining back to non-detectable levels in 2024. TCE concentrations have only been above the remediation goal at SW-06, although a decline from the maximum of 19 µg/L at during the June 2020 sampling event has been observed. SW-06 will continue to be monitored.

Concentrations of 1,4-dioxane were non-detect for all surface water samples during the 2020 and 2022 sampling events. During the 2024 sampling event, concentrations of 1,4-dioxane were non-detect at SW-15 and SW-16 but were detected (but below the NYSDEC AWQG value of 0.35 µg/L) at SW-05, SW-06, SW-07, and SW-08 at concentrations ranging from 0.12 µg/L to 0.31 µg/L. Surface water samples were not collected in 2021 and 2023.

Surface water samples were sampled for PFAS in 2024. PFAS concentrations were detected in all surface water samples, although the maximum concentration was 6.8 ng/L for PFOA (SW-05) which is essentially equivalent to the NYSDEC AWQG of 6.7 ng/L. PFOA detected at SW-06 (5.6 ng/L) also slightly exceeded the federal MCL. However, there is no use of this surface water for potable purposes and the detections are not likely to lend themselves to adverse ecological effects.

Site Inspection

A Site inspection was conducted on December 9, 2024. In attendance were EPA: Maria Jon – RPM, Damian Duda – Supervisor, Chuck Nace – Supervisor (Risk Assessment Support Section) and Emma Mendelsohn (Ecological Risk Assessor); NYSDEC: Payson Long (Project Manager), and Kira Bruno (Environmental Specialist) and HRP: Derek Roy – Project Manager.

During the Site visit, the team observed that the old Site buildings, including housing and machinery, had been demolished and removed. The concrete slabs that once supported these structures still remain in place. Additionally, as part of building demolition activities, the machine pits/trenches were drained, equipment removed, cleaned, and backfilled to grade with recycled concrete aggregate (RCA).

Four areas (identified as machine pits #1, #7, #10, and #33) remain open and fenced due to concerns over potential oily contamination during the 2024 building demolition. During 2025, these pits will be remediated by removing any freestanding water with residual machine oil and disposing of the water either at an off-site approved facility or by pumping through the onsite groundwater treatment system, and debris or trash that has collected will be removed. The pits will be filled with flowable concrete fill and the upper sections fill with RCA to grade.

Observations made during the Site inspection indicated that the remedy-related infrastructure was in good condition. All monitoring and extraction wells were found to be properly secured and locked, and the treatment system buildings were found to be properly secured. No evidence of trespassing and vandalism was observed during the inspection.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

The remedy was designed to remove contaminated soil, to control migration of contaminated groundwater and to treat groundwater contamination through ISCO as well as pumping and treatment. Currently, the soil exposure pathway has been eliminated as a result of the removal of contaminated soil, and the groundwater pathway is not complete due to the drinking water source being municipal water. Contaminated groundwater continues to discharge to the OMP, located downgradient of the Site, although concentrations (particularly TCE) have decreased since implementing the remedy. Given the successes observed so far, the remedy is functioning as intended, although cleanup goals have not been reached.

Surface water quality has improved significantly since the OMP-GWETS began operating in August 2011. Analytical results for TCE in surface water samples collected from the OMP have decreased considerably from 2008 to 2024. The remedy is improving groundwater quality; however, TCE in the OMP facility still exceeds the RAOs that are specified in the ROD.

Analytical results for 1,4-dioxane have slightly exceeded the NYSDEC AWQG value but were below the state MCL of 1.0 µg/L. Analytical results for several monitoring wells predominately downgradient of the LAI property for PFOS and PFOA have exceeded the NYSDEC AWQG values and federal MCLs. EPA will continue to work with NYSDEC on PFAS sampling recommendations moving forward.

Consistent with the selected remedy, EPA evaluated the potential for VI at properties overlying the downgradient plume. Based on subslab sampling results, four subslab mitigation systems were installed. NYSDEC is continuing its VI inspections at these properties each winter heating season.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

Human Health

There have been no physical changes to the Site that would adversely affect the protectiveness of the remedy. A baseline human health risk assessment (BHHRA) was conducted as part of the RI/FS from August 2003 to May 2005. Potential risks to human health associated with exposure to the site media including groundwater, surface water, sediment and soil were evaluated. Results from the BHHRA indicated under the current/future residential land use scenario, the COCs (TCE, PCE and their breakdown products) resulted in unacceptable carcinogenic risk and noncarcinogenic health effects based on exposure to contaminated groundwater and soils at the site. The exposure assumptions and

the toxicity values that were used to estimate the potential risks and hazards to human health followed the general risk assessment practice at the time the risk assessment was performed. Although the risk assessment process has been updated and specific parameters and toxicity values may have changed, the risk assessment process that was used is still consistent with current practice and remedial action objectives remain appropriate.

Surface soils at the Site contaminated with PCB concentrations exceeding Site remediation goals were excavated and backfilled with clean fill. As the contaminated soil at the site was removed from the site, the direct contact with contaminated in soil exposure pathway is incomplete. Although the provision of municipal water interrupts the drinking water pathway, the groundwater remedial actions of extraction and treatment systems and ISCO have further removed contamination from the groundwater and have resulted in stable to decreasing trends. Groundwater monitoring will continue as part of operation and maintenance (O&M) and an institutional control to prohibit the use of Site-related, contaminated groundwater has now been implemented.

Vapor intrusion continues to be evaluated as part of the remedy O&M. NYSDEC continues to monitor the four sub-slab mitigation systems installed. In the last five years, data indicate that the mitigation systems continue to function effectively. In addition, a local ordinance has been put into place that requires any new or renovated building or any structure that will be occupied in the future at the LAI facility to be evaluated for VI.

No additional sources of contamination, COCs, exposed populations or exposure pathways have been identified since the last FYR. There have been no other changes in Site conditions that could affect the protectiveness of the remedy. The cleanup levels that were used for the soil, sediment and surface water were NYSDEC values, and the groundwater cleanup levels were the lower of the state and federal MCLs. The values selected in the ROD are still valid. The RAOs for soil, groundwater and sediment and surface water are still valid as well.

Ecological Risk

A screening-level ecological risk assessment (SLERA) was conducted for the LAI superfund site. The SLERA identified the potential for terrestrial and aquatic adverse effects due to a variety of chemicals in surface water, sediments, and soils. A Step 3A ecological risk evaluation, conducted as an addendum to the SLERA, refined the list of COCs for the Site. This assessment identified PCBs in LAI soils and cis-1,2-DCE in OMP and OMC surface water as ecological COCs. All cleanup values and RAOs associated with ecological receptors are still valid.

The on-Site soil that contained PCBs at elevated levels has been excavated and backfilled with clean soil. Thus, the exposure pathway for ecological receptors exposed to on-site soil has been eliminated and no further monitoring is necessary.

The ROD identified contaminated groundwater from the Site as the source of surface water contamination in OMC and OMP. Therefore, the groundwater remedy was expected to decrease risk to ecological receptors from surface water pathways. No remedial action was selected to directly address contaminated surface water. Groundwater monitoring data indicates that groundwater COC concentrations are declining over time and that the groundwater plume is decreasing in size. Surface water COC concentrations have likewise declined since the groundwater remedy, indicating the

remedy is on track to effectively protect ecological receptors. Monitoring of surface water will continue.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

No other information has come to light that could call into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
OU1

VII. PROTECTIVNESS STATEMENT

Protectiveness Statement(s)	
Operable Unit: 1	*Protectiveness Determination*: Protective
Protectiveness Statement The implemented remedies for OU1 Site are protective of human health and the environment.	

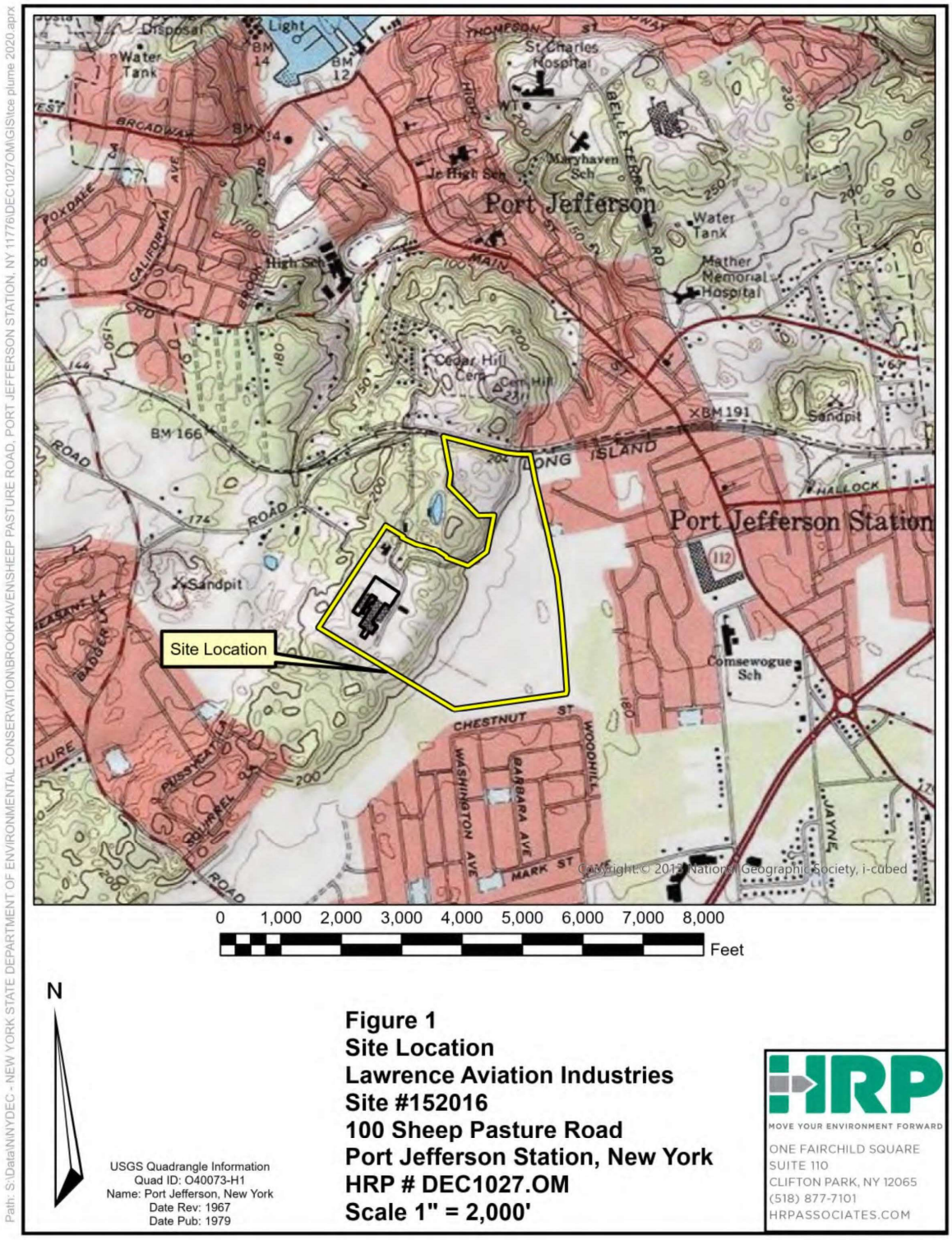
Sitewide Protectiveness Statement
Protectiveness Determination Protective
Protectiveness Statement The implemented remedies for the LAI Site are protective of human health and the environment.

VIII. NEXT REVIEW

The next FYR for the LAI Superfund Site is required five years from the completion date of this review.

APPENDIX A

FIGURES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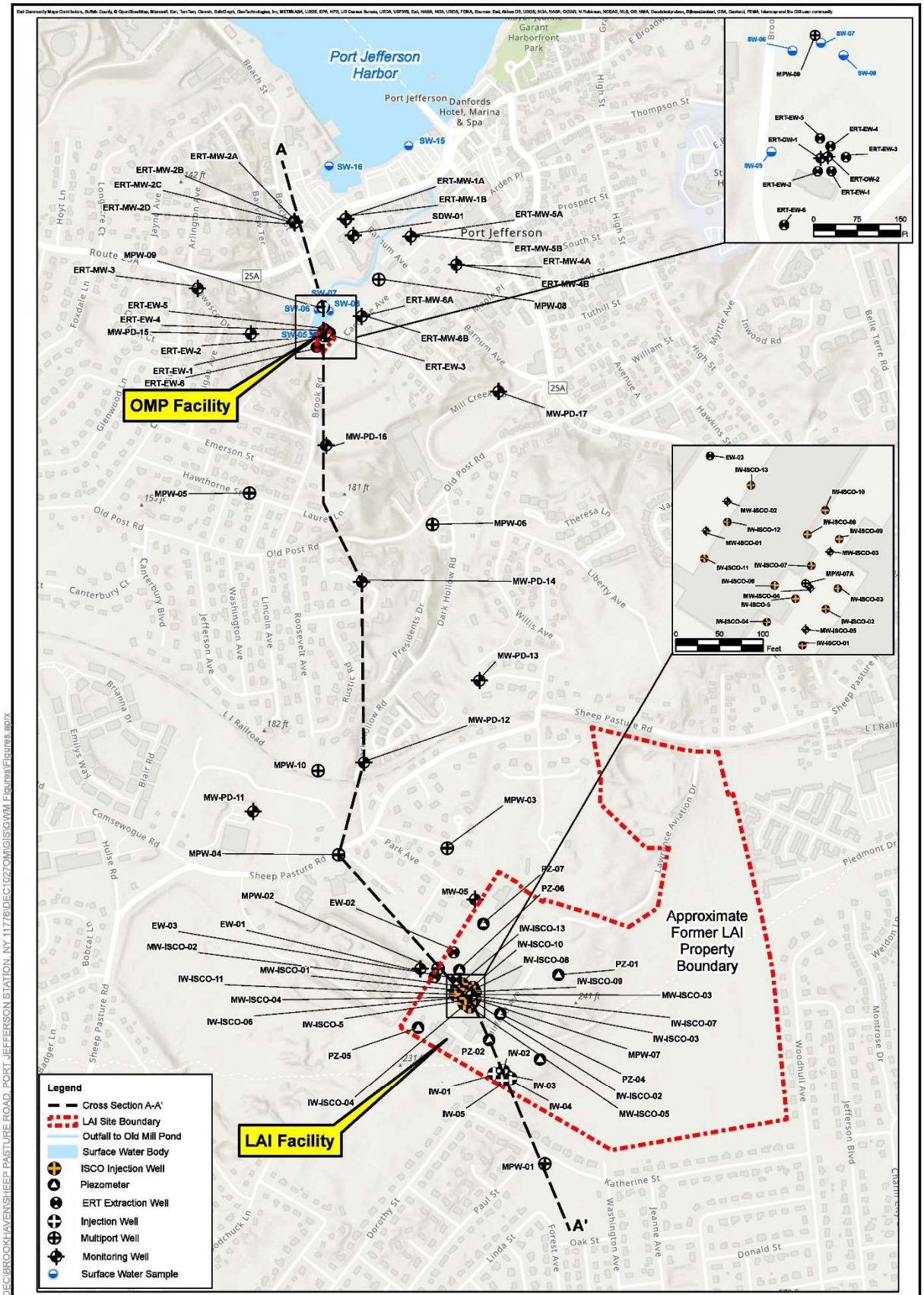
Port Jefferson
Port Jefferson Station
Site Location
St Charles Hospital
Mather Memorial Hospital
Comsewogue Sch
Sandpit
Water Tank
Cooper Hill Cem
LONG ISLAND
MAIN
CHESTNUT ST
WASHINGTON AVE
BARBARA AVE
MARK ST
WOODHILL
JAYNE
HALLOCK
BM 166
BM 191
Copyright © 2013 National Geographic Society, i-cubed
0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 8,000
Feet
N
USGS Quadrangle Information
Quad ID: O40073-H1
Name: Port Jefferson, New York
Date Rev: 1967
Date Pub: 1979
Figure 1
Site Location
Lawrence Aviation Industries
Site #152016
100 Sheep Pasture Road
Port Jefferson Station, New York
HRP # DEC1027.OM
Scale 1" = 2,000'
HRP
MOVE YOUR ENVIRONMENT FORWARD
ONE FAIRCHILD SQUARE
SUITE 110
CLIFTON PARK, NY 12065
(518) 877-7101
HRPASSOCIATES.COM



HRP
MOVE YOUR ENVIRONMENT FORWARD

197 SCOTT SWAMP ROAD
FARMINGTON, CT 06032
(860) 674-9570
HRPASSOCIATES.COM

Monitor Well/Surface Water Sample Locations and Cross Section Map

Lawrence Aviation Industries
SITE NO. 152016
Sheep Pasture Road
Port Jefferson, New York

DESIGNED BY: JH	SHEET SIZE: 11X17
DRAWN BY: BOB	DATE: 06/18/2024
REVIEWED BY: DR	PROJECT NUMBER: DEC1027.OM

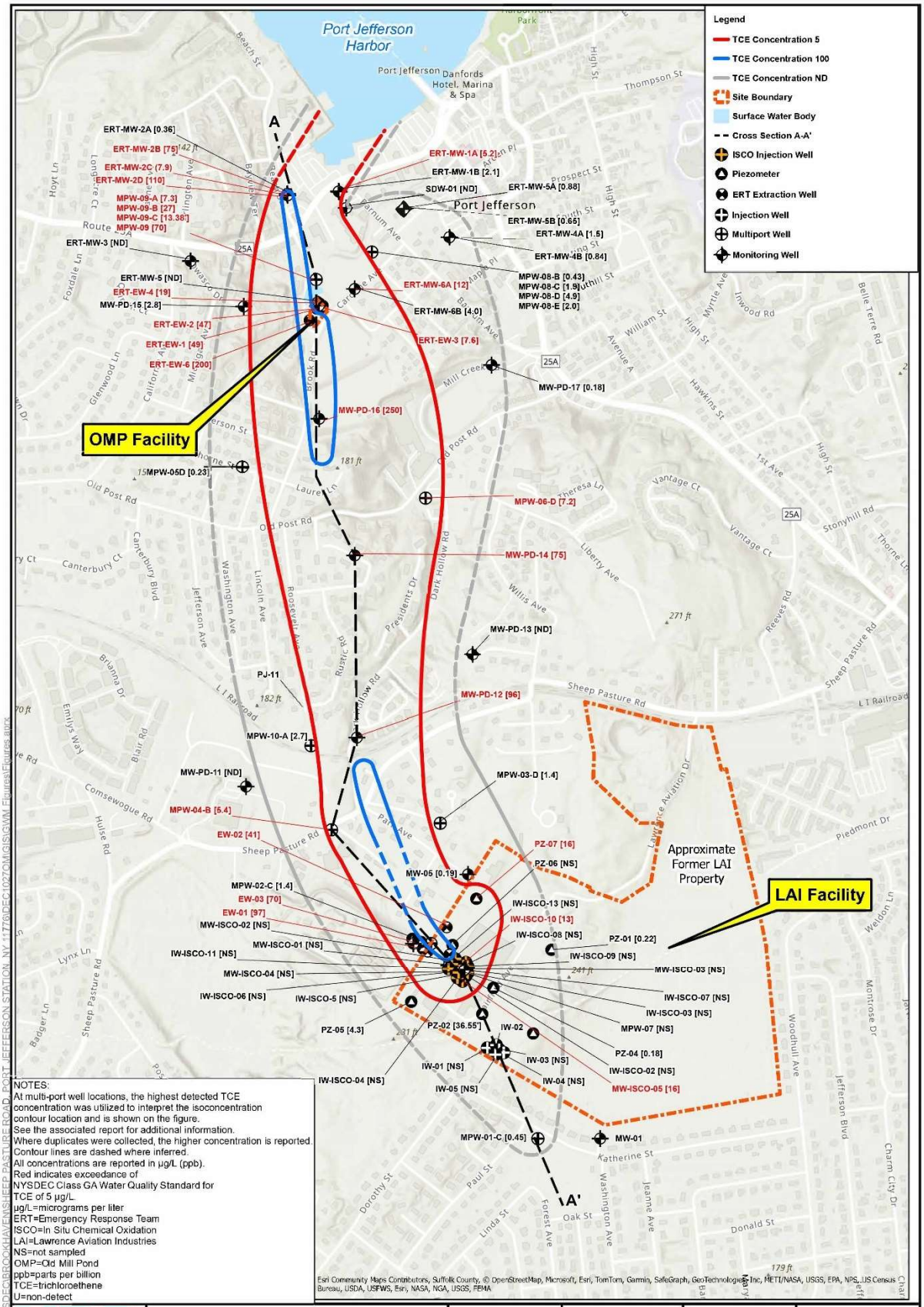
North

1" = 700'

0 350 700 Ft

FIGURE 2

Path: S:\Data\NNYDEC - NYSDEC\BROOKHAVEN\SHEEP PASTURE ROAD, PORT JEFFERSON STATION, NY 11776\DEC1027OM\GIS\GWM Figures\Figures.aprx



NOTES:
At multi-port well locations, the highest detected TCE concentration was utilized to interpret the isoconcentration contour location and is shown on the figure.
See the associated report for additional information.
Where duplicates were collected, the higher concentration is reported.
Contour lines are dashed where inferred.
All concentrations are reported in µg/L (ppb).
Red indicates exceedance of NYSDEC Class GA Water Quality Standard for TCE of 5 µg/L.
µg/L=micrograms per liter
ERT=Emergency Response Team
ISCO=In Situ Chemical Oxidation
LAI=Lawrence Aviation Industries
NS=not sampled
OMP=Old Mill Pond
ppb=parts per billion
TCE=trichloroethene
U=non-detect

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Path: S:\Data\NNYDEC - NYSDEC\BROOKHAVEN\SHEEP PASTURE ROAD, PORT JEFFERSON STATION, NY\1776\DEC1027OM\GIS\CAM Figures\Figures.aprx

April 2024 TCE Isoconcentration Contours

Lawrence Aviation Industries
Site No. 152016
Sheep Pasture Road
Port Jefferson, New York

DESIGNED BY: JH	SHEET SIZE: 11X17
DRAWN BY: BOB	DATE: 06/05/2024
REVIEWED BY: DR	PROJECT NUMBER: DEC1027.OM

North

1" = 700'

0 350 700 Ft

FIGURE 3

APPENDIX B

REFERENCE LIST

Document Title, Author
CDM Federal Programs Corporation, Final Remedial Investigation/Feasibility Study Report, Lawrence Aviation Industries, Port Jefferson Station, NY, June 16, 2004. Prepared for the U.S. Environmental Protection Agency.
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2016 Comprehensive Sampling Event report, Long-Term Response Action, Lawrence Aviation Industries, Port Jefferson Station, NY, Henningson, Durham & Richardson, Architecture and Engineering PC (HDR), September 2016
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EPA, 2020. Second Five-Year Review Report for Lawrence Aviation Industries, Inc. Superfund Site, Suffolk County, New York. March 2020.

HRP, 2023. Investigation Work Plan for Lawrence Aviation Industries, Inc. Site. November 6, 2023. Prepared for the New York State Department of Environmental Conservation.
HRP, 2024. Soil Excavation Report for Lawrence Aviation Industries, Inc. Site. July 15, 2024. Prepared for the New York State Department of Environmental Conservation.
Declaration Of Covenants, Restrictions, and Environmental Easement for Parcel 159-2-19 and Parcel 159-1-26 in New York Regarding the Lawrence Aviation Industries Incorporated Site, July 2024
NYSDEC Concurrence on the Partial Deletion of the Lands/Soils Portion from The National Priorities List (NPL) For the Lawrence Aviation Industries Incorporated Site, July 2024
Site-Specific Justification for the Partial Deletion from The National Priorities List of the Lawrence Aviation Industries Incorporated, July 2024
HRP, March-April 2024 Groundwater Report, Lawrence Aviation Industries Port Jefferson Station, New York
EPA, A Notice of Intent to partially delete the Lawrence Aviation Industries Superfund site (125-acre land/soils and groundwater portion, which does not include the groundwater plume of the Site) from the NPL and requests public comments on this proposed action, Federal Register, August 16, 2024.
EPA, A Final Notice to partially delete the Lawrence Aviation Industries Superfund site (125-acre land/soils and groundwater portion, which does not include the groundwater plume portion of the Site) from the NPL, Federal Register, March 5, 2025.

APPENDIX C
REMEDY RESILIENCE EVALUATION

Three tools were utilized to assess the Lawrence Aviation Industries Superfund Site. The first tool used to assess the site was the CMRA Tool. The tool examined five hazards for the county at the Site. The drought (**Figure C-1**) and wildfires (**Figure C-2**) hazards received risk index ratings of "Very Low" and "Relatively Low", respectively. The extreme heat hazard was assessed to be "Relatively Moderate", projecting an increase of days per year with maximum temperatures over 100 degrees (**Figure C-3**).

The hazards, flooding, and coastal inundation received risk index ratings of "Relatively High". The annual average of total precipitation is projected to increase, slightly by an increase of days that exceed the 99th percentile in precipitation per year (**Figure C-4**). Nevertheless, the site property has not been significantly impacted by flooding in the past. As shown in **Figure C-5**, the percent of the county impacted by global sea level rise is 1%. Flooding has not impacted the site previously; the O&M plan includes regular inspections and repairs as needed to address flooding and major storm event damages.

The second tool utilized is called NOAA Sea Level Rise Viewer. This tool assessed the potential for impacts to the site vicinity from sea level rise and coastal flooding. Despite the county-wide risks from coastal inundation reported by the CMRA tool, the Sea Level Rise Viewer showed no impacts to either the Site or the surrounding area with up to 10 feet of sea level rise (**Figure C-6**) and high tide flooding (**Figure C-7**). The nearest affected areas are located immediately adjacent to the Port Jefferson Harbor located approximately 4.5 miles from the Site.

The third tool utilized is called the USGS U.S. Landslide Inventory. According to this tool, the vulnerability of landslides in the immediate site vicinity is low and there have been no landslides recorded in the vicinity of the Site (**Figure C-8**).

Based on this information, potential site impacts from severe weather have been assessed, and the performance of the remedy is not expected to be impacted due to the anticipated effects of weather-related events in the region and near the Site.

Figure C-1

Suffolk County, New York

Total Population
1,483,832

% Population with Income Below Poverty
7%

Building Codes Hazard Resistance
Resistant

% Population Disadvantaged
6.41%

National Risk Index Rating
Very Low
Source: FEMA National Risk Index

Billion-Dollar Weather and Climate Disasters

U.S. Climate Resilience Toolkit
Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD

Future Climate Indicators

Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Precipitation:							
Average annual total precipitation	**46"** 44 - 48	**48"** 45 - 55	**49"** 43 - 55	**48"** 44 - 53	**49"** 45 - 54	**50"** 45 - 56	**51"** 44 - 56
Days per year with precipitation (wet days)	**170 days** 166 - 174	**168 days** 160 - 177	**168 days** 156 - 180	**167 days** 156 - 179	**166 days** 153 - 183	**166 days** 153 - 178	**163 days** 141 - 184
Days per year with no precipitation (dry days)	**195 days** 191 - 199	**197 days** 188 - 205	**197 days** 186 - 209	**198 days** 187 - 209	**200 days** 182 - 212	**199 days** 187 - 212	**203 days** 181 - 225
Maximum number of consecutive dry days	**13 days** 11 - 14	**13 days** 11 - 15	**13 days** 12 - 15	**13** days 12 - 15	**13 days** 11 - 16	**13 days** 12 - 15	**14 days** 11 - 16
Temperature thresholds:							
Annual days with maximum temperature > 90 °F	**4 days** 4 - 7	**12 days** 7 - 21	**13 days** 7 - 19	**17 days** 8 - 29	**21 days** 10 - 37	**22 days** 11 - 39	**45 days** 16 - 75
Annual days with maximum temperature > 100 °F	**0 days** 0 - 0	**0 days** 0 - 1	**0 days** 0 - 1	**0 days** 0 - 1	**1 days** 0 - 2	**1 days** 0 - 1	**4 days** 0 - 13

N/A = Data Not Available for the selected area

Figure C-2

Suffolk County, New York

Total Population
1,483,832

% Population with Income Below Poverty
7%

Building Codes Hazard Resistance
Resistant

% Population Disadvantaged
6.41%

National Risk Index Rating
Relatively Low
Source: FEMA National Risk Index

Billion-Dollar Weather and Climate Disasters

U.S. Climate Resilience Toolkit
Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD

Future Climate Indicators

Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Precipitation:							
Days per year with no precipitation (dry days)	**195 days** 191 - 199	**197 days** 188 - 205	**197 days** 186 - 209	**198 days** 187 - 209	**200 days** 182 - 212	**199 days** 187 - 212	**203 days** 181 - 225
Maximum number of consecutive dry days	**13 days** 11 - 14	**13 days** 11 - 15	**13 days** 12 - 15	**13 days** 12 - 15	**13 days** 11 - 16	**13 days** 12 - 15	**14 days** 11 - 16
Days per year with precipitation (wet days)	**170 days** 166 - 174	**168 days** 160 - 177	**168 days** 156 - 180	**167 days** 156 - 179	**166 days** 153 - 183	**166 days** 153 - 178	**163 days** 141 - 184
Temperature thresholds:							
Annual days with maximum temperature > 90°F	**4 days** 4 - 7	**12 days** 7 - 21	**13 days** 7 - 19	**17 days** 8 - 29	**21 days** 10 - 37	**22 days** 11 - 39	**45 days** 16 - 75
Annual days with maximum temperature > 100°F	**0 days** 0 - 0	**0 days** 0 - 1	**0 days** 0 - 1	**0 days** 0 - 1	**1 days** 0 - 2	**1 days** 0 - 1	**4 days** 0 - 13

N/A = Data Not Available for the selected area

Figure C-3

36103
Suffolk County

Prepared by Esri

Suffolk County, New York

Total Population
1,483,832

% Population with Income Below Poverty
7%

Building Codes Hazard Resistance
Resistant

% Population Disadvantaged
6.41%

National Risk Index Rating
Relatively Moderate
Source: FEMA National Risk Index

Billion-Dollar Weather and Climate Disasters

U.S. Climate Resilience Toolkit
Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD

Future Climate Indicators

Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Temperature thresholds:							
Annual days with maximum temperature > 90°F	**4 days** 4 - 7	**12 days** 7 - 21	**13 days** 7 - 19	**17 days** 8 - 29	**21 days** 10 - 37	**22 days** 11 - 39	**45 days** 16 - 75
Annual days with maximum temperature > 95°F	**1 days** 0 - 1	**2 days** 1 - 5	**2 days** 1 - 4	**4 days** 1 - 7	**5 days** 2 - 12	**6 days** 2 - 13	**17 days** 3 - 36
Annual days with maximum temperature > 100°F	**0 days** 0 - 0	**0 days** 0 - 1	**0 days** 0 - 1	**0 days** 0 - 1	**1 days** 0 - 2	**1 days** 0 - 1	**4 days** 0 - 13
Annual days with maximum temperature > 105°F	**0 days** 0 - 0	**0 days** 0 - 0	**0 days** 0 - 0	**0 days** 0 - 0	**0 days** 0 - 0	**0 days** 0 - 0	**1 days** 0 - 2
Annual temperature:							
Annual single highest maximum temperature °F	**93 °F** 92 - 95	**96 °F** 94 - 98	**96 °F** 95 - 99	**97 °F** 95 - 100	**98 °F** 96 - 101	**99 °F** 96 - 102	**102 °F** 97 - 106
Annual highest maximum temperature averaged over a 5-day period °F	**88 °F** 88 - 89	**91 °F** 90 - 93	**91 °F** 90 - 92	**92 °F** 90 - 94	**93 °F** 91 - 95	**93 °F** 90 - 97	**97 °F** 92 - 101
Cooling degree days (CDD)	**785 degree-days** 727 - 847	**1,047 degree-days** 875 - 1,339	**1,070 degree-days** 879 - 1,264	**1,189 degree-days** 944 - 1,516	**1,306 degree-days** 997 - 1,659	**1,330 degree-days** 973 - 1,728	**1,843 degree-days** 1,243 - 2,379

N/A = Data Not Available for the selected area

December 2, 2024

Figure C-4

Suffolk County, New York

Total Population
1,483,832

% Population with Income Below Poverty
7%

Building Codes Hazard Resistance
Resistant

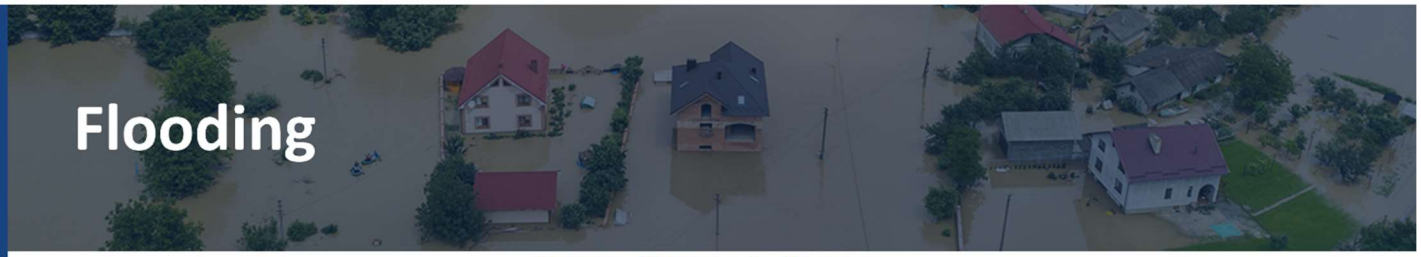
% Population Disadvantaged
6.41%

National Risk Index Rating
Relatively High
Source: FEMA National Risk Index

Billion-Dollar Weather and Climate Disasters

U.S. Climate Resilience Toolkit

Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD



Future Climate Indicators

Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Precipitation:							
Annual average total precipitation	**46"** 44 - 48	**48"** 45 - 55	**49"** 43 - 55	**48"** 44 - 53	**49"** 45 - 54	**50"** 45 - 56	**51"** 44 - 56
Days per year with precipitation (wet days)	**170 days** 166 - 174	**168 days** 160 - 177	**168 days** 156 - 180	**167 days** 156 - 179	**166 days** 153 - 183	**166 days** 153 - 178	**163 days** 141 - 184
Maximum period of consecutive wet days	**10 days** 8 - 12	**10 days** 8 - 11	**10 days** 8 - 12	**10 days** 8 - 11	**10 days** 8 - 12	**10 days** 9 - 11	**10 days** 8 - 13
Annual days with:							
Annual days with total precipitation > 1inch	**8 days** 7 - 9	**9 days** 8 - 11	**9 days** 8 - 11	**9 days** 8 - 11	**10 days** 8 - 12	**10 days** 8 - 12	**11 days** 8 - 13
Annual days with total precipitation > 2 inches	**1 days** 1 - 1	**1 days** 1 - 2	**1 days** 1 - 2	**1 days** 1 - 2	**2 days** 1 - 2	**2 days** 1 - 2	**2 days** 1 - 2
Annual days with total precipitation > 3 inches	**0 days** 0 - 0	**0 days** 0 - 1	**0 days** 0 - 0	**0 days** 0 - 1	**0 days** 0 - 1	**0 days** 0 - 1	**0 days** 0 - 1
Annual days that exceed 99th percentile precipitation	**7 days** 6 - 9	**8 days** 7 - 10	**8 days** 7 - 10	**9 days** 7 - 11	**9 days** 8 - 11	**9 days** 8 - 12	**11 days** 9 - 13
Days with maximum temperature below 32 °F	**15 days** 14 - 18	**10 days** 3 - 13	**9 days** 3 - 13	**8 days** 2 - 12	**6 days** 3 - 9	**6 days** 1 - 9	**2 days** 0 - 6

N/A = Data Not Available for the selected area

Figure C-5

36103
Suffolk County

Prepared by Esri

Suffolk County, New York

Total Population
1,483,832

% Population with Income Below Poverty
7%

Building Codes Hazard Resistance
Resistant

% Population Disadvantaged
6.41%

National Risk Index Rating
Relatively High
Source: FEMA National Risk Index

Billion-Dollar Weather and Climate Disasters

U.S. Climate Resilience Toolkit
Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD

Future Climate Indicators

Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Sea level rise:							
Percent of selected county impacted by global sea level rise	N/A	0%	0%	1%	1%	1%	2%

For more information on sea level changes, see the Interagency Sea Level Rise Scenario Tool

N/A = Data Not Available for the selected area

December 2, 2024

Figure C-6

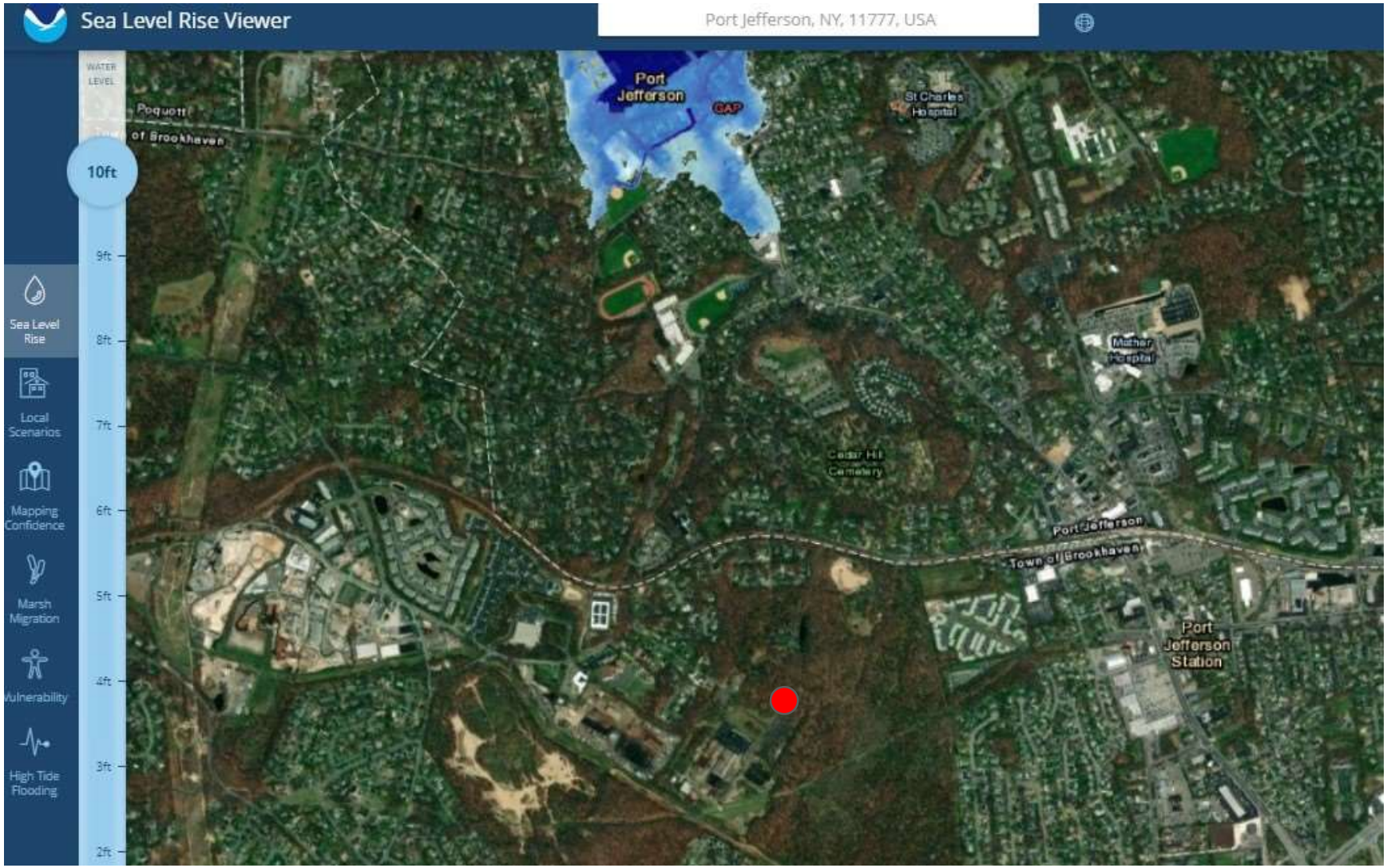

Sea Level Rise Viewer
Port Jefferson, NY, 11777, USA
WATER LEVEL
10ft
9ft
8ft
7ft
6ft
5ft
4ft
3ft
2ft
Sea Level Rise
Local Scenarios
Mapping Confidence
Marsh Migration
Vulnerability
High Tide Flooding
Port Jefferson
GAP
St Charles Hospital
Poquott
of Brookhaven
Mather Hospital
Cedar Hill Cemetery
Port Jefferson
Town of Brookhaven
Port Jefferson Station

Figure C-7

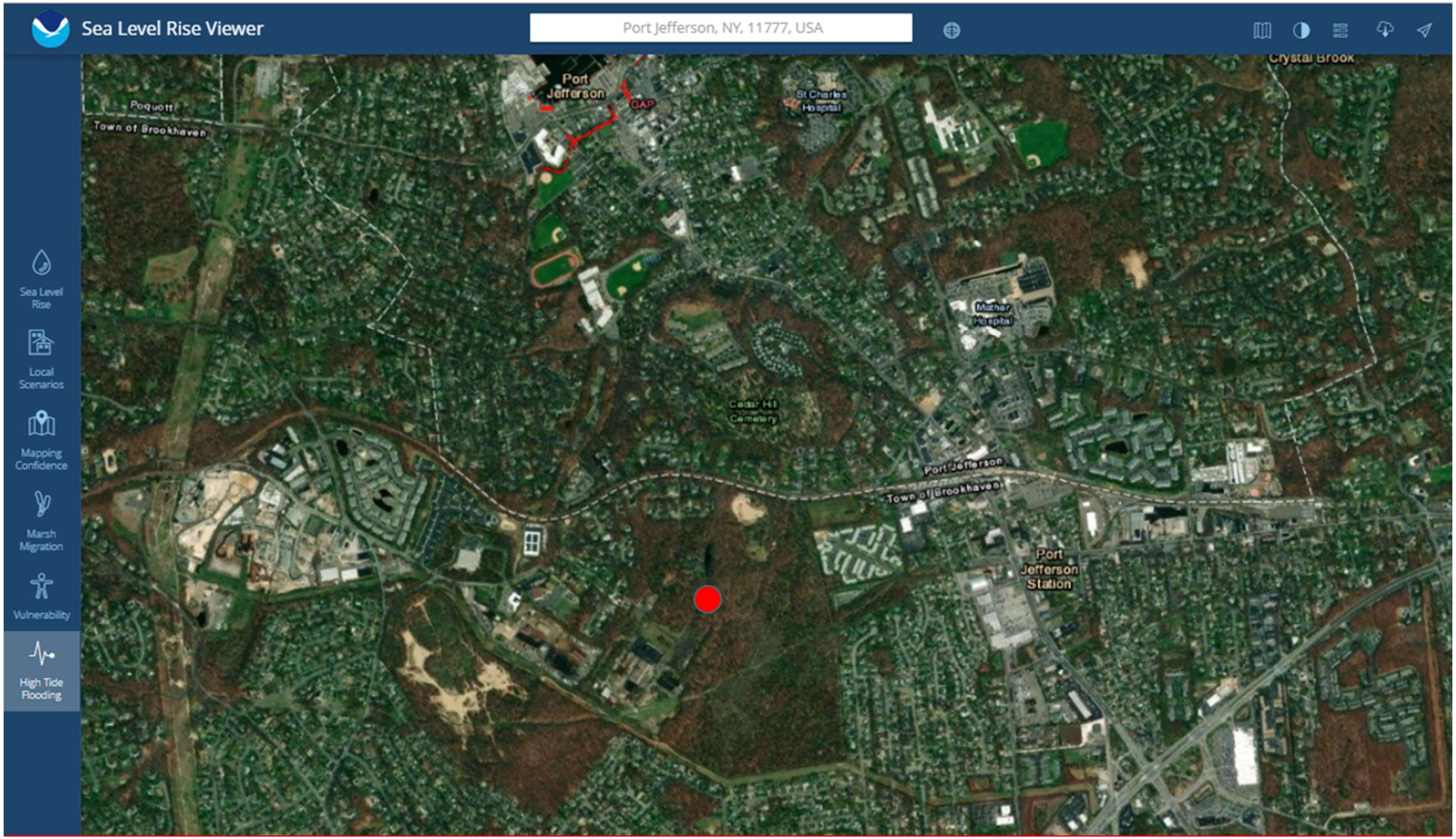
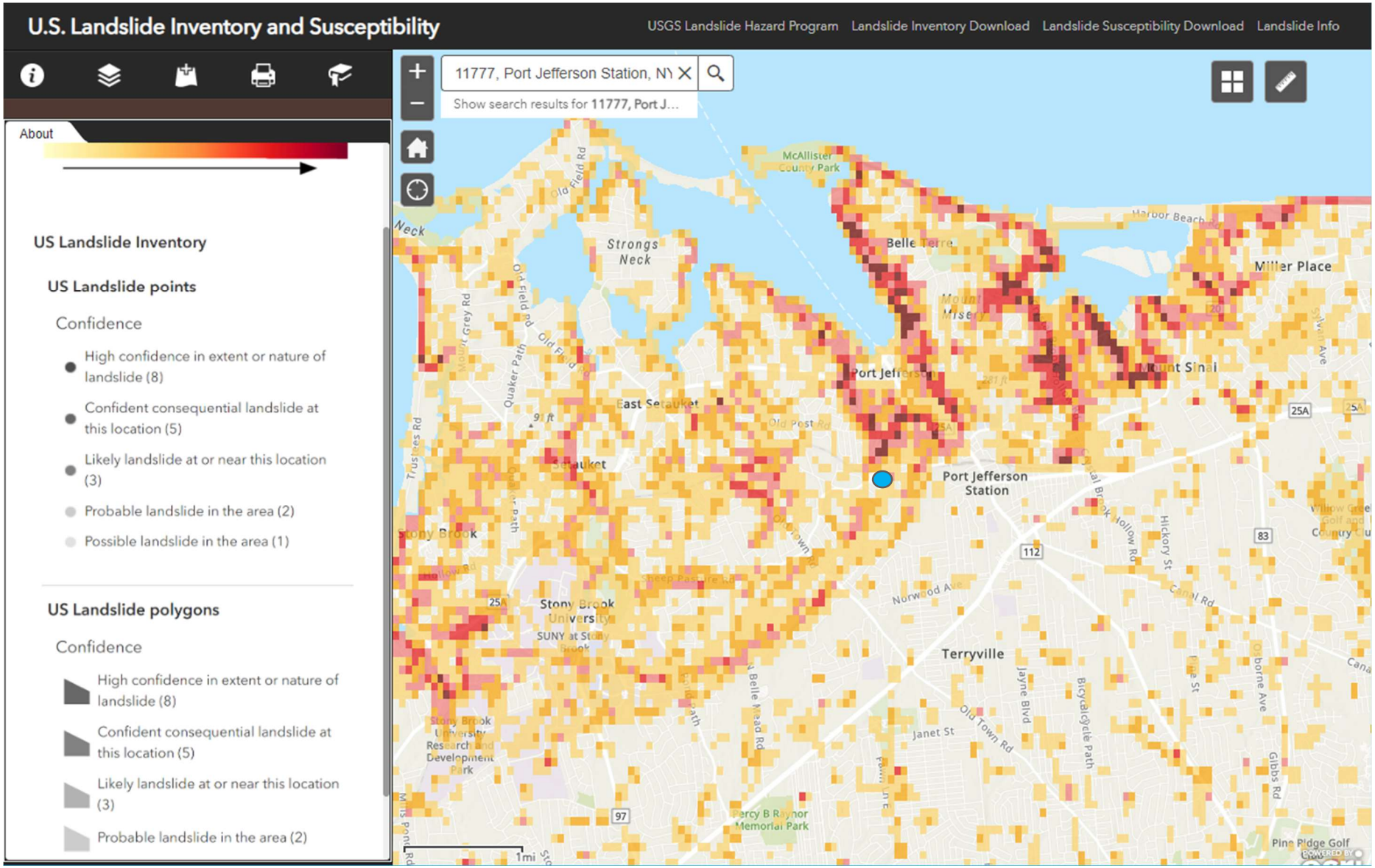

Sea Level Rise Viewer
Port Jefferson, NY, 11777, USA
Sea Level Rise
Local Scenarios
Mapping Confidence
Marsh Migration
Vulnerability
High Tide Flooding
Port Jefferson
GAP
St Charles Hospital
Poquott
Town of Brookhaven
Crystal Brook
Mather Hospital
Cedar Hill Cemetery
Port Jefferson
Town of Brookhaven
Port Jefferson Station

Figure C-8


U.S. Landslide Inventory and Susceptibility
USGS Landslide Hazard Program
Landslide Inventory Download
Landslide Susceptibility Download
Landslide Info
About
US Landslide Inventory
US Landslide points
Confidence
High confidence in extent or nature of landslide (8)
Confident consequential landslide at this location (5)
Likely landslide at or near this location (3)
Probable landslide in the area (2)
Possible landslide in the area (1)
US Landslide polygons
Confidence
High confidence in extent or nature of landslide (8)
Confident consequential landslide at this location (5)
Likely landslide at or near this location (3)
Probable landslide in the area (2)
11777, Port Jefferson Station, NY
Show search results for 11777, Port J...
Strongs Neck
Port Jefferson Station
Terryville
Stony Brook University
Miller Place
Mount Sinai
East Setauket
Setauket
Stony Brook
Percy B Raynor Memorial Park
1mi