3 Evaluation of the FCSs

Shortly after the public forums were held in September 2003, the facility siting team continued screening potential sites by initiating the evaluation of the seven FCSs (see Table 3-1).

Table 3-1 Final Candidate Sites

FCSs River Sections	Location (Town and County)	Approximate River Mile
River Section 1		
Energy Park/Longe/NYSCC	Fort Edward, Washington County	195.1
Old Moreau Dredge Spoils Area/NYSCC	Moreau, Saratoga County	193.8
River Section 2		
Georgia Pacific/NYSCC	Greenwich, Washington County	183.2
River Section 3		
Bruno/Brickyard Associates/Alonzo	Schaghticoke, Rensselaer County	166.5
NYSCC/Allco/Leyerle	Halfmoon, Saratoga County	162.4
Below River Section 3		
State of New York/First Rensselaer/Marine Management	Rensselaer, Rensselaer County	146.7
OG Real Estate	Bethlehem, Albany County	142.8

Screening and evaluating the sites defined in more detail the existing resources, features, and conditions within (and in the near vicinity of) each of the FCSs. The objective of this phase was to determine which sites were suitable for the construction and operation of a sediment processing/transfer facility. Sites considered suitable have been identified as the Suitable Sites (see Figures 3-1 and 3-2).

During preliminary design, the RD Team provided further information on FCS conditions and/or locations that imposed potential limitations on the design of river access/barge transportation and offloading and rail access. Continued coordination with the RD Team and their study of transportation logistics also led to an understanding that suitable sites could be established that functioned as both a

processing and rail transfer facility or as a processing facility where dredged material could be transported to the site (via barge or pipeline) and the processed material could then be transported to a remote rail transfer facility or shipped to approved disposal locations.

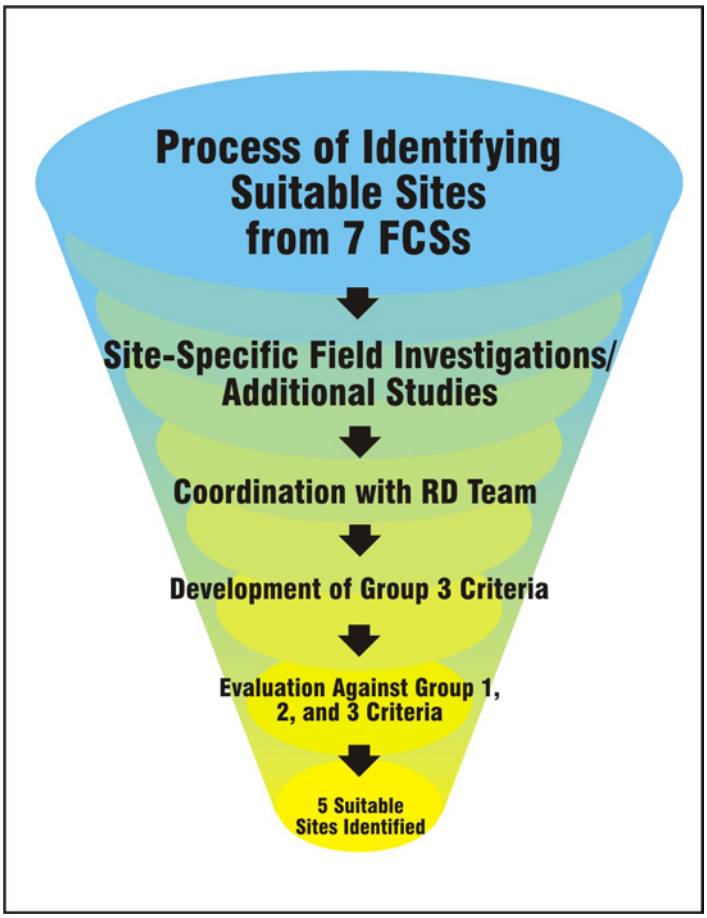
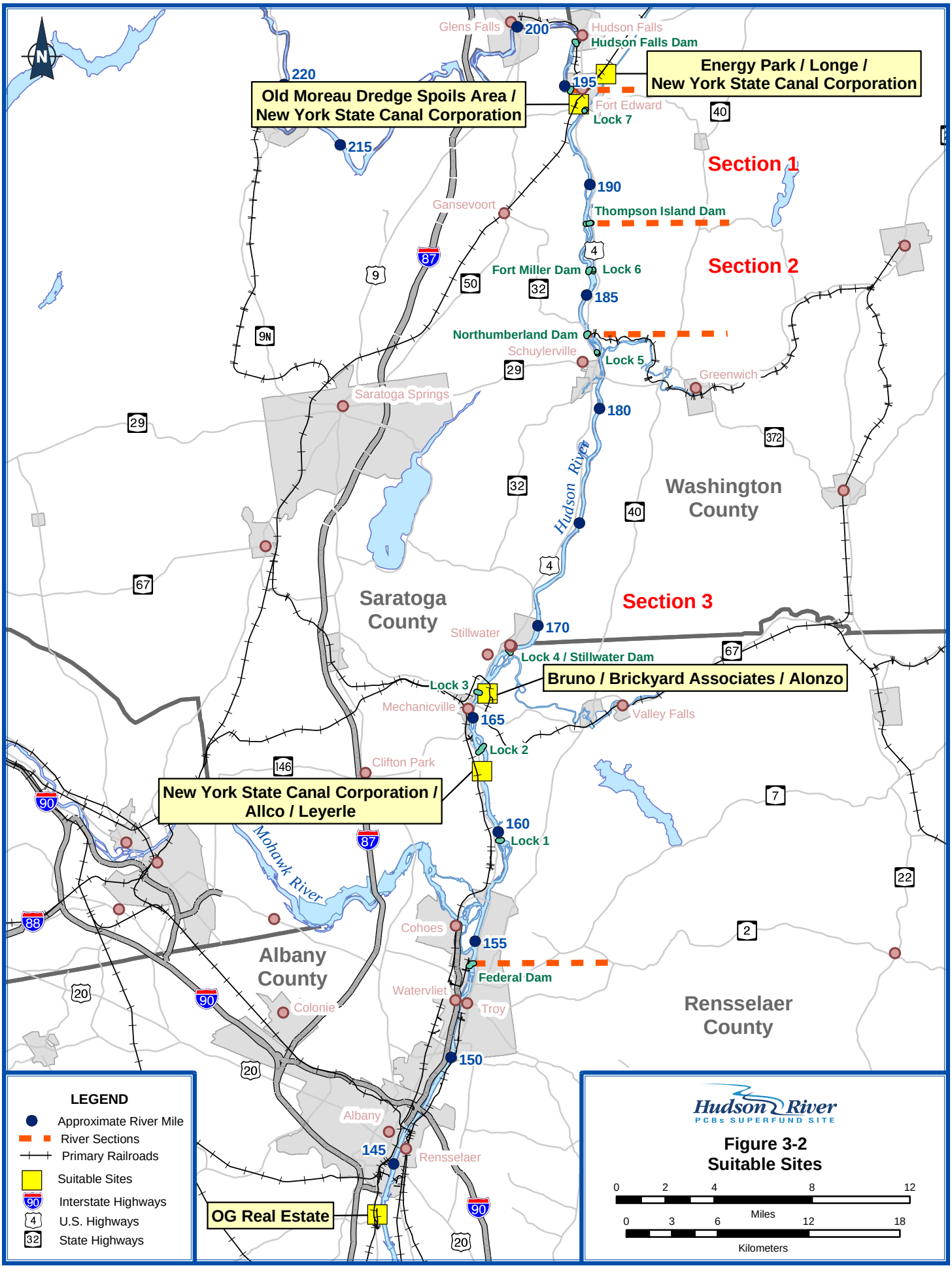


Figure 3-1 Process of Identifying Suitable Sites from 7 FCSs

The evaluation of the FCSs involved examining each of the sites and incorporating information provided by the RD Team. Discussions with the RD Team were held at various points in the FCS evaluation process to incorporate preliminary design information. The following evaluations and variables were examined to facilitate the FCS evaluation process:

- Results of the site-specific field investigations were evaluated.
- Group 3 criteria were developed using the information gained during the field investigations and the information provided by the RD Team.


Glens Falls
200
Hudson Falls
Hudson Falls Dam
Energy Park / Longe /
New York State Canal Corporation
220
Old Moreau Dredge Spoils Area /
New York State Canal Corporation
195
Fort Edward
Lock 7
40
215
Section 1
190
Gansevoort
Thompson Island Dam
4
87
9
50
Fort Miller Dam
Lock 6
Section 2
32
185
9N
Northumberland Dam
Schuylerville
Lock 5
29
Greenwich
Saratoga Springs
180
29
372
Hudson River
32
Washington
County
40
4
67
Saratoga
County
Section 3
Stillwater
170
67
Lock 4 / Stillwater Dam
Bruno / Brickyard Associates / Alonzo
Lock 3
Mechanicville
Valley Falls
165
Lock 2
146
Clifton Park
New York State Canal Corporation /
Allco / Leyerle
7
90
160
Lock 1
87
Mohawk River
22
88
Cohoes
155
2
Albany
County
Federal Dam
20
Watervliet
Troy
Colonie
Rensselaer
County
90
150
20
Albany
145
Rensselaer
OG Real Estate
90
20
LEGEND
Approximate River Mile
River Sections
Primary Railroads
Suitable Sites
Interstate Highways
U.S. Highways
State Highways
Hudson River
PCBs SUPERFUND SITE
Figure 3-2
Suitable Sites
0 2 4 8 12
Miles
0 3 6 12 18
Kilometers

- The FCSs were characterized with respect to Group 1, Group 2, and Group 3 criteria to identify which FCSs were suitable for the operation of a sediment processing/transfer facility.

- Additional studies, including an environmental justice evaluation and review of available traffic information, were conducted.

3.1 Site-Specific Field Investigations of the FCSs

All field investigations were performed in accordance with the *Hudson River PCBs Superfund Site Facility Siting Work Plans* (E & E August 2003) and the September 2003 *Site-specific Field Investigations Addenda* to that plan. Phase I Environmental Site Assessments (ESAs) were performed in June, July, and August 2003, and Phase II ESAs were performed in September and October 2003. A complete summary of investigation activities is provided in the April 2004 *Facility Siting Data Summary Report* (USEPA April 2004a).

Site-specific field investigations were conducted within the property boundaries of each FCS in order to gather information about various environmental and physical features of each of the FCSs. The field studies involved a series of intrusive and non-intrusive sampling efforts that included soil sampling, surface water sampling, groundwater sampling, Phase IA and Phase IB cultural resource investigations, determination and delineation of wetlands, and other investigations.

Site-specific FCS field investigations were carried out to:

- Further characterize the environmental and physical conditions and identify and characterize environmental conditions;

- Provide additional information for the identification and development of the Group 3 siting criteria; and

- Assist in the evaluation and screening of the FCSs to facilitate selection of the Suitable Sites.

Because access was not approved by the property owners, intrusive field studies were not completed on the Bruno property (two parcels) and the State of New York property (three parcels). Upon learning that access for intrusive studies would not be forthcoming within the time frame of the field investigations, sample locations on the Brickyard Associates, Alonzo, First Rensselaer, and Marine Management properties were adjusted to obtain sample results close to the Bruno and State of New York properties. The following investigations were carried out within the boundaries of each of the FCSs (except as noted).

3.1.1 Phase I ESAs

ESAs were performed to identify known current and historic environmental conditions at the sites. These investigations included record searches, site reconnaissance visits, and interviews with those knowledgeable about the properties. The information obtained was used to develop a description of each FCS relative to historic and current land uses; to identify existing structures and any potential areas of environmental concern; to provide a general geological description and observations regarding site topography and surface features; and to identify known or potential environmental concerns. The information obtained from each FCS was the basis for the Phase II ESA work scopes.

3.1.2 Phase II ESAs

The Phase II ESAs and baseline sampling were designed to locate, identify, and quantify specific on-site environmental conditions within selected locations that could be present as a result of historic and/or current land uses. Based upon the environmental conditions identified during the Phase I ESAs, intrusive site assessments included multimedia sampling (e.g., surface and subsurface soil sampling, groundwater sampling, and surface water sampling). In general, surface and subsurface soil samples were collected in areas of fill/surficial dumping, adjacent to rail lines and spurs, and in other general areas of the sites where construction operations are expected. Surface water and sediment samples were collected along flow pathways such as creeks and streams or drainage ditches. Upgradient and downgradient groundwater samples were collected to provide an indication of overall groundwater quality and the direction of groundwater flow.

State and federal standards, criteria, and guidances were used for preliminary screening during review of the analytical sample results for surface soil, subsurface soil, surface water, sediment, and groundwater. These criteria were used only for comparison.

Metal concentrations cannot be directly compared to the criteria without additional evaluation (including evaluation of background levels) because metals occur naturally in the environment. Additionally, turbidity in surface water and groundwater samples can cause interference with metals analysis. These factors were considered in the evaluation of the detected compounds.

3.1.3 Geotechnical Assessments

Geotechnical assessments were performed to identify subsurface conditions that could potentially limit development of the FCSs. Geotechnical sampling was not performed at the Old Moreau/NYSCC and OG Real Estate sites because previous site studies provided sufficient information. The assessments involved recording observations of site soils, depth to bedrock, depth to groundwater, subsurface topography, etc. Field activities included taking soil borings to determine subsurface conditions at the site and laboratory geotechnical testing (e.g., moisture content, grain size analysis). This information was used to develop geotechnical Group 3 evaluation criteria (i.e., suitability of soils) for the FCSs, which were in

turn used to determine whether the geology of the site is suitable for construction of a sediment processing/transfer facility.

3.1.4 Utilities Assessments

Preliminary utility assessments were performed to identify utilities at each FCS. The assessments included making observations of site surface utilities such as overhead power or telephone lines, electrical transformers, manholes, sewer outfalls, and water hydrants; contacting Dig Safely New York (Dig Safe) for clearances before subsurface/intrusive work activities, including direct communication with various utility operators, as needed; and reviewing available maps from owners and other sources. Field observations also involved looking for on-site and nearby off-site utilities.

It is anticipated that further utility assessments will be needed for those sites identified as Recommended Sites (see Section 5) during the intermediate design and may include contacting local municipal offices for information and opening manholes to determine flow paths and dye testing.

3.1.5 Survey of Terrestrial Archaeological and Architectural Resources

Legislative Requirements

The 1966 National Historic Preservation Act (Public Law 89-665, as amended by Public Law 96-515; 16 USC 470 et seq.) provides for the establishment of the National Register of Historic Places (NRHP) to include historic properties such as districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, and culture. Section 106 of the Act requires that federal agencies with jurisdiction over a proposed federal project take into account the effect of the undertaking on cultural resources that are listed or that are eligible for listing on the NRHP and afford the State Historic Preservation Offices and the Advisory Council on Historic Preservation (ACHP) an opportunity to comment with regard to the undertaking. The NRHP eligibility criteria have been defined by the Secretary of the Interior's Standards for Evaluation (36 CFR 60).

The guidelines governing the conduct of cultural resource investigations in New York State are contained in the *Standards for Cultural Resources Investigations and the Curation of the Archaeological Collections in New York State* (1994) formulated by the New York Archaeological Council and approved by the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP). These guidelines provide the appropriate sequence of cultural resource management procedures for identification and evaluation of historic properties; mitigation of adverse effects on these properties; resource documentation; and curation of archaeological collections. These guidelines also specify the appropriate content of archaeological reports. Because the Hudson River PCBs Superfund Site is a federally mandated project, the historic properties within the area of potential ef-

fect (APE) are the subject of these statutes, and any potential effects on them require state and federal review process.

The Survey of Terrestrial Archaeological and Architectural Resources (STAAR) Work Plan was developed specifically to support the facility siting process. The purpose of the work plan is to integrate cultural resources as a relevant consideration in the facility siting selection process and to establish compliance with existing federal and state laws and regulations that affect management and protection of archaeological and historical properties.

The work plan was designed to carry out a phased process of screening and evaluating candidate sites on the basis of currently available information and additional data collection, in accordance with the OPRHP guidelines and consistent with the requirements of Section 106 of the NHPA.

Phase IA Study

In 2001 the EPA, in consultation with the OPRHP, established the preliminary APE for the Hudson River PCBs Superfund Site remediation. This area included the 50-mile-long stretch of the upper Hudson River valley traversing the riverfront portions of Washington, Saratoga, and Rensselaer Counties and extending from the south edge of the city of Glens Falls to the southern edge of the Port of Albany in the city of Albany. The APE includes a 2,000-foot-wide strip of land along both shores of the Hudson River.

On behalf of the EPA, TAMS Consultants, Inc. conducted a preliminary Stage IA cultural resources investigation of the APE. This investigation did not focus on specific potential locations for siting a sediment processing/transfer facility. Rather, it consisted of near-river, region-specific documentary archival research to establish an overall historic and prehistoric context for the upper Hudson River valley and a cultural resource site file search at OPRHP. This Stage IA research is documented in the *Responsiveness Summary: Hudson River PCBs Site Record of Decision*, Book 3 of 3, Appendix C (USEPA 2002). The geographic area involved in this previous effort included locations that eventually were selected as FCSs: Old Moreau Dredge Spoils Area/NYS Canal Corporation; Georgia Pacific/NYS Canal Corporation; Bruno/Brickyard Associates/Alonzo; NYS Canal Corporation/Allco/Leyerle; and State of New York/First Rensselaer/Marine Management.

Additional site visits in summer and fall of 2003 at the OPRHP determined the presence or absence of recorded cultural properties on the other two FCSs (Energy Park/Longe/NYS Canal Corporation and OG Real Estate).

Site-specific Phase IA documentary background research and sensitivity assessments were accomplished for each of the FCSs. The purpose of the Phase IA site-specific research was to develop awareness of cultural resource considerations in

the process of evaluating the FCSs and to develop methodologies for field investigation (Phase IB survey).

The Phase IA investigation included a literature review, focusing on geology, soils, and drainage; paleo-environmental reconstructions; cultural history; prehistoric, historic, and modern land uses; ground disturbances; and other relevant issues. A special emphasis was placed on examination of historical maps. Modern maps, soil surveys, and aerial photographs were also used.

Data was gathered from standard reference sources as well as information collected at local data repositories such as historical societies, historical associations, libraries, and archives. Interviews were conducted with town and county historians, archaeologists, and other knowledgeable individuals.

Lastly, all FCSs were subjected to an archaeological site reconnaissance and a preliminary architectural survey. Information obtained during the Phase IA study was used to develop site-specific methodologies for the Phase IB Survey.

Phase IB Survey

Consistent with OPRHP guidelines, Phase IB consisted of surface inspection, subsurface shovel testing in all sensitive areas of the FCSs, backhoe testing, and photographic documentation of cultural remains and surface conditions. Shovel testing was conducted at 15-meter intervals, as specified by the OPRHP guidelines. Judgmental shovel testing, soil probing, and photo-documentation were conducted in areas of ground disturbance. These areas were identified on maps and excluded from systematic testing. Excavated soils were screened through 0.25-inch hardware mesh and replaced to natural contour after screening and recording.

Locations of archaeological sites, features within sites, and archaeological structures (e.g., building foundations) were mapped using a global positioning system (GPS) unit. The archaeological reconnaissance indicated that the FCSs potentially contained locations with alluvial soils and deeply buried prehistoric sites that could not be investigated by means of shovel tests. Geomorphology was assessed by observing soil conditions in deep trenches. These trenches were excavated using a backhoe. Trench walls also were examined for signs of geomorphological features and archaeological remains.

Archaeological resources discovered during the Phase IB survey have been evaluated for significance. Archaeological sites with demonstrably low integrity and small artifact content have been determined to be ineligible for NRHP listing and, pending concurrence from OPRHP, will not require additional investigations. FCSs at which potentially significant archaeological resources were discovered during the Phase IB survey will warrant additional investigations.

3.1.6 Wetland Assessments

Wetland assessments were performed to document the existing characteristics of the "waters of the United States" (referred to in this document as wetlands) within the property boundaries of the FCSs. Wetlands are defined in the federal regulations (33 CFR 328.3(b)) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." The assessments included data-gathering, base map preparation, field delineations, and site documentation. These investigations were completed to maintain procedural compliance with Sections 404/401 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, Executive Order 11990 Protection of Wetlands, and the Policy on Floodplains and Wetlands Assessments for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Actions.

Wetland determinations and delineations followed the routine approach noted in the U.S. Army Corps of Engineers (USACE) 1987 *Wetland Delineation Manual* (Environmental Laboratory 1987). In addition to field determinations, data and mapping reviewed included NWI maps; NYSDEC state wetlands maps; United States Geological Service (USGS) 7.5-minute series topographic quadrangle maps; National Resource Conservation Service (NRCS) county hydric soils lists, county soil surveys, certified wetland determinations; FEMA floodplain mapping; USACE and/or USGS river stage and gauge data; and ortho-corrected aerial photography of the Upper Hudson River. Determination and delineation activities did not include determining boundaries or configurations of wetlands occurring within the river channel (below the ordinary high mark along the shoreline).

3.1.7 Floodplain Assessment

The purpose of the floodplain assessments was to determine the presence, extent, and locations of floodplains at each of the FCSs, based upon existing information. Floodplains are areas next to water bodies that become inundated during flood flows. Floodplains typically occur in lowland and relatively flat areas adjoining inland and coastal waters or other flood-prone areas such as offshore islands. Floodplains include, at a minimum, areas subject to a 1% or greater chance of flooding in any given year, the 100-year floodplain. The critical action floodplain is defined as the 500-year floodplain (i.e., areas with a 0.2% chance of experiencing flooding) (USEPA 1985). The floodplain assessment examined the FEMA-mapped 100-year and 500-year floodplains within the boundaries of each FCS. Investigations were completed to maintain compliance with Executive Order 11988, Floodplains Management, and the Policy on Floodplains and Wetlands Assessments for CERCLA Actions. Once the sites are selected for Phase 1 and Phase 2 dredging, EPA will perform the final floodplain assessment using the 500-year floodplain, which is considered the critical action floodplain and is used per CERCLA actions (USEPA 1985).

The floodplain assessment for the FCSs used ortho-corrected data. For some sites (e.g., OG Real Estate), site boundaries were corrected based on existing site survey information. In addition, FEMA data was rectified to the corrected shorelines for all of the sites. Thus, there may be minor discrepancies between PCS and FCS site area calculations.

3.1.8 Initial Coastal Management Area Assessment

Coastal management areas (CMAs) are statutory boundaries defined by New York State in which the federal Coastal Zone Management Act (CZMA) applies. In general, the Great Lakes and areas that are influenced by tidal waters are included in the state Coastal Management Zone (CMZ), including the Hudson River. The Hudson River below Federal Dam is included in the state CMA.

According to the ROD, "If a sediment processing/transfer facility for the selected remedy is to be located south of the Federal Dam, coastal zone consistency will need to be evaluated for that facility" (USEPA 2002). A coastal zone consistency review is needed for any federal project within the state-defined CMA. The New York State Division of Coastal Resources reviews projects and activities of federal agencies for consistency with the policies of the New York State Coastal Management Program (CMP) and approved Local Waterfront Revitalization Programs (LWRPs).

The consistency provisions of the federal CZMA of 1972 require federal agency activities to be consistent with the state's federally approved Coastal Management Program and approved LWRP. This requirement applies to all federal activities and federally authorized activities within and outside the state's coastal area that affect the zone.

The initial CZMA assessments were performed to maintain procedural compliance with the Coastal Management Program Policies of New York State. These assessments involved a review of the New York State CMA boundaries relative to the boundaries of the FCSs. EPA will prepare an additional phase of its coastal zone consistency determination, covering potential indirect and accumulative impacts from the operation of sediment processing/transfer facilities, once the Phase 1 and Phase 2 dredging facility locations are selected.

3.1.9 Baseline Habitat and Threatened and Endangered Species Assessments

The Hudson River provides diverse habitats for many species, including species listed as threatened, endangered, rare, or of special concern. Given the awareness of regional habitat availability and the occurrence and distribution of aquatic and terrestrial species, baseline habitat assessments were conducted on each of the FCSs to characterize each FCS relative to habitat availability; to provide baseline descriptions of habitat structure, diversity, and condition; to develop an understanding of potential wildlife use and values within each of the FCSs; to identify habitats that could potentially support use by listed species; and to determine any

potential limitations on site development and/or appropriate concepts for site development based upon avoiding/minimizing impacts to sensitive habitats.

The habitat assessment process was initiated by reviewing available databases, maps, and reports to determine the distribution of fish and wildlife habitats within the FCSs. Aerial photography was used to determine cover types and probable types of habitat. Maps and information sources reviewed included NWI mapping; NYSDEC State Wetlands mapping; USGS 7.5-minute series topographic quadrangle maps; NRCS county hydric soils lists and county soil surveys; FEMA floodplain mapping; USACE and/or USGS river stage and gauge data and flood duration information; New York State spring 2002 ortho-corrected aerial photography of the Upper Hudson River (BBL 2002); and *Ecological Communities of New York State* (Edinger et al. 2002), which was used in defining the habitat community types within the FCSs.

Under the Endangered Species Act, the initial step in determining whether endangered or threatened species are present involved communicating with the appropriate agencies about the known presence of the species of concern in the project area. The USFWS regulates federally listed species that inhabit freshwater or terrestrial environments (e.g., the bald eagle). The National Oceanic and Atmospheric Administration (NOAA) Fisheries regulates federally listed species that inhabit marine environments (e.g., shortnose sturgeon). The New York State Natural Heritage Program (NHP) was also contacted to determine the documented occurrence of state-listed threatened or endangered species at the site.

The study and evaluation of each of the FCSs included determining the availability of suitable habitats and the potential use of such habitats by protected species. These assessments were performed to maintain procedural compliance with the Endangered Species Act of 1972.

The baseline habitat assessment involved review of existing information and field surveys of existing habitats on each FCS. This data was then combined with the known distribution of the state and federally threatened and endangered species to determine if suitable habitat was present at individual FCS locations.

3.2 Findings of the Site-Specific Field Investigations

The sections below summarize the results of the site-specific field investigations by FCS. A complete summary of investigation activities is provided in the April 2004 *Facility Siting Data Summary Report*.

3.2.1 Energy Park/Longe/NYSCC

3.2.1.1 Phase I ESA

The Energy Park parcel has been used as a topsoil mine and for stockpiling bulk material (gravel and wood chips). The pits resulting from the mining activities have been filled with thermally treated non-hazardous soil from the ESMI facility,

which is adjacent to the sites. The Washington County soil survey does indicate that the site soil types are dredge material. However, NYSCC provided historic subsurface data that may be useful to the RD Team with further clarification from NYSCC regarding locations. Key site features are presented on Figure 3.2.1-1.

Land use within a 1-mile radius of the site includes light industrial, residential, farmland, and the Champlain Canal.

The Energy Park property is classified as vacant industrial and is temporarily leased to a farmer that uses the land as a cornfield for livestock feed. The former topsoil mine areas are being reclaimed by filling in low areas and creating an organic soil zone by applying manure. The plan for the Longe and Energy Park properties is to develop a commercial/light industry park in coordination with the Town of Fort Edward's Master Plan (per communication with landowner).

The topography across the property and surrounding area is relatively flat. The eastern edge of the property is wooded (approximately 225 to 375 feet wide) and abuts the NYSCC parcel. An active Canadian Pacific Railway rail line/rail yard is adjacent to the west side of the property. The Champlain Canal (which is approximately 100 to 150 feet wide) is located approximately 225 to 450 feet southeast of the Energy Park property and is separated from the property by NYSCC property.

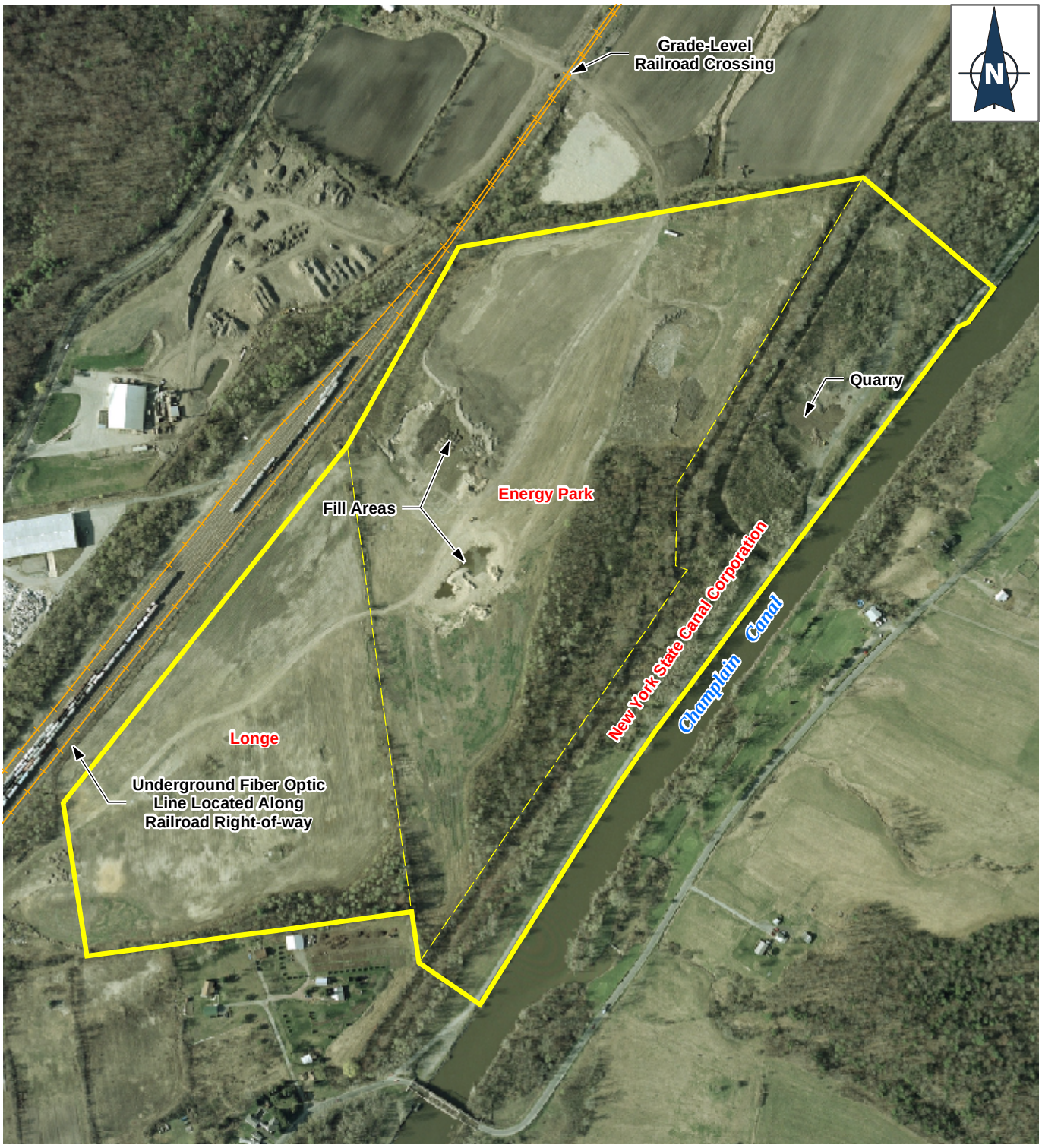
The Longe property borders the west side of Energy Park and is classified as vacant industrial. It is the location of a former topsoil mining operation. The property is currently privately owned and leased to a farmer that uses part of the land for growing corn for livestock feed. Topography is relatively flat. The eastern edge of the property is wooded (approximately 30 to 150 feet wide). An active rail line/rail yard is adjacent to the west side of the property. The Champlain Canal is located approximately 350 feet east of the site.

The NYSCC property is paralleled by the Champlain Canal to the east. The property contains two creeks (approximately 25 to 40 feet wide) that run north-south, parallel to one another, and flow to the Champlain Canal. One of the creeks drains the old Champlain Canal, which is located about 1,000 feet northeast of the parcel. The easternmost creek is an overflow from Lock 8; it turns southeast and empties into the canal. This parcel is predominantly forested, with maintained grassed areas. Examination of aerial photographs indicated a borrow pit in the northern portion of the property.

3.2.1.2 Phase II ESA

The environmental investigations at this site included collecting nine surface soil samples, three surface water/sediment samples, seven subsurface soil samples, and five groundwater samples from newly installed temporary monitoring wells; geotechnical soil testing at five locations; and the installation of one stream gauge for hydrologic monitoring purposes (see Figure 3.2.1-2).

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Approximate Site Boundary
- Tax Parcel Boundary
- Active Railroad

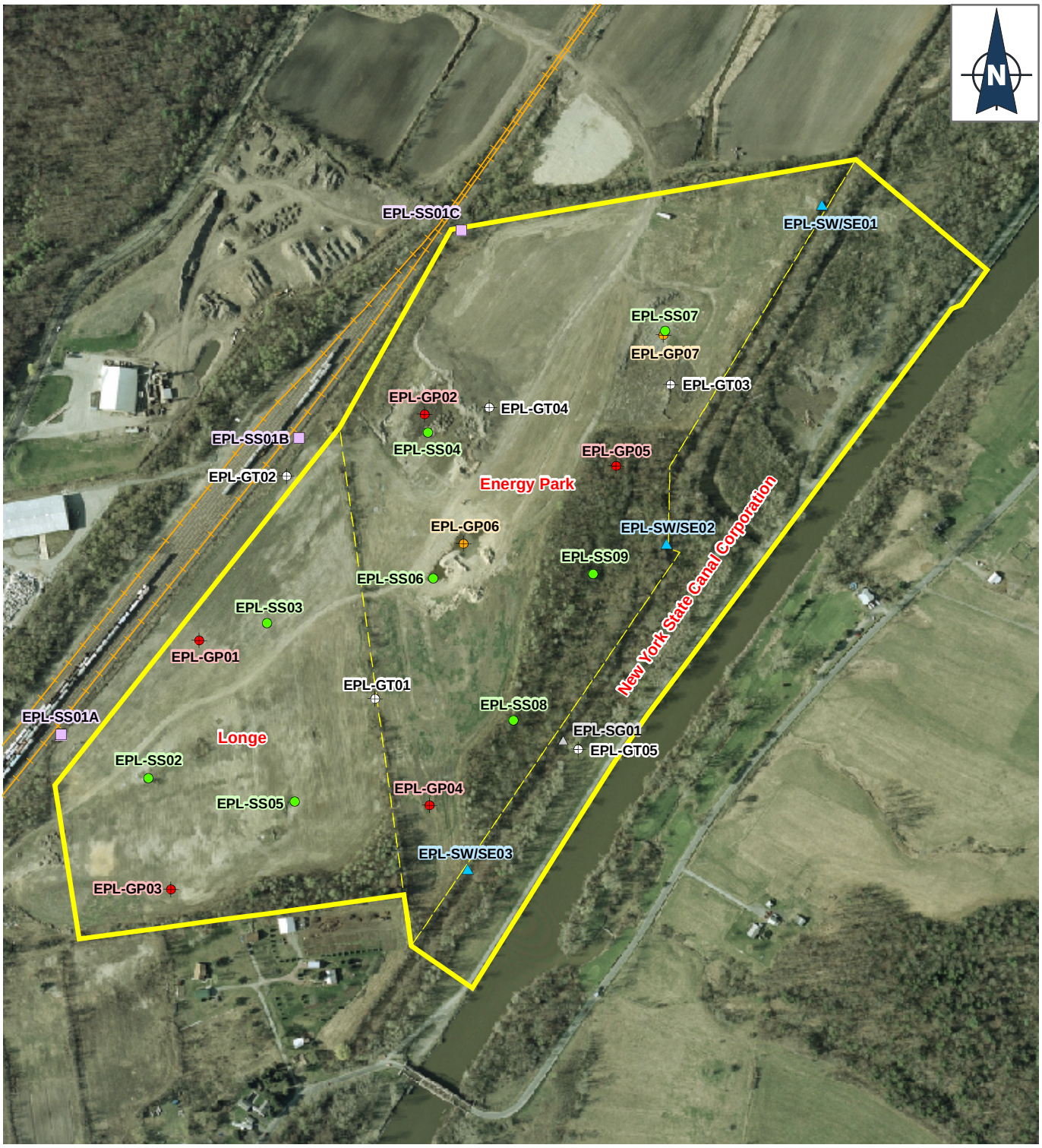
Hudson River
PCBs SUPERFUND SITE

Figure 3.2.1-1
Key Site Features
Energy Park / Longe / New York State Canal Corporation

500 250 0 500 1,000
Feet

02:001515.HR03.08:04 - 12/17/03
L:\Buffalo\Hudson_River\Maps\Mxd\FCS_Factsheets\Key_Site_Features\EPL_Key_Features.mxd - GIS

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Geoprobe Soil Boring
- Geoprobe Soil Boring & Temporary Well
- Geoprobe & Geotechnical Boring
- Geotechnical Boring
- Surface Soil
- Soil Sample Adjacent to Railroad
- Surface Water / Sediment
- Stream Gauge
- Railroad
- Potential Site Boundary

Hudson River
PCBs SUPERFUND SITE

Figure 3.2.1-2
Sample Locations
Energy Park / Longe / New York State Canal Corporation

500 250 0 500 1,000
Feet

02.001515.HR03.08.04 - 12/16/03
L:\Buffalo\Hudson_River\Maps\Mxd\FinalCandidateSites\Samples\Energypark_Longe_Samples.MXD - GIS

Parameters that exceeded screening criteria were one polycyclic aromatic hydrocarbon (PAH) — (benzo(a)pyrene) in surface soil EPL-SS01 (composite surface soil collected adjacent to the rail line) and various metals in several sample media. PAHs are typically associated with incomplete combustion of hydrocarbons and are common in urban and industrial areas. Based on site observations, the most probable source of hydrocarbon combustion occurring along the rail corridor is railroad engine diesel fuel emissions. Thus, the presence of this class of compound may not be attributable to disposal activities. The presence of metals above screening levels is discussed below. Phase II ESA sample locations are presented on Figure 3.2.1-2.

Most metals are naturally occurring in soil/sediment and surface water/ groundwater. Therefore, many of the exceedances may not be of concern. The metals that exceeded the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) guidance values in surface soil samples were mostly below eastern U.S. background levels. Of the metals that exceeded eastern U.S. background levels, only vanadium was noticeably higher (i.e., twice the eastern U.S. background level in one sample). The sample with elevated vanadium is from the wooded area of the site. Since most of the site contains thermally treated soils as fill material, the wooded area likely is more representative of site background conditions. Therefore, it appears that the vanadium level is more representative of local background conditions than of site contamination, and metals in the surface soils collected from the site are not expected to be of concern. The same general occurrence of contaminants holds true for the subsurface soils. The metals exceeding criteria in surface water, sediment, and groundwater (iron, manganese, and sodium) are naturally occurring metals often detected above criteria and are therefore not expected to be of concern.

In conclusion, the environmental conditions detected at this site are indicative of typical industrial sites and do not appear to represent significant environmental conditions that would greatly affect the use of the site as a sediment processing/transfer facility. However, additional characterization may be warranted due to the nature of the fill materials at the site.

3.2.1.3 Geotechnical Assessment

The subsurface data collected during the Phase II ESA indicates that site soils generally consist of silty sands underlain by sand with trace amounts of gravel starting at a depth of 10 feet below ground surface (BGS). Silt content decreased with depth starting at approximately 12 feet BGS, while the coarser fraction of unstratified sands correspondingly increases with depth. Site standard penetration test (SPT) n-values (the sum of the blows recorded over the second and third 6-inch SPT intervals) generally ranged from 4 to 11 in granular soils, indicating a soil density of loose to moderately dense. One exception is the 8.5- to 9.5-foot interval in the northwest area, where moderately dense sands yielded an n-value of 24. Clay was encountered along the west-central portion of the site at depths of

approximately 18 and 21 feet BGS. Recorded SPT n-values indicate its consistency was very soft.

Auger refusal and/or weathered shale in the split spoon sampler (possible bedrock) were encountered at depths of approximately 23 to 25 feet BGS in the central and southwestern portions of the site. Adjacent to the west bank of the Champlain Canal, a thin (less than 1-foot thick) peat layer located at a depth of approximately 14 feet BGS overlies a clay layer that extends to a depth greater than 26 feet BGS.

Farming of treated soils on much of this site has resulted in minimally consolidated soils containing mixtures of organic matter, silt, and very fine-grained sand. In the northern and eastern parts of the site, SPT n-values of 2 were recorded in at least one interval in the uppermost 10 feet of each geotechnical boring location. Based on these SPT n-values, the density of these granular soils is classified as very loose.

Malcolm Pirnie (1985) reports site soil borings installed by NYSDEC indicate that bedrock lies between 59 and 82 feet below grade in the central part of the site. A wet layer of peat was encountered from 6 to 9 feet BGS and is underlain by a wet clay that extends to the top of bedrock. Borings installed along the western side of the site indicated that an approximately 4-foot thick layer of fine silt and sand lies at the surface. Coarse sandy gravel underlies this medium sand down to a depth of 21 feet BGS, where clay is present. Clay was also found at the site's north end; it reportedly extends from 17 BGS feet down to 40 feet BGS.

The geotechnical conditions detected at this site do not appear to represent significant geotechnical limitations that would affect the construction and operation of a sediment processing/transfer facility. It is expected that subsurface conditions in areas where fill is present could be addressed during design.

3.2.1.4 Utility Assessment

Utilities identified at the Energy Park/Longe/NYSCC include one telecommunications line located in the railroad right-of-way that parallels the western site border of the site. It is operated by Level 3 Communications, Inc. Other utilities (electric, gas, water, etc.) are located on the west side of the rail line.

The utility assessment findings do not appear to indicate significant limitations that would affect the construction and operation of a sediment processing/transfer facility. However, it is expected that utilities will be evaluated further during design.

3.2.1.5 Archaeological and Architectural Assessments

Preliminary Archaeological Assessment

Based on the background research performed during the PCS evaluation phase, the Energy Park/Longe/NYSCC site was considered to have a low potential for archaeological resources. The Phase IB Survey confirmed the preliminary assessment.

Archaeological Investigation

A Phase IB Survey was conducted at the Energy Park/Longe/NYSCC site October 6 through October 13, 2003 (see Figure 3.2.1-3). A total of 271 shovel test pits (STPs) were excavated at this 103.9-acre site. No cultural resources and/or archaeological sites were found.

Geomorphological Investigation

Fieldwork was conducted on October 13, 15, and 16, 2003. Six backhoe trenches (BHTs) totaling 54.5 meters in length were excavated. Two backhoe trenches (BHT 2 and BHT 6) revealed the presence of relict stream channels. Such a geomorphic setting is known to have been attractive to Native American groups and has a potential to contain prehistoric sites.

Architectural Assessment

Fieldwork was conducted during July 2003 and on October 16, 2003. No structures are located within any of the three properties that comprise this site. A small working farm is situated immediately south of the site. Structures associated with this farm, which include a residence and several agricultural outbuildings, appear to be less than 50 years old. Structures located across the canal are shielded by vegetation. There are no architectural or viewshed concerns associated with this site.

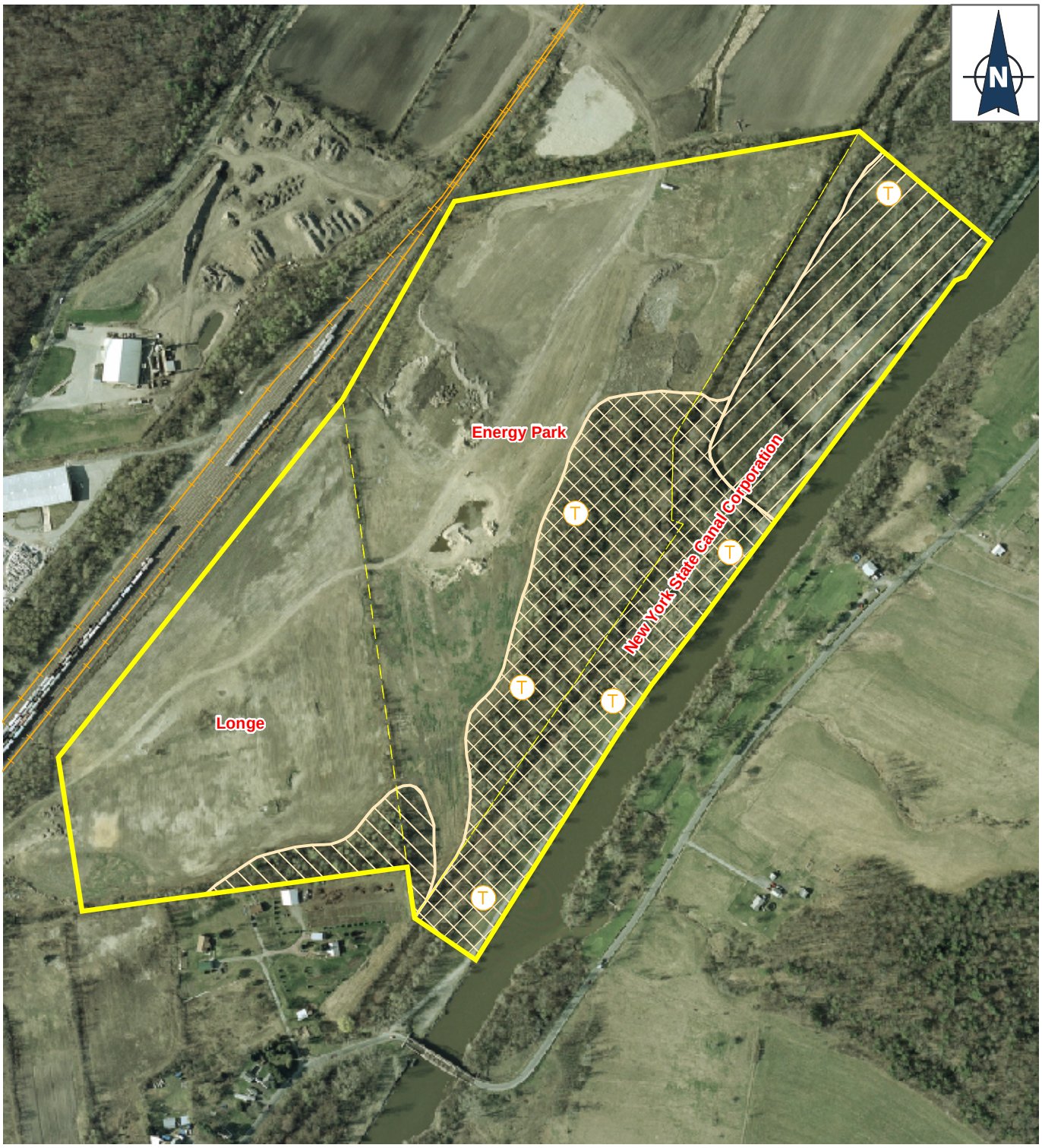
No further archaeological surveys or architectural investigations are recommended for this FCS. An additional small-scale geomorphologic investigation is recommended where the relict streams were located. The archaeological and architectural assessment findings do not appear to represent potential significant limitations that would affect the construction and operation of a sediment processing/transfer facility.

3.2.1.6 Wetland Assessment

Wetland determinations and delineations of the Energy Park/Longe/NYSCC site took place September 17 and September 18, 2003. Determination and delineation activities were limited to those areas previously identified as potential wetlands through data review and previous site reconnaissance efforts.

Review of NWI wetland mapping indicated the presence of approximately 28.4 acres of wetland on this site. Approximately 11.9 acres were mapped on the Energy Park parcel, 4.3 on the Longe parcel, and an additional 12.2 acres on the

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Potential Site Boundary

Archaeological Testing Method

- Backhoe Test
- Shovel Test
- Backhoe & Shovel Test
- (T) Backhoe Trench Locations

Hudson River PCBs SUPERFUND SITE

Figure 3.2.1-3
Field Sampling Areas
Phase I B Cultural Resources Investigation
Energy Park / Longe / New York State Canal Corporation

500 250 0 500 1,000 Feet

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NYSCC parcel. Although NWI wetland maps identify the Champlain Canal as a lacustrine wetland, sample plots and determinations did not extend into the canal. Review of NYSDEC wetland mapping indicated no NYSDEC wetlands have been previously identified on these parcels.

The Washington County Soil Survey was reviewed to determine the soil types mapped on this site (U.S. Department of Agriculture 1974). The mapped soil types within the site boundaries are Claverack loamy fine sand, orthents and psamments, and Wallington silt loam, sandy substratum. Recent mining and filling activities likely have modified the preexisting soil type on the Longe property. The soil type mapped within the forested wetland on Energy Park is Wallington silt loam, sandy substratum. In the spring and during wet periods, the water table within this soil type is typically perched on a low permeability sublayer. Field observations noted high shale content on the surface layer along the western portion of the site.

Results of the Wetland Assessment

Field determination procedures resulted in the delineation of one wetland area covering approximately 8.42 acres on the Energy Park parcel (see Table 3.2.1-1 and Figure 3.2.1-4). The discrepancy between field-delineated acreage and acreage indicated by NWI mapping may have been caused by alterations to the landscape from logging and filling activities on these parcels. However, NWI mapping primarily uses remote sensing techniques (i.e., photo interpretation) without field confirmation and therefore does not necessarily represent an accurate description of on-site conditions. Rather, the mapping is a basis for further investigation.

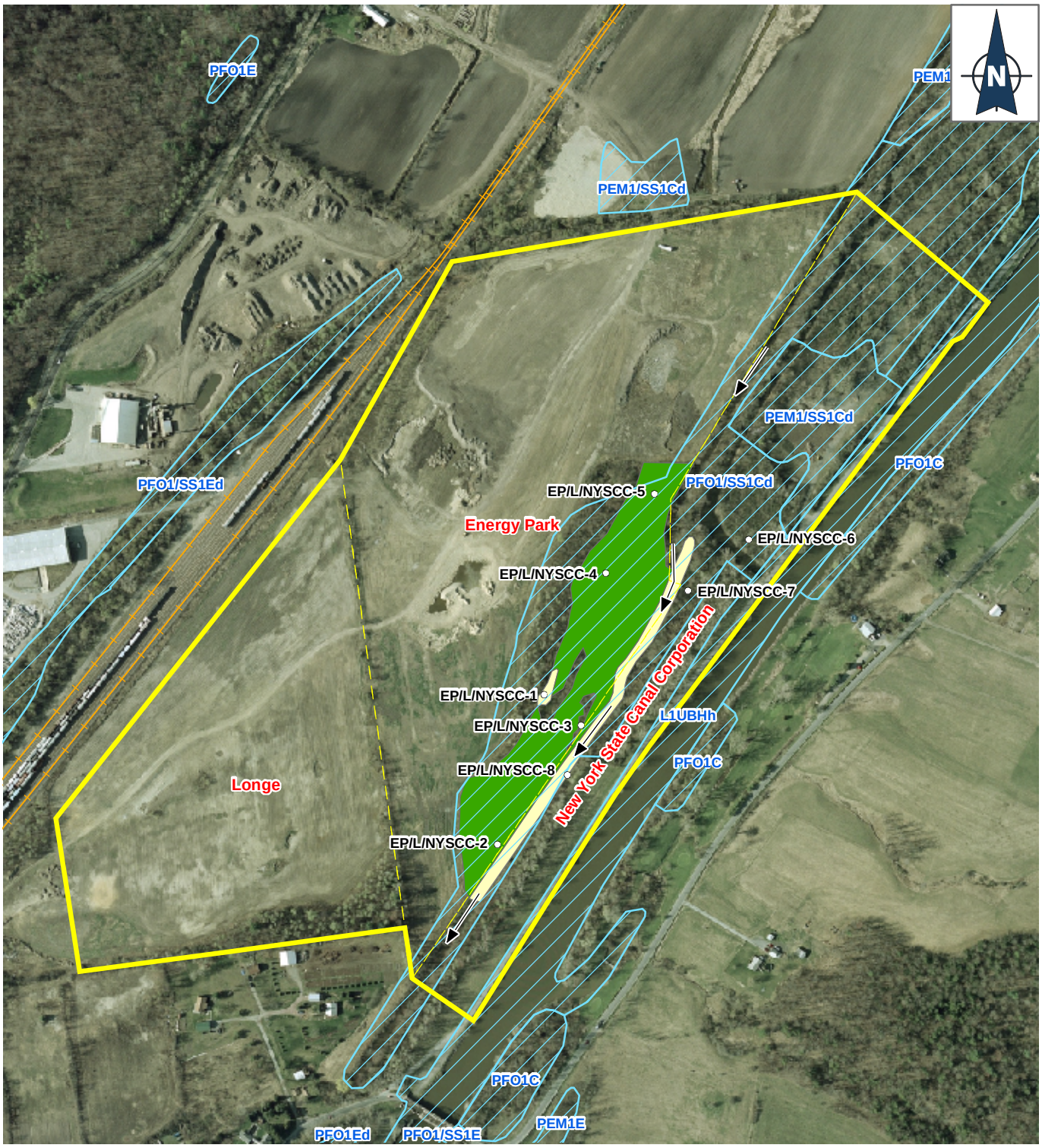
Table 3.2.1-1 Energy Park/Longe/NYSCC Wetland Delineation Summary

Community Type	Acreage
Emergent	1.40
Forested	7.02
Total Acreage	**8.42**

All three parcels have been disturbed as a result of fill placement or material stockpiling. The Energy Park and Longe parcels were previously used as a topsoil mine. The sand pits were recently filled with thermally treated nonhazardous soils.

A drainage channel that appears to be manmade separates the Energy Park and NYSCC parcels. Trees and debris have dammed portions of the channel, reducing the flow and allowing the formation of an emergent fringe in many areas along the banks of the channel.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- NYS DEC Mapping
- National Wetland Inventory Mapping

Delineated Wetlands

- Emergent
- Forested
- Observation Plots
- Direction of Drainage Flow

Hudson River PCBs SUPERFUND SITE

Figure 3.2.1-4
Wetland Locations
Energy Park / Longe / New York State Canal Corporation

500 250 0 500 1,000 Feet

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Predominant species within site wetlands include green ash (*Fraxinus pennsylvanica*), eastern cottonwood (*Populus deltoids*), spotted jewelweed (*Impatiens capensis*), New England aster (*Aster novae-angliae*), giant goldenrod (*Solidago gigantean*), wool grass (*Scirpus cyperinus*), joe-pye weed (*Eupatorium maculatum*), soft rush (*Juncus effuses*), and shallow sedge (*Carex lurida*). Species found along the stream channel include rice cutgrass (*Leersia oryzoides*), arrow-leaf tearthumb (*Polygonum sagittatum*), broad-leaf cattail (*Typha latifolia*), *Carex* spp., and sensitive fern (*Onoclea sensibilis*).

The wetland assessment findings do not appear to represent potential significant limitations that would greatly affect the use of the site as a sediment processing/transfer facility. However, avoidance/mitigation of wetlands will need to be considered in the design of the facility.

3.2.1.7 Floodplain Assessment

An initial floodplain assessment was conducted on the Energy Park/Longe/NYSCC site in order to determine the presence, extent, and orientation of FEMA-mapped floodplains within site boundaries. Flood magnitudes and historic river stages from gauging stations as close as available to the site were also examined to obtain an initial sense of the characteristics of on-site flooding.

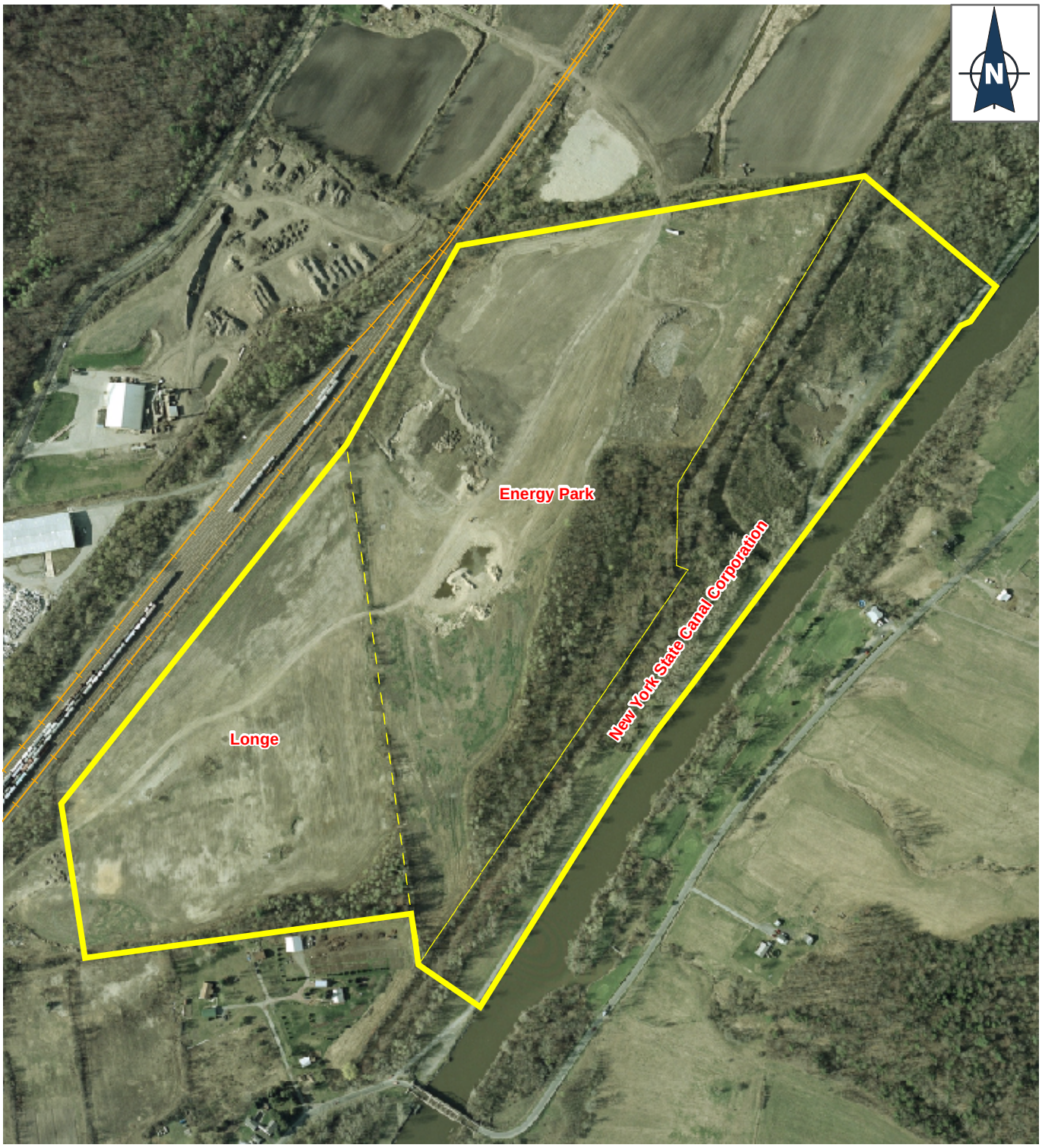
Figure 3.2.1-5 shows the Energy Park/Longe/NYSCC site is not located within the 100-year and 500-year floodplains and the closest 100-year floodplain is approximately 0.65 mile away from the site. The site is located along the Champlain Canal, approximately 1.4 miles northeast of the Hudson River, in the Town of Fort Edward.

The closest USGS gauge station is in Fort Edward, 0.4 mile upstream from the bridge over State Highway 197. The gauge station is approximately 1.1 miles upstream of the Champlain Canal/Hudson River boundary. Flood magnitudes were calculated using statistical methods from 26 years of modern flow data at the Fort Edward gauge station, after the Fort Edward dam was removed. Historic water level data (1916 to 2000) is also available from NYSCC Lock 7, which is located approximately 1.4 miles southwest of the site boundary.

Given the location, the distance to the canal, site topographic characteristics, and the fact that the site is outside the 100-year floodplain, the site is not likely to experience major flooding. Based on the NYSCC water-level data on the downstream side of Lock 7, there is also no evidence that flooding occurs on a smaller scale at this site, with the exception of localized soil saturation and inundation within the identified wetland area. Only one of the peak annual water levels between 1916 and 2000 was above the ground elevation at this site.

The floodplain assessment findings do not appear to represent potential significant limitations that would affect the use of the site as a sediment processing/transfer facility.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Potential Site Boundary
- Tax Parcels

FEMA Floodplain

- 100 Year Floodplain
- 500 Year Floodplain

Hudson River PCBs SUPERFUND SITE

Figure 3.2.1-5
FEMA Floodplain Mapping
Energy Park / Longe / New York State Canal Corporation

500 250 0 500 1,000 Feet

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3.2.1.8 Coastal Management Area Assessment

The Energy Park/Longe/NYSCC site is not located in the state-designated coastal zone. Therefore, no direct impacts are expected as a result of the potential use of this site. EPA will prepare an additional phase of its coastal zone consistency assessment and subsequent coastal zone consistency determination, covering potential indirect and cumulative impacts from the operation of sediment processing/transfer facilities, once the Phase 1 and Phase 2 dredging facility locations are selected.

3.2.1.9 Baseline Habitat and Threatened and Endangered Species Assessment

Site Habitat Description

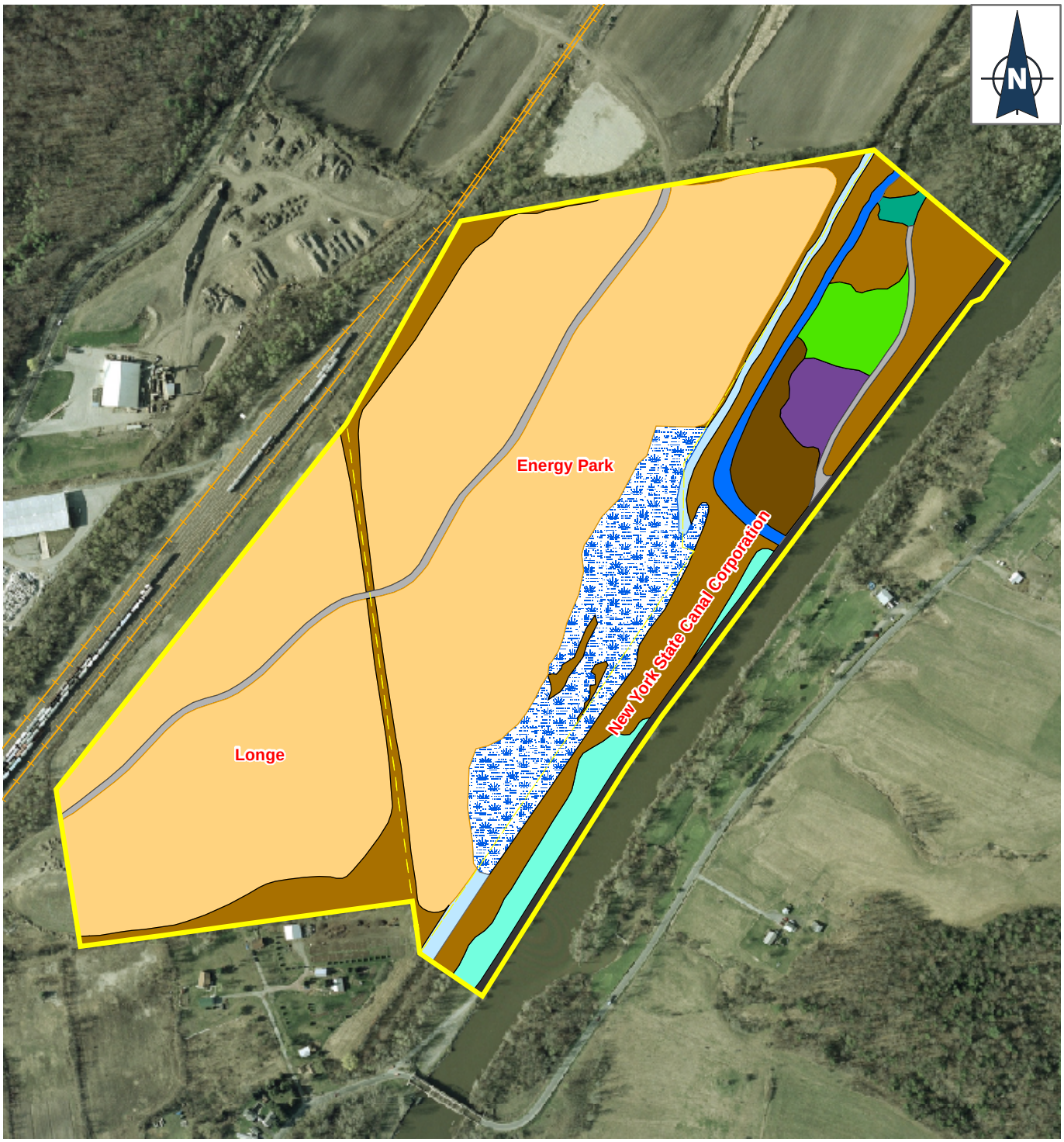
Disturbance from historic and current land uses have greatly influenced the availability, extent, and diversity of on-site habitats. The site was formerly used as a topsoil mine. Over the past several years treated non-hazardous soils from a soil treatment facility adjacent to the site have been placed on-site. Over the past two growing seasons, corn has been planted over most of the site for the purposes of soil reclamation and livestock feed. This is a temporary situation. The site also appears to be disturbed from logging on portions of the site. The ultimate goal is to develop this site as commercial/light industrial property. The majority of the site consists of cropland and successional northern hardwood community types. The vegetation within the non-agricultural areas are represented by early successional (less than 20 years) to mid-successional (20 to 60 years) communities.

Using *Ecological Communities of New York State* (Edinger et al. 2002) as a framework for habitat identification, twelve community types were found on this 104-acre site (see Figure 3.2.1-6). No sensitive or rare habitats were among them. Cropland temporarily covers approximately 61% of the site. Other communities include successional northern hardwoods, mowed lawn, wetlands, dredge spoils with successional species, and successional shrubland. Some locations contain larger, older trees (diameter at breast height [dbh] of 12 to 27 inches) that are isolated inside early to middle-aged stands.

Aquatic communities occur on the site, including ditch/marsh headwater stream and canal. Wetland communities are described in Section 3.2.1.6.

The majority of the riverfront (Champlain Canal) property (NYSCC parcel) comprises mowed lawn and successional northern hardwoods. The shoreline community is characteristic of the channelized portions of the Champlain Canal, with boulder-lined riprap along the entire waterfront boundary. A portion of the shoreline contains an outfall from the upstream portion of Lock 8. This outfall originates from an open water area and canal that drains from the east. The ditch/marsh headwater stream community type separates the cropland community from the Champlain Canal and adjacent habitats. This stream community appears

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



Ecological Communities

- Paved Road
- Unpaved Road
- Wetland
- Successional Northern Hardwoods (SNH)
- Dredge Spoils / SNH
- Successional Shrubland
- Ditch / Marsh Headwater Stream
- Canal
- Construction / Road Maintenance Spoils
- Cropland
- Mowed Pathway
- Mowed Roadside

Hudson River PCBs SUPERFUND SITE

Figure 3.2.1-6
Site Ecological Communities
Energy Park / Longe / New York State Canal Corporation

500 250 0 500 1,000 Feet

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to have been channelized at one time and is heavily silted in with the emergent vegetation that is abundant in many locations.

Common vegetation species and community structure have an influence on wildlife occurrence on-site. The cropland provides food for ungulates (i.e., whitetail deer) and a variety of avian species. Forested and wetland communities occur next to cropland areas. These communities provide cover, nesting, and additional feeding areas for wildlife species. Additional incidental wildlife observations included coyote, white-footed mouse, bullfrog, green frog, raccoon, turkey vulture, mallards, American crow, and other common songbirds.

Endangered Species Act Issues

Correspondence with the USFWS and NYSDEC indicates no listed-species issues are associated with this site. Wintering bald eagles may migrate through the area but are not known to use the site. A biological assessment will be prepared to examine the potential impacts associated with the construction and operation of a sediment processing/transfer facility for each of the Suitable Sites.

The baseline habitat and endangered species assessments findings do not appear to represent potential significant limitations that would affect the construction and operation of a sediment processing/transfer facility.

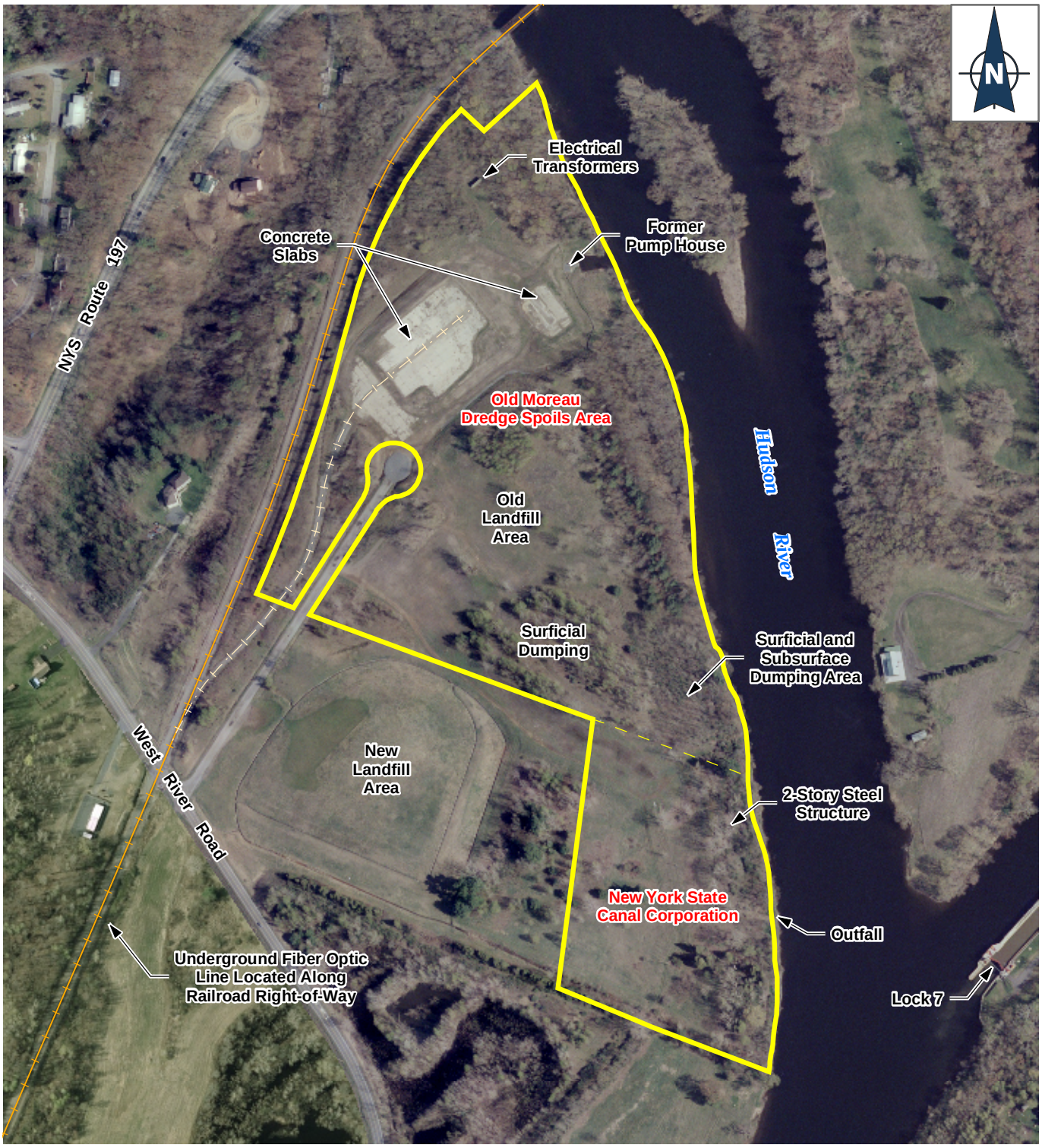
3.2.2 Old Moreau Dredge Spoils Area/NYSCC

3.2.2.1 Phase I ESA

This site is currently undeveloped with no formal roads on-site. The site topography is relatively flat except in the landfill areas and along the waterfront where there is an approximate 10-foot drop-off in some areas. The waterfront is undeveloped and consists of a sand beach approximately 5 to 10 feet wide. Surficial trash, bulk plastic, and other debris (car parts, etc.) were noted along the bank and on the ground in the wooded area in the southwestern portion of the site. There is approximately 2,000 feet of waterfront along the Hudson River. Key site features are presented on Figure 3.2.2-1. Land use within 1 mile of the property is primarily residential and agricultural, with some industrial use.

The site is the location of a PCB dredge spoils landfill and the former NE Pulp Recycling Corporation facility. The facility contained two large warehouses (250 feet by 400 feet and 110 feet by 150 feet) with a rail spur through the center of the larger warehouse, a pump station at the river, and a former electric substation. The concrete foundations, a two-story steel structure surrounded by chain-link fence posts, buried plastic debris (eroding along the shoreline), and a 100-foot by 200-foot chain-link fenced area containing the remains of several stone buildings and dug wells remain. An outfall, a valve, and piping were also observed on the west bank of Hudson River, opposite the southern tip of Rogers Island.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Approximate Site Boundary
- Tax Parcel Boundary
- Active Railroad
- Abandoned Railroad (Buried)

Hudson River PCBs SUPERFUND SITE

Figure 3.2.2-1
Key Site Features
Old Moreau Dredge Spoils Area /
New York State Canal Corporation

500 250 0 500 Feet

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Rogers Island is east of the site across the Hudson River, between the Towns of Fort Edward and Moreau. Rogers Island is an area of historic significance. The navigation channel within the Hudson River is on the east side of Rogers Island. Thus, water depths in the river adjacent to the site are only approximately 5 to 6 feet.

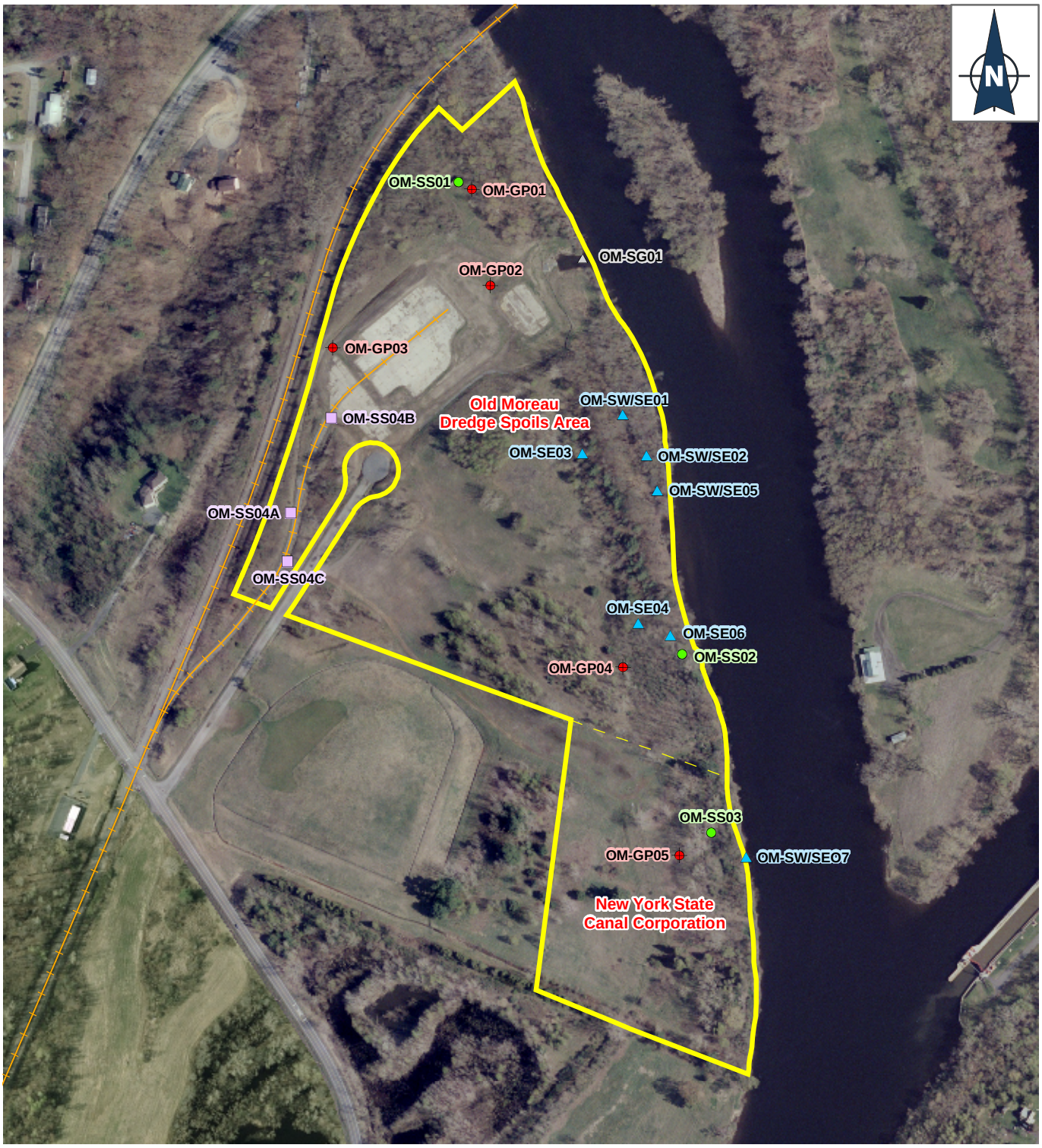
Three previous investigations were identified as having been conducted on this site. The first was conducted by Weston Environmental Consultants-Designers in 1977 (Weston 1978). The analytical results for soil and surface water samples indicated the presence of PCBs at concentrations as high as 32 parts per million (ppm). The analytical results for groundwater samples indicated PCB concentrations as high as 90 parts per billion (ppb). A second environmental investigation was conducted by Malcolm Pirnie, Inc. in 1992. Soil samples exhibited PCB concentrations as high as 170 ppm. The results of the field investigation were used to estimate the limits of PCB contamination, the volume of material for possible removal and the corresponding quantity of PCBs, and the costs for contaminated soil removal, relocation, and restoration of the property. The third environmental investigation was conducted by NYSDEC in 2002. Ninety-two surface soil samples, including three aqueous-phase samples, were collected from the parcel. The PCB concentrations ranged as high as 5.7 ppm in soil.

3.2.2.2 Phase II ESA

The environmental investigations at this site included collecting three surface soil samples, four surface water samples, seven sediment samples, five subsurface soil samples, five groundwater samples from newly installed temporary monitoring wells, and the installation of one stream gauge for hydrologic monitoring purposes (see Figure 3.2.2-2). Geotechnical soil testing was not performed at this site due to sufficient available existing information.

Parameters that exceeded screening criteria were PAHs in surface soil OM-SS04 (the composite sample adjacent to the rail spur); bis(2-ethylhexyl) phthalate in surface water sample OM-SW07 (at an outfall in the Hudson River); pesticides and PCBs in sediments along the Hudson River floodplain; PCBs in groundwater (OM-GP04); and various metals in all sample media. In addition to these compounds, various other compounds were detected above screening levels: SVOCs (PAHs) and pesticides in the floodplain sediments, and one SVOC (caprolactam) in two of the five groundwater samples. PAHs are typically associated with incomplete combustion of hydrocarbons and are common in urban and industrial areas. Therefore the presence of these compounds is not likely attributable to disposal activities. Although low concentrations of phthalates are considered a sampling artifact associated with the use of protective gloves in the field and laboratory, the concentration above screening levels detected in surface water OM-SW07 is anticipated to be the result of the presence of bulk plastic wastes observed in the bank of the Hudson River at this location. Due to the historical disposal nature of the site (i.e., the site contains two PCB-contaminated dredge spoil landfills), the presence of pesticides and PCBs in the floodplain sediments is not

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Geoprobe Soil Boring
- Geoprobe Soil Boring & Temporary Well
- Geoprobe & Geotechnical Boring
- Geotechnical Boring
- Surface Soil
- Soil Sample Adjacent to Railroad
- Surface Water / Sediment
- Stream Gauge
- Railroad
- Potential Site Boundary

Hudson River
PCBs SUPERFUND SITE

Figure 3.2.2-2
Sample Locations
Old Moreau Dredge Spoils Area /
New York State Canal Corporation

500 250 0 500
Feet

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unexpected. The drainage ways sampled receive direct runoff from the landfills via overland flow and drainage channels. As stated above, surface soils from the Old Moreau landfill contain up to 170 ppm PCBs (Malcolm Pirnie 1992). Although PCB levels as high as 90 ppb were detected in groundwater samples from the site (Weston 1978), PCBs detected in the groundwater from the temporary well sampled during this investigation are likely the result of high turbidity in the sample (PCBs typically bind to soil particles more readily than dissolving in water). The presence of metal concentrations above screening levels is discussed below.

Most metals are naturally occurring in soil/sediment and surface water/groundwater. Therefore, many of the exceedances are not of concern. The metals that exceeded the NYSDEC TAGM guidance values in surface soil samples were typically below eastern U.S. background levels. Of the metals that exceeded eastern U.S. background levels, magnesium levels were twice the background level in most of the surface soil samples, and zinc in OM-SS03 (at the reported electrical power substation) was 23 times higher than the eastern U.S. background level. The elevated zinc level could be due to the weathering of the galvanized steel structure at this location. Therefore, the metals in the surface soils collected from the site do not appear to be of concern. The same general principles hold true for the subsurface soils. The metals detected above the screening criteria in surface water and groundwater (aluminum, iron, magnesium, manganese, and sodium) are common, naturally occurring metals often detected above criteria and therefore are not of concern. Of the metals in the sediments found to be above screening levels, most were detected only slightly above the lowest-level effect, with the exception of cadmium, chromium, lead, and zinc, which were detected above the severe-level effect. The occurrence of these metals may have resulted from the presence of dredge spoils landfills and numerous dumping areas on-site.

The dredge spoil landfills and numerous dumping areas on-site appear to have contaminated the surface water with phthalates, and the sediments on the floodplain with pesticides, PCBs, and metals could be a potential issue in the construction and operation of a sediment processing/transfer facility.

3.2.2.3 Geotechnical Assessment

As discussed with the RD Team, existing information regarding geotechnical subsurface conditions is available so specific geotechnical information for this site was not needed. However, a certain degree of information was obtained from investigative activities completed for environmental sampling. Five locations—OM-GP01 through OM-GP05—were selected in the northern and eastern parts of the site (see Figure 3.2.2-2). At each location, a continuous vertical soil profile was completed from ground surface to a depth of approximately 25 feet below grade in 4-foot increments using direct-push technology (DPT).

DPT soil data indicates variable subsurface conditions. In the far northeastern corner, site soils consist of clays containing layers of silts and sands. Further to

the south, an approximately 5-foot layer of crushed concrete, stone, and silt overlie clay containing silt and sand seams, where occasional gravel was encountered. Two feet of crushed concrete and silt located along the northwest side overlie clay containing sand and silt seams. Gravelly silty sands and gravelly sands underlain by sandy clays and clay silts underlie the south-central part of the site to a depth of 25 feet.

Site studies by Malcolm Pirnie (1992) indicate the western part of the site contains clay and silt soils, while sandy and silty soils dominate the eastern part of the site. They also report that their site soil investigation findings show silty sands and clayey soils on-site. Dredge spoils were also present.

The presence of the dredge spoils landfill is a potential limitation to the design and construction of a sediment processing/transfer facility. However, it is expected that subsurface conditions in areas where fill is present will be addressed during design.

3.2.2.4 Utility Assessment

Utilities identified at the Old Moreau/NYSCC site included a telecommunications line (Level 3 Communications, Inc.) located in the railroad right-of-way that parallels the western site border. Overhead electrical power lines are located along West River Road, along the Old Moreau/NYSCC property line and extending across the Hudson River, and north-south across the NYSCC property.

The utility assessment findings do not appear to represent significant limitations that would affect the construction and operation of a sediment processing/transfer facility. However, further evaluation of the capacity of existing utilities is warranted.

3.2.2.5 Archaeological and Architectural Assessments

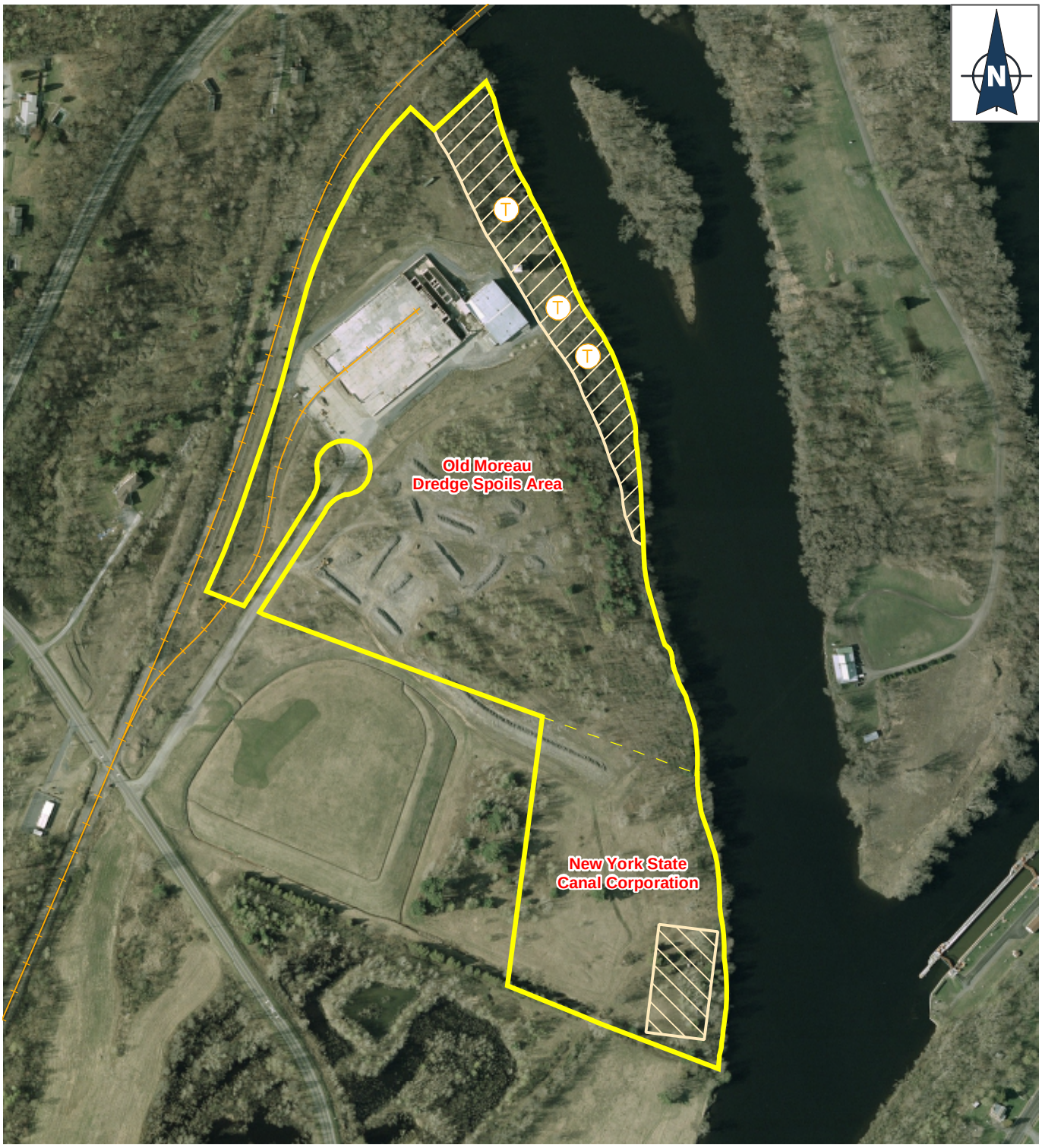
Preliminary Archaeological Assessment

Based on the background research performed during the PCS evaluation phase, the Old Moreau Dredge Spoils Area/NYSCC site was considered to have a moderate potential for archaeological resources. The Phase IB Survey modified the preliminary assessment.

Archaeological Investigation

A Phase 1 Survey was conducted on the Old Moreau Dredge Spoils Area/NYSCC site during July 2003 and fieldwork was conducted October 29 and 30, 2003 (see Figure 3.2.2-3). Twenty STPs were excavated in this 41.2-acre FCS. Shovel testing focused around the historic ruins of the former Jones/Rogers Estate, which reportedly dates back to the mid- to late 1700s. This property is potentially eligible for listing on the National Register of Historic Places. However, no cultural resources (i.e., artifacts, midden deposits) were found during shovel testing. The historic site appears to be confined within a chain-link fence established around

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Potential Site Boundary

Archaeological Testing Method

- Backhoe Test
- Shovel Test
- Backhoe & Shovel Test
- (T) Backhoe Trench Locations

Hudson River PCBs SUPERFUND SITE

Figure 3.2.2-3
Field Sampling Areas
Phase I B Cultural Resources Investigation
Old Moreau Dredge Spoils Area /
New York State Canal Corporation

500 250 0 500
Feet

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the structural ruins. With the exception of the area within the chain link fence, archaeological field investigations are complete.

Geomorphological Investigation

Three backhoe trenches with a total length of approximately 30 meters were excavated at this site October 21 through October 23, 2003. No cultural materials or features were noted in the trenches. The areas that were deep-tested are part of the low-lying floodplain and are expected to be constantly wet. It is doubtful that they would contain prehistoric remains.

Architectural Assessment

Fieldwork was conducted during July 2003 and October 13, 15, and 17, 2003. The Old Moreau Dredge Spoils Area property contains no structures older than 50 years of age.

The NYSCC property contains remains of a manor house and servants quarters associated with David Jones, fiancé of Jane McCrea, who was allegedly massacred by Native Americans allied with the British in 1777. The property was later purchased by Colonel Thomas Rogers, a prominent officer during the American Revolution, and became known as the Rogers Estate. This property, including the Rogers family cemetery located immediately to the west of the site, is potentially eligible for listing in the NRHP.

The existence of the historic manor may impose a potential limitation on the construction and operation of a sediment transfer/processing facility.

If avoidance is not feasible, a Phase II evaluation is recommended to determine the NRHP eligibility of this property. The area within the chain link fence, in the immediate vicinity of the Jones/Rogers house, warrants an archaeological investigation. If determined eligible, Phase III mitigation measures should be formulated and followed in consultation with OPRHP. No further deep testing is recommended as no evidence was found to suggest deeply buried archaeological sites. Depending on the final design of the proposed facility, additional viewshed studies may be necessary to evaluate the effect on the manor house and the nearby, but off-site, historical cemetery.

3.2.2.6 Wetland Assessment

Wetland determinations and delineations of the Old Moreau Dredge Spoils Area/NYSCC site occurred on September 18, 2003. Determination and delineation activities were limited to those areas previously identified as potential wetlands through data review and previous site reconnaissance efforts.

Review of NWI mapping indicated 1 acre of wetland on the Old Moreau parcel. No wetlands were previously mapped by NWI on the NYSCC parcel. Although NWI wetland maps identify the river as a riverine wetland, sample plots and de-

terminations did not extend into the river. NYSDEC wetland mapping did not identify wetlands on this site.

The mapped soil types include Limerick-Saco complex, Udipsamments, and Hudson silt loam. The Limerick soils appear on the Saratoga County hydric soils list and the Udipsamments are identified as having the potential for hydric inclusions.

Results of the Wetland Assessment

Field determinations resulted in the delineation of three wetland areas, encompassing approximately 1.03 acres (see Table 3.2.2-1 and Figure 3.2.2-4), located within the floodplain area adjacent to the river on the Old Moreau parcel. No wetlands were identified on the NYSCC parcel during the survey. The riverbank is relatively steep and high within the NYSCC parcel. Additionally, previous dumping/landfilling activities have occurred on the site, which appear to have raised the ground elevation above pre-disturbance levels. Field delineation results were similar in acreage to the NWI mapping.

Table 3.2.2-1 Old Moreau Dredge Spoils Area/NYSCC Wetland Delineation Summary

Community Type	Acreage
Forested	0.94
Emergent	0.09
Total Acreage	**1.03**

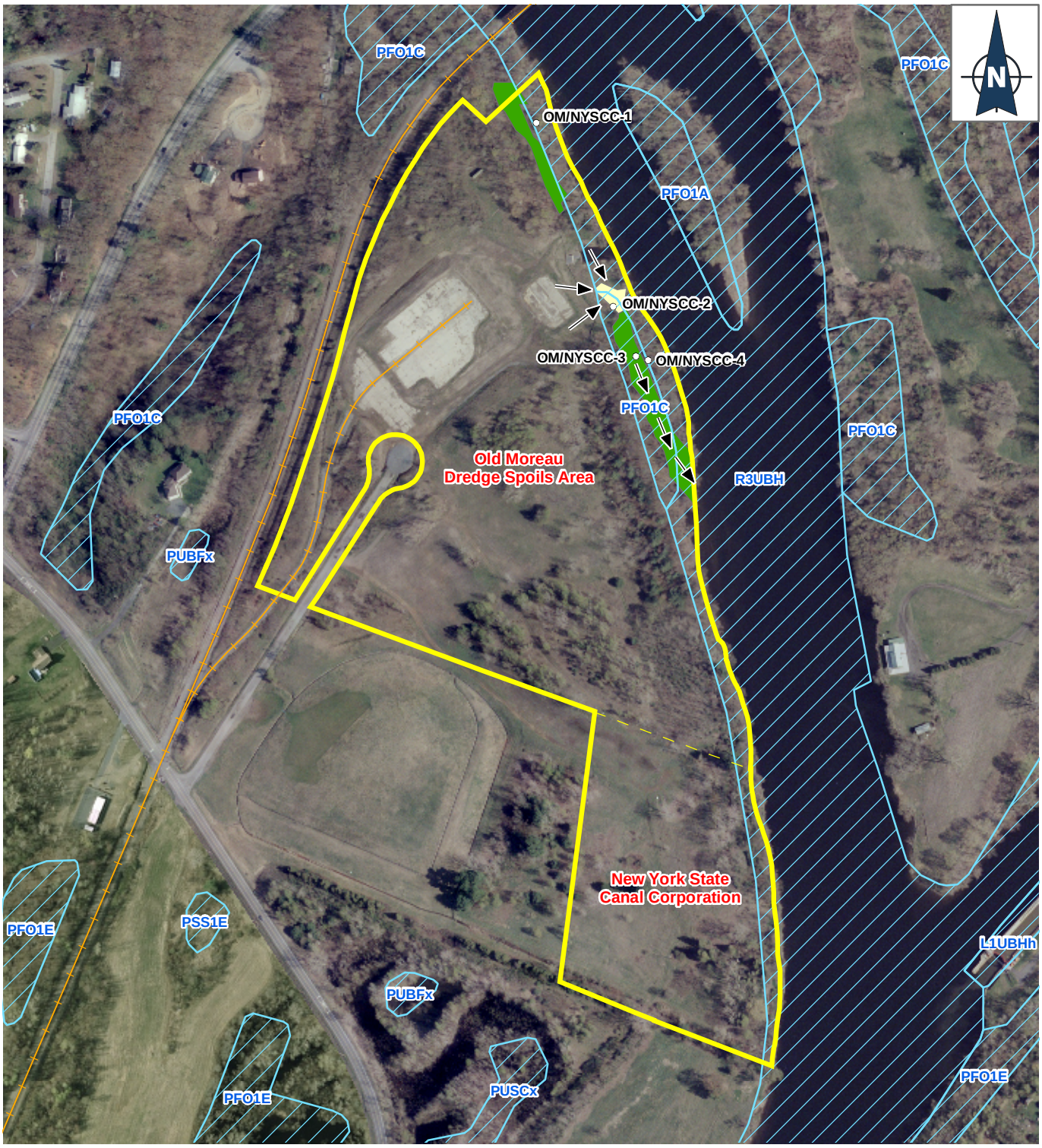
Predominant species within the wetland areas include red maple (*Acer rubrum*), slippery elm (*Ulmus rubra*), sensitive fern (*Onoclea sensibilis*), ostrich fern (*Matteuccia struthiopteris*), false nettle (*Boehmeria cylindrica*), broad-leaf cattail (*Typha latifolia*), common reed (*Phragmites australis*), wool grass (*Scirpus cyperinus*), reed canary grass (*Phalaris arundinacea*), boneset (*Eupatorium perfoliatum*), purple loosestrife *(Lythrum salicaria*), and buttonbush (*Cephalanthus occidentalis*). The wetland assessment findings do not appear to represent potential significant limitations that would greatly affect the use of the site as a sediment processing/transfer facility. However, avoidance/mitigation of wetlands will need to be considered in the design of the facility.

3.2.2.7 Floodplain Assessment

An initial floodplain assessment was conducted on the Old Moreau Dredge Spoils Area/NYSCC site in order to determine the presence, extent, and orientation of FEMA-mapped floodplains within site boundaries. Flood magnitudes and historic river stages from gauging stations as close as available to the site also were examined to obtain an initial sense of the characteristics of on-site flooding.

Figure 3.2.2-5 shows that portions of the Old Moreau Dredge Spoils Area/ NYSCC site are located within the 100-year and 500-year floodplains. The site is located on the west side of the Hudson River, opposite Rogers Island, in the Town

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- NYS DEC Mapping
- National Wetland Inventory Mapping

Delineated Wetlands

- Emergent
- Forested
- Observation Plots
- Direction of Drainage Flow

Hudson River
PCBs SUPERFUND SITE

Figure 3.2.2-4
Wetland Locations
Old Moreau Dredge Spoils Area /
New York State Canal Corporation

500 250 0 500
Feet

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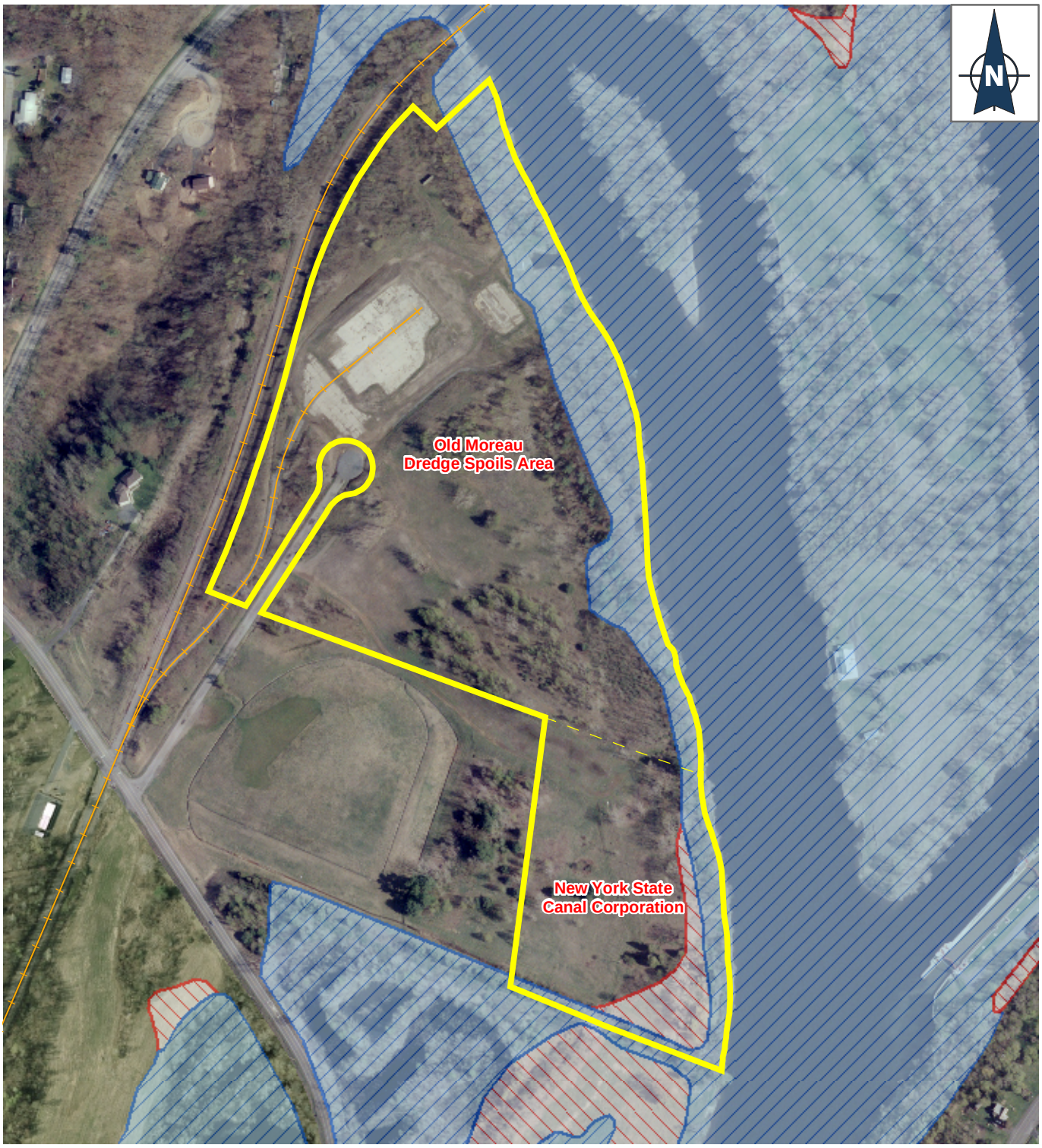
SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Potential Site Boundary

FEMA Floodplain

- 100 Year Floodplain
- 500 Year Floodplain

Hudson River PCBs SUPERFUND SITE

Figure 3.2.2-5
FEMA Floodplain Mapping
Old Moreau Dredge Spoils Area /
New York State Canal Corporation

500 250 0 500
Feet

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of Moreau. Within the site, the floodplain is oriented in a narrow strip that parallels the river and is located entirely along the eastern edge of the parcel. Approximately 18% (7.6 acres) of the total area of the site is within the 100-year floodplain and 8.9 acres (22% of the total area of the site) are in the 500-year floodplain.

The closest gauge station is in Fort Edward, approximately 0.6 miles upstream of the site boundary. Because of the relative proximity of the site to the gauge station, values of the 100-year flood at the gauge station will be similar to the site.

Flood magnitudes were calculated using statistical methods from the 26 years of flow data at the gauge station after the Fort Edward dam was removed. Based on this data, no 100-year flood has occurred in the 26 years of modern data. In that time, there have been two flow events greater than 10-year floods (May 3, 1983 and January 10,1998).

Historic water-level data (1916 to 2000) also is available from NYSCC's Lock 7. Lock 7 is close to the site, directly opposite the southern boundary on the eastern side of the Hudson River. Based on the NYSCC data, the 100-year flood elevation may have been reached within site boundaries once between 1916 and 2000.

The elevations of the site were reviewed using contour information and aerial photography to determine an approximation of how a 100-year flood would affect the site. It was determined that, in the event of a 100-year flood, the area along the river would be under approximately 12 feet of water.

Given the proximity to the Hudson River, the area of the site that is located within the 100-year floodplain, and site topographic characteristics, the site appears to be subject to flooding events. While the probability of a 12-foot inundation event (100-year flood) is remote, NYSCC water-level data on the downstream side of Lock 7 provide evidence that flooding on a smaller scale likely occurs almost annually at this site. Based on calculations of an average stage level using the maximum river stage at Lock 7 for the available time period (1916 to 2000), the site shoreline boundary would have been under approximately 12 feet of water during the maximum high water level on April 3, 1922 and under an average of 5.6 feet of water during the maximum flow recorded for each year. Limited flooding was observed on October 28, 2003 in the northern extent of the floodplain adjacent to the river.

The floodplain assessment findings do not appear to represent potential significant limitations that would greatly affect the construction and operation of a sediment processing/transfer facility. During facility design the presence and location of the 100-year floodplain would be considered.

3.2.2.8 Coastal Management Area Assessment

The Old Moreau Dredge Spoils Area/NYSCC site is not located in the state-designated coastal zone. Therefore, no direct impacts are expected as a result of the potential use of this site. EPA will prepare an additional phase of its coastal zone consistency assessment and subsequent coastal zone consistency determination, covering potential indirect and cumulative impacts from the operation of sediment processing/transfer facilities, once the Phase 1 and Phase 2 dredging facility locations are selected.

3.2.2.9 Baseline Habitat and Threatened and Endangered Species Assessment

Site Habitat Description

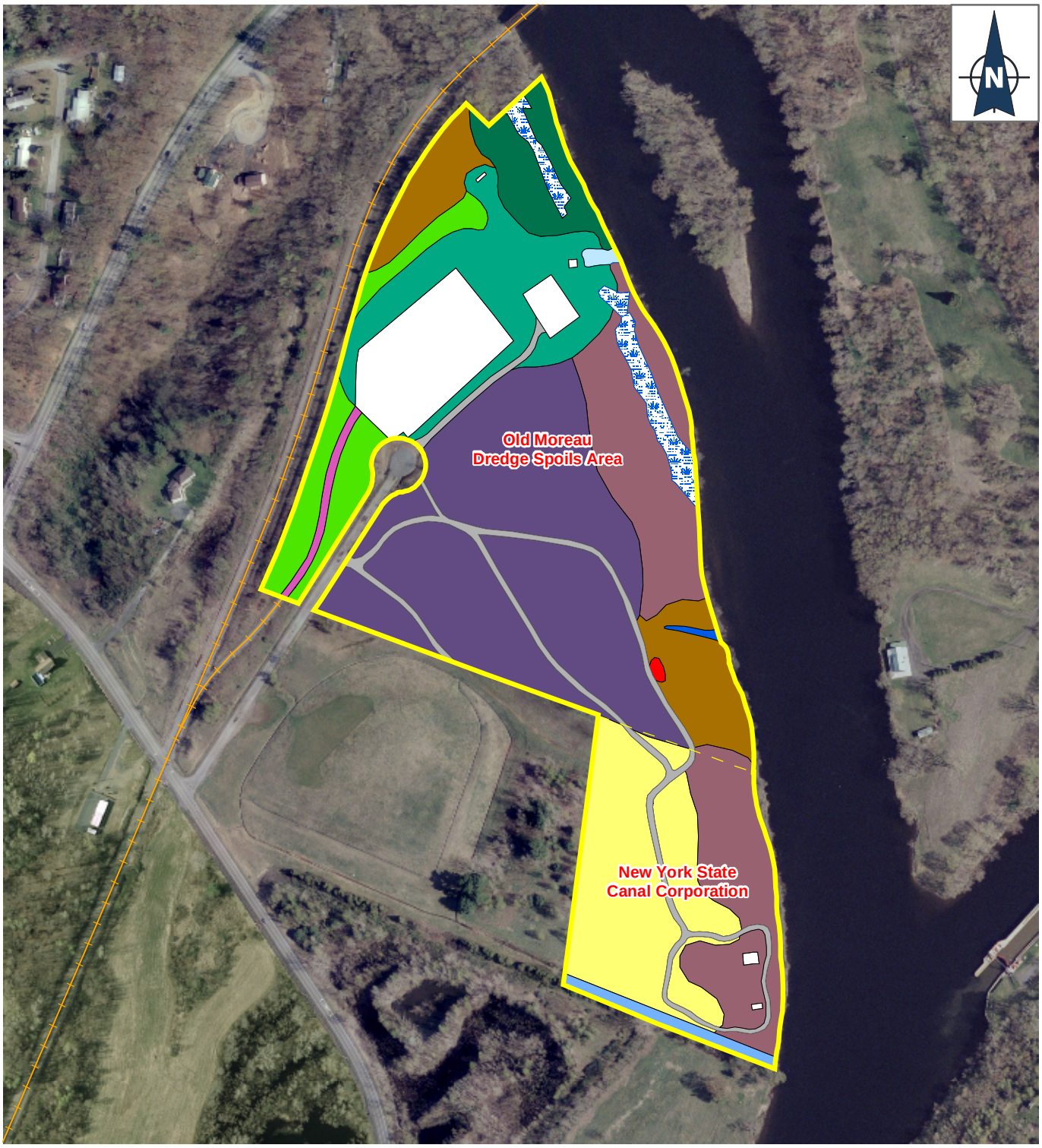
The site is a former industrial/commercial facility located in a rural setting. The disturbance from these industrial/commercial activities has greatly influenced the availability, extent, and diversity of on-site habitats. The buildings have been removed and the rail line has been buried. The demolition of the old buildings has resulted in the creation of a park-like setting on portions of the site. The concrete foundations of the main buildings are still present but have had holes drilled in them for site drainage, and grasses are planted along the sides of the foundation. A portion of the site contains the remnants of a concrete building foundation (rural structure exterior community type), and another portion of the site contains a dredge spoils area (i.e., landfill). The majority of habitats on-site are composed of relatively early successional (less than 20 years) to mid-successional (20 to 60 years) vegetation communities, with several areas of late successional (greater than 60 years) along the forested shoreline.

Using *Ecological Communities of New York State* (Edinger et al. 2002) as a framework for habitat identification, fourteen community types have been mapped as occurring on this 41-acre site (see Figure 3.2.2-6). No sensitive or rare habitats were among them. A mixed dredge spoils/successional northern hardwoods/successional old field community type covers 29% of the site. Other communities include pine northern hardwood, successional old field, successional northern hardwood, successional shrubland, maple-basswood rich mesic forest, and mowed pathway communities.

Aquatic communities occurring on-site include a backwater slough and an intermittent stream. The backwater slough is a shallow bay, which is connected to the Hudson River. Emergent vegetation (i.e., cattail) and open water are present in this community. The intermittent stream ends at the apparent base of the dredge spoils area. The stream is ephemeral and no water was observed during the field visits. Wetland communities present on the site are discussed in Section 3.2.2.6.

The northern shoreline community is characteristic of a forested floodplain with portions of shallow sand and gravel beach interspersed among areas of heavy vegetation. The southern end of the site has a steep bank with a rock riprap toe

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



Ecological Communities

- Unpaved Road
- Wetland
- Successional Northern Hardwoods (SNH)
- Successional Old Field (SOF)
- Successional Shrubland
- Intermittent Stream
- Ditch
- Backwater Slough
- Dredge Spoils / SNH / SOF
- Junkyard
- Pine-Northern Hardwood Forest
- Maple-Basswood Rich Mesic Forest
- Railroad
- Rural Structure Exterior
- Mowed Pathway

Hudson River PCBs SUPERFUND SITE

Figure 3.2.2-6
Site Ecological Communities
Old Moreau Dredge Spoils Area /
New York State Canal Corporation

500 250 0 500 Feet

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layer. Most of the shoreline is shallow with a predominantly sand substrate. Some large woody debris structure is present along the shoreline.

Common vegetation species and community structure have an influence on wildlife occurrences on the site. The availability of forested, shrubland, and old field communities provides a diverse habitat for wildlife species. Incidental wildlife observations included whitetail deer, beaver, gray squirrel, red fox, raccoon, wood frog, green frog, tree frog, turkey vulture, red-tailed hawk, mallards, and various songbirds.

Endangered Species Act Issues

Correspondence with the USFWS and NYSDEC indicates that no threatened or endangered species issues are associated with this site. Wintering bald eagles may migrate through the area but are not known to use the site. A biological assessment will be prepared to examine the potential impacts associated with the construction and operation of a sediment processing/transfer facility for each of the Suitable Sites.

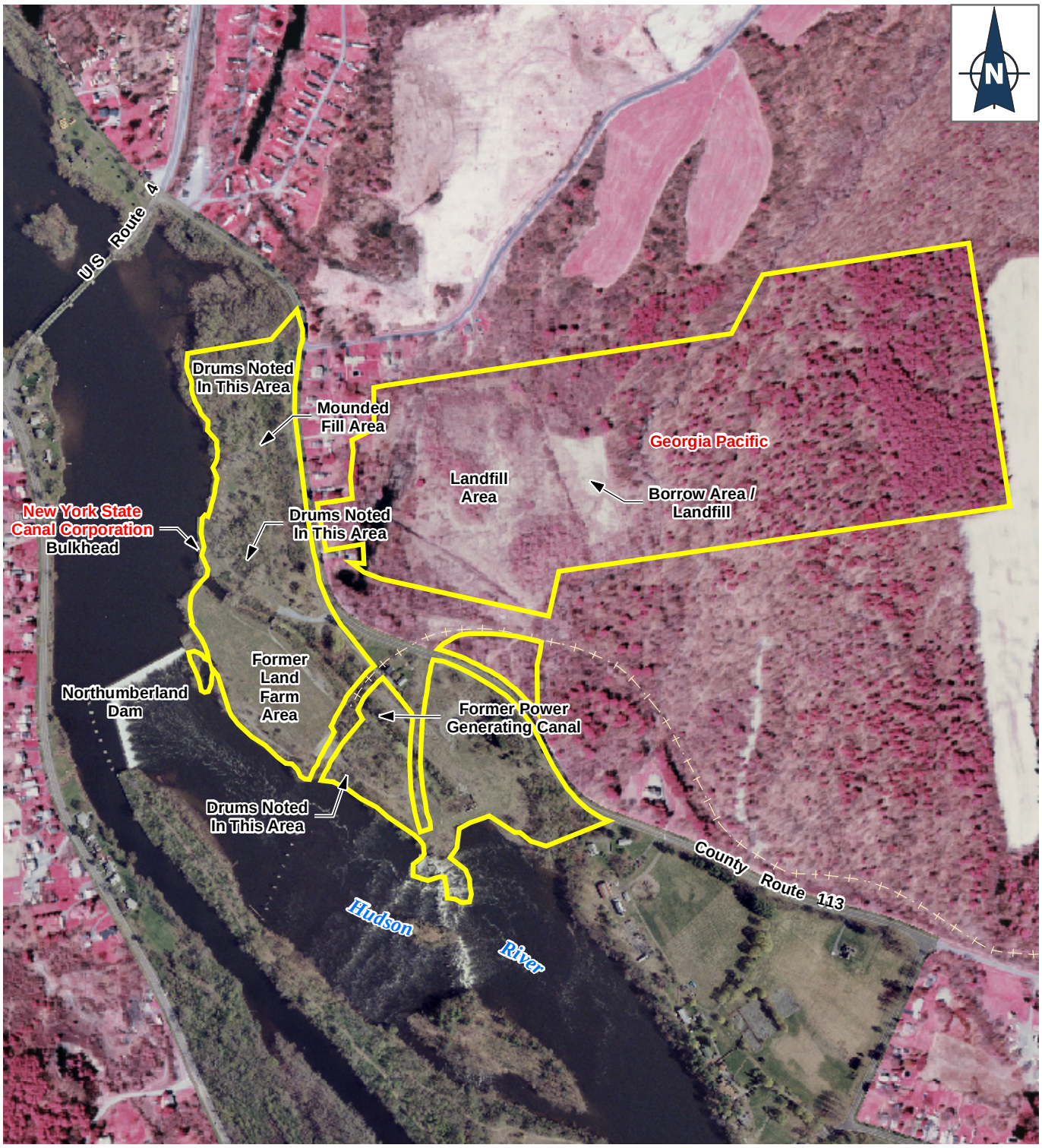
The baseline habitat and endangered species assessments findings do not appear to represent potential significant limitations that would affect the construction and operation of a sediment processing/transfer facility.

3.2.3 Georgia Pacific/NYSCC

3.2.3.1 Phase I ESA

The Georgia Pacific/NYSCC site is the location of a former paper mill operation that was purchased by Georgia Pacific approximately 20 years ago. The former mill structures have been removed. According to a Georgia Pacific representative, the site landfill and land farm areas are currently closed. However, these closure reports were not provided and this information could not be verified. Key site features are presented on Figure 3.2.3-1. This site is not currently developed. The only portion of the site currently used is the bulkhead along the river, which is being used by NYSCC. A canal formerly used for hydroelectric power generation was identified along the eastern edge of the riverside tract. This canal is currently blocked off from the river, and remnants of the power facility foundation are still present. A rail corridor runs onto the riverfront tract for 200 feet and south of the larger inland tract for 670 feet. The rail spurs are inactive and need refurbishing. In addition to the waterfront property, a large portion of the parcel is located on the site east of County Road 113. This tract contains a landfill in the western portion and native wooded upland, with streams in the eastern portion. A creek runs along the western boundary of the former landfill and ultimately discharges to the Hudson River.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Approximate Site Boundary
- Tax Parcel Boundary
- Abandoned Railroad

Hudson River PCBs SUPERFUND SITE

Figure 3.2.3-1
Key Site Features
Georgia Pacific / New York State Canal Corporation

500 250 0 500 1,000
Feet

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The site is surrounded by rural residential and vacant land. The site topography is relatively flat along the waterfront and hilly on the east side of County Road 113. Portions of the waterfront are open grassy areas, surrounded by wooded areas. Most of the area on the east side of County Road 113 is wooded except for the open areas containing the landfill. There is direct river access, with river frontage extending approximately 1,295 feet above the Northumberland Dam, as well as 185 feet of dike and 350 feet of undeveloped land below the dam. Approximately 1,410 feet of shoreline below the dam is not navigable because of the dam and shallow water. The water adjacent to the existing bulkhead is approximately 10 feet deep. Rock outcrops were observed in the upland section of the eastern parcel and along the shoreline adjacent to the bulkhead.

Although surficial environmental concerns were not identified at this site, several 55-gallon drums were found throughout the site: eleven drums were observed in the northwestern portion of the site along with several empty 1-gallon roofing tar cans. Approximately nine drums were found in the northeast portion of the riverfront parcel; two drums were found in the central portion of the riverfront parcel, and several drums were found along the waterfront below the dam and in the southeast corner of the riverfront parcel. In most cases the drums appeared to be empty. However, one drum in the northwest corner of the site contained a black grease-like substance. The drums in the northwest corner of the site were subsequently removed by Basile Environmental Solutions (under contract to Georgia Pacific) in October 2003.

In 1999, Apex Environmental, Inc. performed an investigation in reference to NYSDEC Spill No. 93-07610 (Apex 1999). The investigation focused on the southwest riverfront portion of the site between the former power canal and the Hudson River. Three bedrock wells were installed at the north part of this riverfront area, and one well was installed at the south end. A review of the well drilling logs indicated that overburden thickness in this area ranges between 13 and 22 feet below ground surface (BGS). The overburden was described as primarily sand and silt, with small amounts of fine gravel followed by inorganic clays overlying the shale bedrock. During well installation, water in the overburden was encountered between 10 and 15 feet BGS. Soil and groundwater samples were collected from the four wells. At a later time, two soil borings were installed, and subsurface soil samples were collected from the depth intervals that exhibited the highest monitoring equipment readings during the previous well installations. The report concluded that no contamination was detected at concentrations above the cleanup standards established in NYSDEC's Spill Technology and Remediation Series. Based on the results of this investigation, NYSDEC closed NYS Spill No. 93-07610 in December 1999, and the four wells were decommissioned in September 2000.

3.2.3.2 Phase II ESA

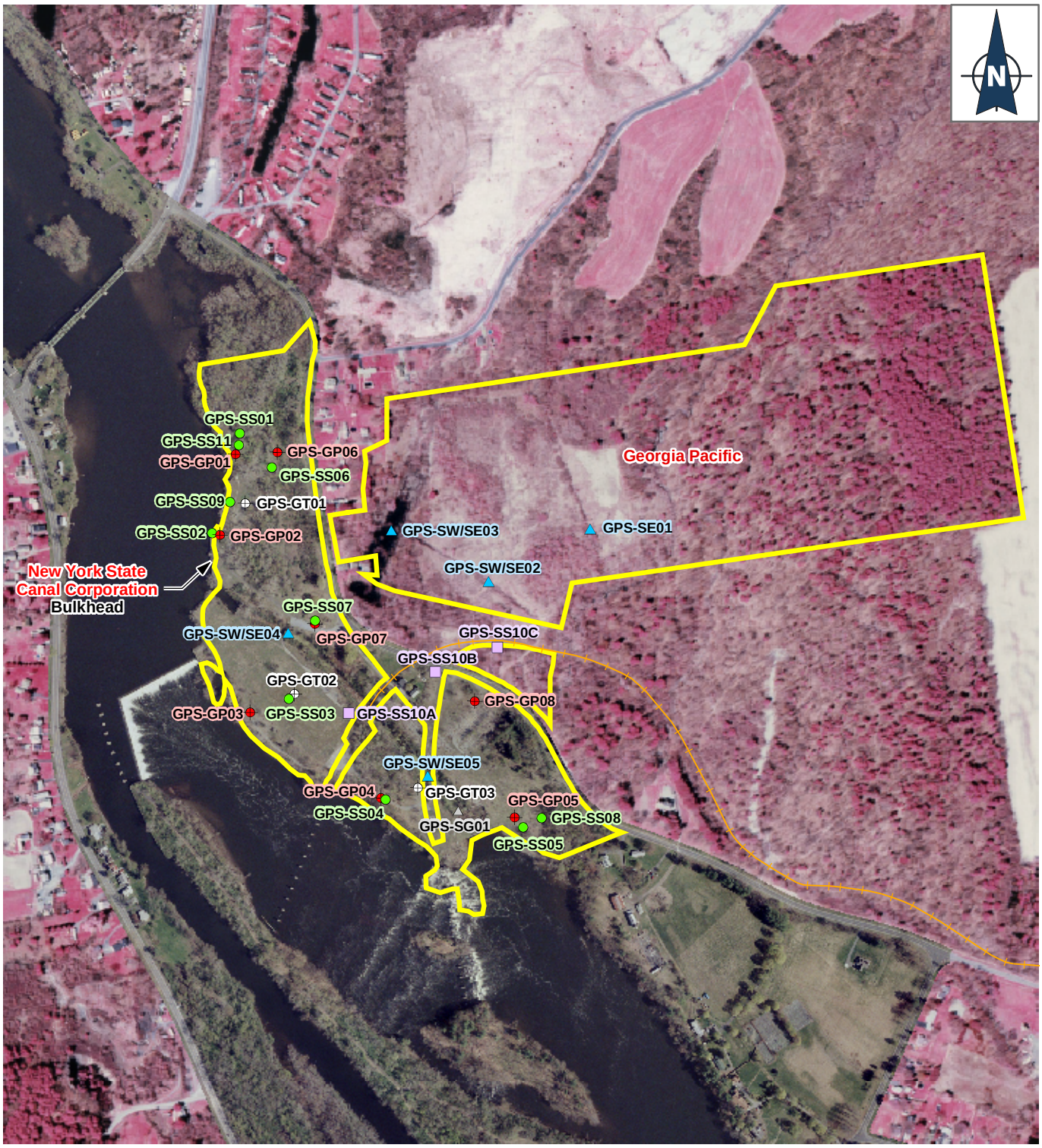
The environmental investigations at this site included collecting eleven surface soil samples, four surface water samples, five sediment samples, eight subsurface

soil samples, eight groundwater samples from newly installed temporary monitoring wells, geotechnical soil testing at three locations, and the installation of one stream gauge for hydrologic monitoring purposes (see Figure 3.2.3-2).

The only parameters that exceeded screening criteria included one volatile organic compound (VOC) (acetone) in subsurface soil (GPS-GP01) in the northern drum disposal area; 4-nitrophenol in one surface soil (GPS-SS07) near the site entrance; PAHs in several of the surface soils and one subsurface soil sample (GPS-GP05) in a slag-fill area; PCBs in surface water from the former power canal; and various metals in all sampled media. In addition to these compounds, concentrations of various other compounds without screening criteria were detected above screening levels: one VOC (methyl acetate) in the former power canal sediments (GPS-SE04 and -SE05); SVOCs in surface and subsurface soils, sediment, and groundwater; pesticides in several surface soil samples; and one herbicide in the surface soil composite along the rail spur (GPS-SS10). The acetone detection was in the subsurface soil sample near the drum disposal areas. Although low concentrations of acetone are typically considered laboratory artifacts, the level of acetone in the subsurface soil sample (520 µg/kg [J]) is much higher then typical artifact levels (5 to 10 µg/kg). However, there is no direct evidence linking the acetone to the empty drums. PAHs are typically associated with incomplete combustion of hydrocarbons and are common in urban and industrial areas. The site contained numerous areas of fill material and, in some instances, slag. Therefore, the presence of these compounds is probably not attributable to any specific disposal activities but to the fill itself. The presence of PCBs in the former power canal surface water is not unexpected due to its historic connection with the Hudson River. The PCBs detected in the surface water could be the result of suspended sediment in the sample. PCBs were detected in the sediment at levels below sediment screening criteria. The presence of metals above screening levels is discussed below.

Most metals are naturally occurring in soil/sediment and surface water/groundwater. Therefore, many of the exceedances are not of concern. In general, the levels of metals in GPS-SS01 (drum disposal area), -SS05 (slag-fill area), -SS08 (paper-waste/slag-fill area), and -SS09 (former mill area) were noticeably higher then overall site background levels. Also, of the metals that exceeded the NYSDEC TAGM guidance values, most of these exceedances were within two to three times the eastern U.S. background levels, except for cadmium levels in GPS-SS08 and zinc levels in GPS-SS01, -SS05, -SS08, and -SS11, which were much higher than overall site levels. Therefore, it appears that levels of cadmium and zinc are from the various fill materials and are not representative of background conditions. The levels of the metals exceeding criteria in the subsurface soils are similar to the overall surface soil levels. Thus, there does not appear to be significant impact on the subsurface soils tested. The metals exceeding criteria in surface water (iron and mercury) and groundwater (iron, magnesium,

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Geoprobe Soil Boring
- Geoprobe Soil Boring & Temporary Well
- Geoprobe & Geotechnical Boring
- Geotechnical Boring
- Surface Soil
- Soil Sample Adjacent to Railroad
- Surface Water / Sediment
- Stream Gauge
- Railroads
- Potential Site Boundary

Hudson River
PCBs SUPERFUND SITE

Figure 3.2.3-2
Sample Locations
Georgia Pacific / New York State Canal Corporation

500 250 0 500 1,000 1,500
Feet

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manganese, and sodium) are very common, naturally occurring metals (with the exception of mercury) often detected above criteria and are therefore not of concern. The levels of mercury slightly exceeded criteria in the surface water samples from the former power canal, which may be due to the high turbidity of the samples. The sediment from one of the former power canal samples contained lead above the severe-effect level.

The fill materials scattered throughout the site and the surface water and sediment within the former power canal contained elevated levels of contaminants expected to be present at this former industrial site (i.e., PAHs, pesticides, and metals). The source of the acetone in the subsurface soil near the drum disposal area is inconclusive because acetone was not detected in the surface soils adjacent to the drums.

The environmental conditions at this site are typical of industrial sites and do not appear to represent significant environmental limitations that would affect the construction and operation of a sediment processing/transfer facility. However, due to the varying nature of the fill materials and the presence of a landfill, land farm, and drums, additional characterization may be needed.

3.2.3.3 Geotechnical Assessment

Subsurface soil investigation locations were selected to provide general coverage of the site. Additionally, locations were selected based on the possible presence of fill in areas that may be used to construct the sediment processing/transfer facility. Figure 3.2.3-2 shows the locations of three geotechnical boreholes, GPS-GT01 through GPS-GT03, installed during this study. At each boring location a continuous vertical profile was developed from ground surface to a depth of approximately 26 feet BGS in 2-foot increments. In addition to the geotechnical borings, subsurface geology was also investigated at eight other locations (GPS-GP01 through GPS-GP08) during subsurface environmental soil investigations. These soil investigation activities were conducted using DPT; a 4-foot soil collection interval was used to collect a continuous soil profile from the ground surface to approximately 25 feet BGS.

The geotechnical and DPT subsurface soil data indicated that site overburden soils vary considerably across the site. Site SPT n-values ranged from 0 to 15, indicating that the density of granular soils is loose to moderately dense, and the consistency of cohesive soils are soft to very soft.

The site soil investigation indicated that a fill area containing ash, cinders, and wood fragments exists at the northwest site corner, adjacent to the Hudson River. Fill thickness varies from 5.5 feet near the northwest site corner to 8 feet thick farther to the south. Clay and silts, underlain by sands and silty sands, underlie the northern part of the fill area. This clay consistency is soft to very soft, based on SPT n-values of 3 or less. Very fine to coarse sands and gravels underlie the fill area farther to the south. Sandy silts and silty sands are found inland, off the fill

area. Beneath the northern landfill area, alternating silty sand, clayey silt, and silty clay overlie clay. In the middle of the northern end of the site, weathered shale was identified at split spoon refusal at a depth of 21 feet BGS.

A cinder/concrete fill area located in the central part of the site extends to a depth of approximately 3.5 feet BGS and is underlain by silts and very fine sands and silty sands. An ash-rich fill extending to a depth of approximately 9 feet BGS lies in the western portion of the site; silt and sandy gravel underlie this ash fill. The density of this granular matrix is classified as loose, based on SPT n-values of 5 and 6. Further inland, a sand/silt mixture extends to a depth of approximately 14 feet BGS. Auger refusal was encountered just below this depth in the borehole.

South of the former railroad spur, silt and gravel are underlain by sands, sandy gravels, and silty gravels to a depth of 22 feet BGS along the Hudson River. Shale was identified at split-spoon refusal at a depth of approximately 18 feet BGS further inland. Near County Route 113, a 2.5 foot-thick fill layer was found overlying a thin clay layer. Fill thickness increases to 14 feet at the southernmost part of the site, next to the Hudson River. The fill was underlain by silts and sands, which extend to a depth of at least 25 feet at the southwestern site tip. These granular soils are moderately dense, based on SPT n-values of 7 to 15 recorded during drilling near the western part of the abandoned railroad spur.

Site investigation data published by Apex Environmental (2000) indicated bedrock was encountered at a depth of about 22 feet BGS at the southwestern corner of the site, adjacent to the Hudson River. At the northern end, they indicated bedrock at depths of 13 to 16 feet.

The geotechnical conditions detected at this site do not appear to represent significant potential geotechnical limitations that would affect the construction and operation of a sediment processing/transfer facility. However, due to the presence of fill materials and piling foundations, an extensive roadway sub-base may be warranted.

3.2.3.4 Utility Assessment

No major utilities were identified on the Georgia Pacific site. Overhead electrical power lines are located along County Route 113, which is next to the site.

The utility assessment findings do not appear to represent significant limitations that would affect the construction and operation of a sediment processing/transfer facility. However, it is expected that utilities will be further evaluated during design.

3.2.3.5 Archaeological and Architectural Investigations

Preliminary Archaeological Assessment

Based on the background research performed during the PCS evaluation phase, the Georgia Pacific/NYSCC site was considered to have a high potential for archaeological resources. The Phase IB Survey confirmed the preliminary assessment.

Archaeological Investigation

The fieldwork was conducted on the Georgia Pacific/NYSCC site between October 11 and October 28, 2003 (see Figure 3.2.3-3). Field investigation efforts focused on the areas within the site that were expected to be used. The RD Team had identified an area to be excluded from the investigation on the east side of County Route 113 where the area is highly wooded and steeply sloped. During initial archaeological investigations and the excavation of the shovel test pits, the field crew encountered a possible textile membrane just below the surface on the parcel east of County Route 113 that had been used as a landfill. Based on the presence of the landfill and uncertainty associated with the limits of the landfill, field investigations within that area were terminated. It is not likely that further archaeological investigation will be recommended east of County Route 113 because of the presence of the landfill and excluded area.

No prehistoric sites were found at this site. It does contain, however, a large industrial archaeological site dating to the late nineteenth or early twentieth century consisting of the remains of former paper mills, a hydroelectric power plant, a sluiceway with two bridges, worker quarters, a docking facility, a parking lot, an old roadbed, and an inter-urban railway. This complex appears to be functionally related to a dam spanning the Hudson River. These structures occupy the west central and southwestern portion of the FCS. These archaeological resources potentially constitute a historic district eligible for NRHP listing.

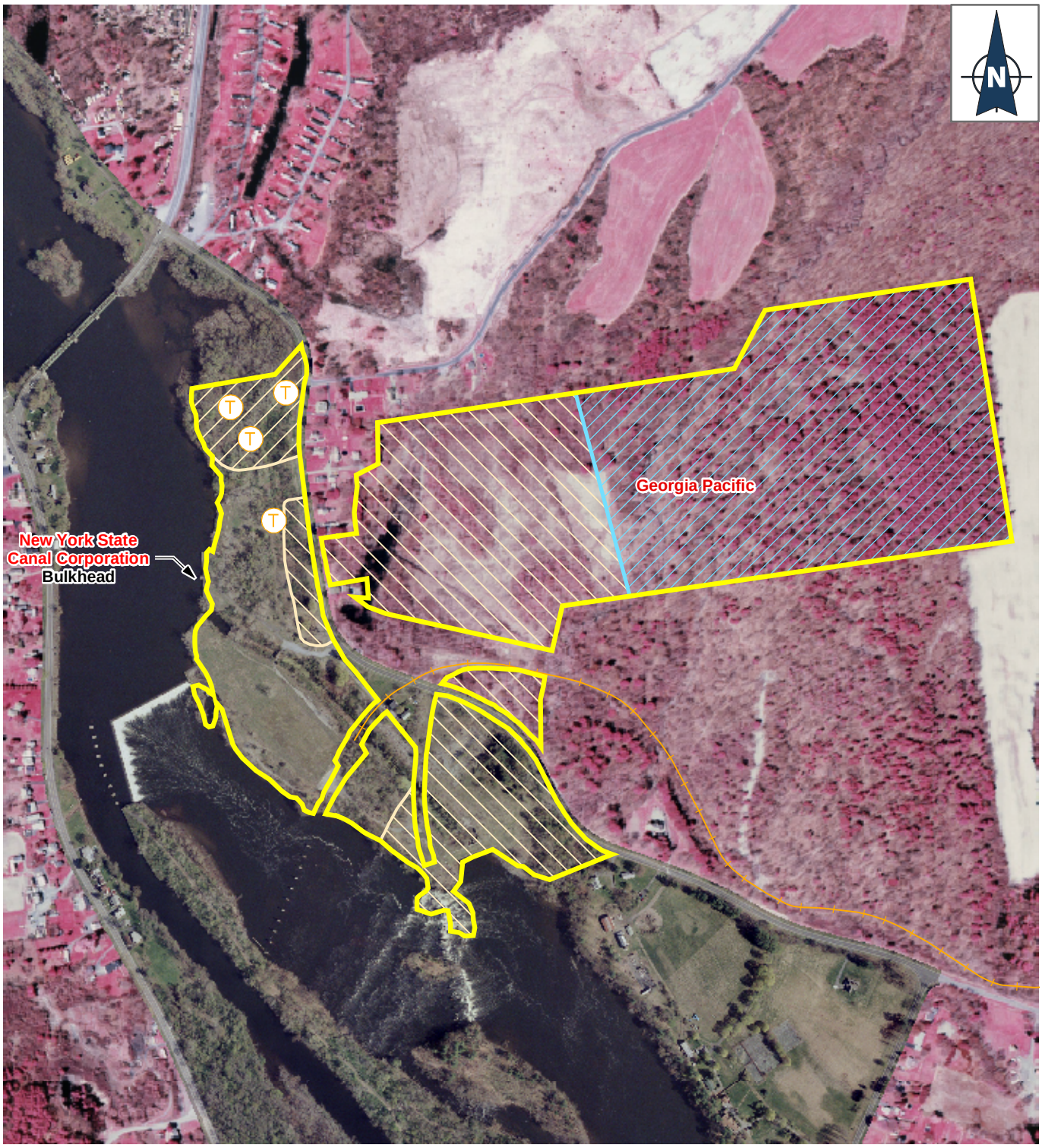
Geomorphological Investigation

This investigation was conducted on October 14, 16, and 20, 2003. Four backhoe trenches were excavated totaling 25 meters in length. Three trenches did not yield cultural features or artifacts. One trench revealed train tracks at a depth of 30 centimeters.

Architectural Assessment

Fieldwork was conducted during July 2003 and on October 14, 2003. Structures more than 50 years of age within the site include a relict hydroelectric power canal running through the western portion of the property, a docking and loading facility, and the remains of a stone bridge and sluiceway. Ruins associated with several early to mid-twentieth century paper mills, including a brick and stone wall and cut stone foundation located at the northern end of the sluiceway, are found within the western portion of the project area. These resources are described in the archaeological section above.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Potential Site Boundary
- Potential Excluded Area

Archaeological Testing Method

- Backhoe Test
- Shovel Test
- Backhoe & Shovel Test
- (T) Backhoe Trench Locations

[1] Limited Shovel Testing in Area of Former Landfill

Hudson River PCBs SUPERFUND SITE

Figure 3.2.3-3
Field Sampling Areas[1]
Phase I B Cultural Resources Investigation
Georgia Pacific / NYS Canal Corporation

500 250 0 500 1,000 1,500
Feet

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The proposed facility may have a visual effect on several potentially eligible pre-1950 structures across the river. These include residences and an intact nineteenth-century farm complex consisting of a farmhouse and numerous outbuildings. Also within the viewshed from the site is the Route 4 Bridge, a potentially NRHP-eligible steel-truss bridge.

If this site were to be selected for Phase 1 or Phase 2 dredging and avoidance is not feasible, extensive cultural resource investigations will be required. These may include:

- Phase II evaluation of historic ruins to assess NRHP eligibility.
- Phase III mitigation (if determined eligible).
- NRHP eligibility evaluation of historic Hudson River landscape and the nineteenth-century farm complex.
- NRHP eligibility evaluation of the steel-truss bridge.
- Backhoe testing west of County Route 113 to investigate the historic industrial complex.

It is not likely that further archaeological investigation will be recommended east of County Route 113 because of the presence of the landfill and the excluded area.

Cultural resources may impose limitations on construction and operation of a sediment processing/transfer facility. However, avoidance of these resources through the facility design is recommended.

3.2.3.6 Wetland Assessment

Wetland determinations and delineations of the Georgia Pacific/ NYSCC site took place on September 19 and October 8, 2003. Determination and delineation activities were limited to those areas previously identified through data review and previous site reconnaissance efforts as potential wetlands.

Review of NWI wetland mapping indicated the site contains approximately 3.2 acres of wetlands. Although NWI wetland maps identify the river along the shoreline of the site as a lacustrine wetland, sample plots and determinations did not extend into the river. NYSDEC wetland mapping indicated that no NYSDEC wetlands were previously identified on the site.

The Washington County Soil Survey was reviewed to determine the soil types mapped on this site (U.S. Department of Agriculture 1974). The mapped soil types within the site boundaries are Hudson silt loam, Hudson soil steep and very steep, Rhinebeck silt loam, fluvaquents, and Madalin silty clay loam.

The Georgia Pacific/NYSCC site can be divided into eastern (or inland) and western (or riverside) parcels. A canal formerly used for hydroelectric power generation was identified along the eastern edge of the riverside tracts. Though retaining water, presumably from runoff, this canal is currently blocked off from the river.

Results of the Wetland Assessment

Field determination procedures resulted in the delineation of three wetland areas encompassing approximately 6.54 acres (see Table 3.2.3-1 and Figure 3.2.3-4). Topographic variability, position within the landscape, proximity to the river, and prior disturbance (i.e., filling, dumping) activities are the predominant factors influencing the extent of wetland boundaries on-site. The results of the field investigations represent an increase in the overall acreage of wetlands compared to the NWI mapping. However, NWI mapping primarily uses remote sensing techniques (i.e., photo interpretation) without field confirmation and therefore does not necessarily represent an accurate description of on-site conditions. Rather, the mapping is a basis for further investigation.

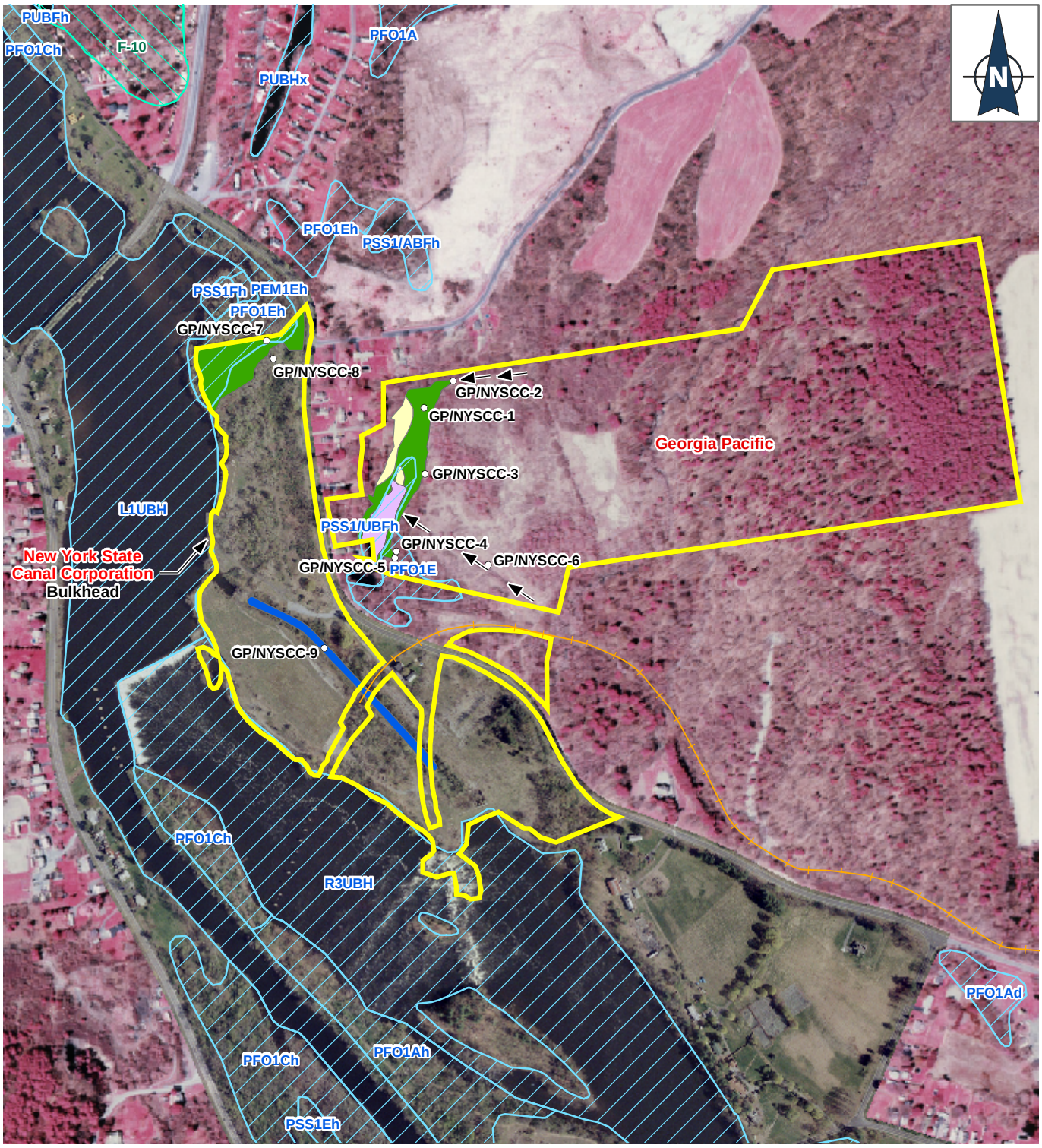
Table 3.2.3-1 Georgia Pacific/NYSCC Wetland Delineation Summary

Community Type	Acreage
Forested/Emergent/Scrub-Shrub/Unconsolidated Bottom	3.37
Forested	2.08
Emergent/ Unconsolidated Bottom	1.09
Total Acreage	**6.54**

Predominant species within the wetland area include green ash (*Fraxinus pennsylvanica*), silver maple (*Acer saccharinum*), northern cottonwood (*Populus deltoides*), sensitive fern (*Onoclea sensibilis*), spotted jewelweed (*Impatiens capensis*), marshpepper smartweed (*Polygonum hydropiper*), false nettle (*Boehmeria cylindrica*), *Carex* spp., arrow-leaf tearthumb (*Polygonum sagittatum*), broad-leaf cattail (*Typha latifolia*), reed canary grass (*Phalaris arundinacea*), woolgrass (*Scirpus cyperinus*), rice cutgrass (*Leersia oryzoides*), *Osmunda* spp., *Solidago* spp., buttonbush (*Cephalanthus occidentalis*), purple loosestrife (*Lythrum salicaria).*

Field observations indicated the presence of aquatic bed wetland areas within the river channel to the west and north of the forested wetland. However, delineation procedures did not involve mapping and boundary identification of wetlands within the river channel.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- NYS DEC Mapping
- National Wetland Inventory Mapping

Delineated Wetlands

- Emergent
- Open Water / Emergent / Scrub-Shrub
- Forested
- Open Water / Emergent
- Observation Plots
- Direction of Drainage Flow

Hudson River
PCBs SUPERFUND SITE

Figure 3.2.3-4
Wetland Locations
Georgia Pacific / New York State Canal Corporation

500 250 0 500 1,000 1,500
Feet

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The wetland assessment findings do not appear to represent potential significant limitations that would affect the construction and operation of a sediment processing/transfer facility. Avoidance and minimization of impact, where practicable, should be practiced during the design process.

3.2.3.7 Floodplain Assessment

An initial floodplain assessment was conducted on the Georgia Pacific/NYSCC site in order to determine the presence, extent, and orientation of FEMA-mapped floodplains within site boundaries. Flood magnitudes and historic river stages from gauging stations as close as available to the site were examined to obtain an initial sense of the characteristics of on-site flooding.

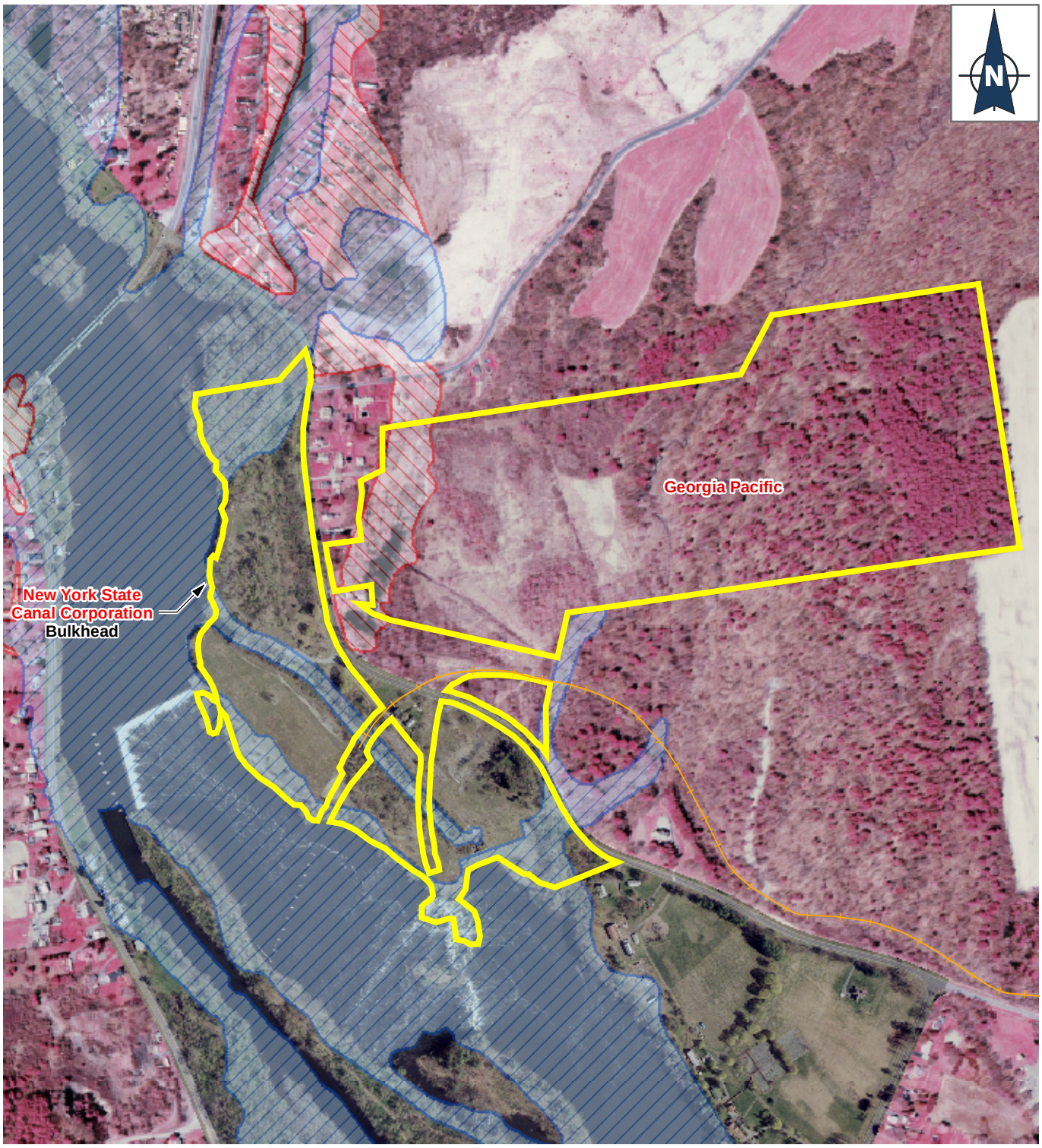
Figure 3.2.3-5 shows that portions of the Georgia Pacific/NYSCC site are located within the 100-year and 500-year floodplains. The site is located on the east side of the Hudson River in the Town of Greenwich and comprises several non-contiguous land parcels. The FEMA mapping indicates that the floodplain is located in several distinct locations within the riverside parcels, rather than a broad continuous floodplain. Approximately 11.3% (13.8 acres) of the total area of the site is within the 100-year floodplain and approximately 19 acres (15% of the total site area) are within the 500-year floodplain.

Areas within the 100-year floodplain include locations directly adjacent to the river and downstream of the Northumberland Dam (formerly the Thomson Dam); an area to the north end of the site near Thomson Road; a narrow, low-lying strip of land (i.e., the relict hydropower sluiceway associated with the former paper mill operations); and land adjacent to a tributary on the southeast corner of the site.

The closest upstream gauge station is in Fort Edward, approximately 11 miles upstream of the site; the Stillwater gauge station is approximately 14 miles downstream of the site. Flood magnitudes were calculated using statistical methods from the 26 years of flow data at the Fort Edward and Stillwater gauge stations after the Fort Edward dam was removed. While two 10-year floods have occurred at each station during the 26-year recorded history, no 100-year floods have occurred.

Historic water-level data (1916 to 2000) are also available from NYSCC Lock 5. Lock 5 is less than 1 mile downstream of the site and is separated from the main channel of the Hudson River as a bypass of the Northumberland Dam. Lock 5 water-level data is likely to be comparable to water-level data for the northern portion of the site because of similar water-stage characteristics. Lock 5 water-level data is not comparable to water-level data for the southern portion of the site because the water levels are different due to the fall in elevation below Northumberland Dam. No 100-year flood events were recorded at NYSCC Lock 5 from 1916 to 2000.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Potential Site Boundary
- Tax Parcels

FEMA Floodplain

- 100 Year Floodplain
- 500 Year Floodplain

Hudson River
PCBs SUPERFUND SITE

Figure 3.2.3-5
FEMA Floodplain Mapping
Georgia Pacific / New York State Canal Corporation

500 250 0 500 1,000 1,500
Feet

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The elevations of the site were reviewed using contour information and aerial photography to determine an approximation of how a 100-year flood would affect the site. It was determined that, in the event of a 100-year flood, the area in the northern portion of the site would be under approximately 8 feet of water.

While the probability of an 8-foot inundation event (100-year flood) is remote, the NYSCC water level data on the upstream side of Lock 5 provide evidence that flooding on a smaller scale likely occurs almost annually at this site. Based on calculations of an average stage level using the maximum river stage at Lock 5 for the available time period (1916 to 2000), the northern shoreline boundary would have been under approximately 6 feet of water during the maximum high water level on December 16, 1918 and under an average of 3.7 feet of water during each year's maximum flow. Site observations suggested that flooding does occur with some regularity within the forested area at the northern extreme of the site boundary.

The floodplain assessment findings do not appear to represent potential significant limitations that would greatly affect the use of the site for a sediment processing/transfer facility.

3.2.3.8 Coastal Management Area Assessment

The Georgia Pacific/NYSCC site is not located in the state-designated coastal zone. Therefore no direct impacts are expected as a result of the potential use of this site. EPA will prepare an additional phase of its coastal zone consistency assessment and subsequent coastal zone consistency determination, covering potential indirect and cumulative impacts from the operation of sediment processing/transfer facilities, once the Phase 1 and Phase 2 dredging facility locations are selected.

3.2.3.9 Baseline Habitat and Threatened and Endangered Species Assessment

Site Habitat Description

The site is situated on the east side of the river, encompassing areas both above and below the Northumberland Dam. This site was formerly a paper mill site and has been disturbed by past industrial uses, including the construction of a landfill (eastern parcel) and the use of certain areas for land farming. These disturbances have greatly influenced the availability, extent, and diversity of on-site habitats. The former paper mill facilities have been removed, except for some concrete foundations. The site contains a bulkhead on the northern end, which is still occasionally used by NYSCC. Habitats largely comprise mid-successional (20 to 60 years) vegetation communities across the site. Several areas of late successional communities (greater than 60 years) are along the northern shoreline, and early successional communities are in some of the areas that formerly were developed for industrial purposes.

Using *Ecological Communities of New York State* (Edinger et al. 2002) as a framework for habitat identification, nineteen community types were found on this 71-acre site (see Figure 3.2.3-6). No sensitive or rare habitats were among them. The dominant community type on this site is a successional northern hardwood community that accounts for 46% of the site. Other communities include successional old field, successional shrubland, Appalachian oak-hickory forest, small pine/spruce plantations, and Appalachian oak pine. In addition, a portion along the southern end has remnant concrete foundations of exterior rural structures and a remnant canal traverses the waterfront parcels.

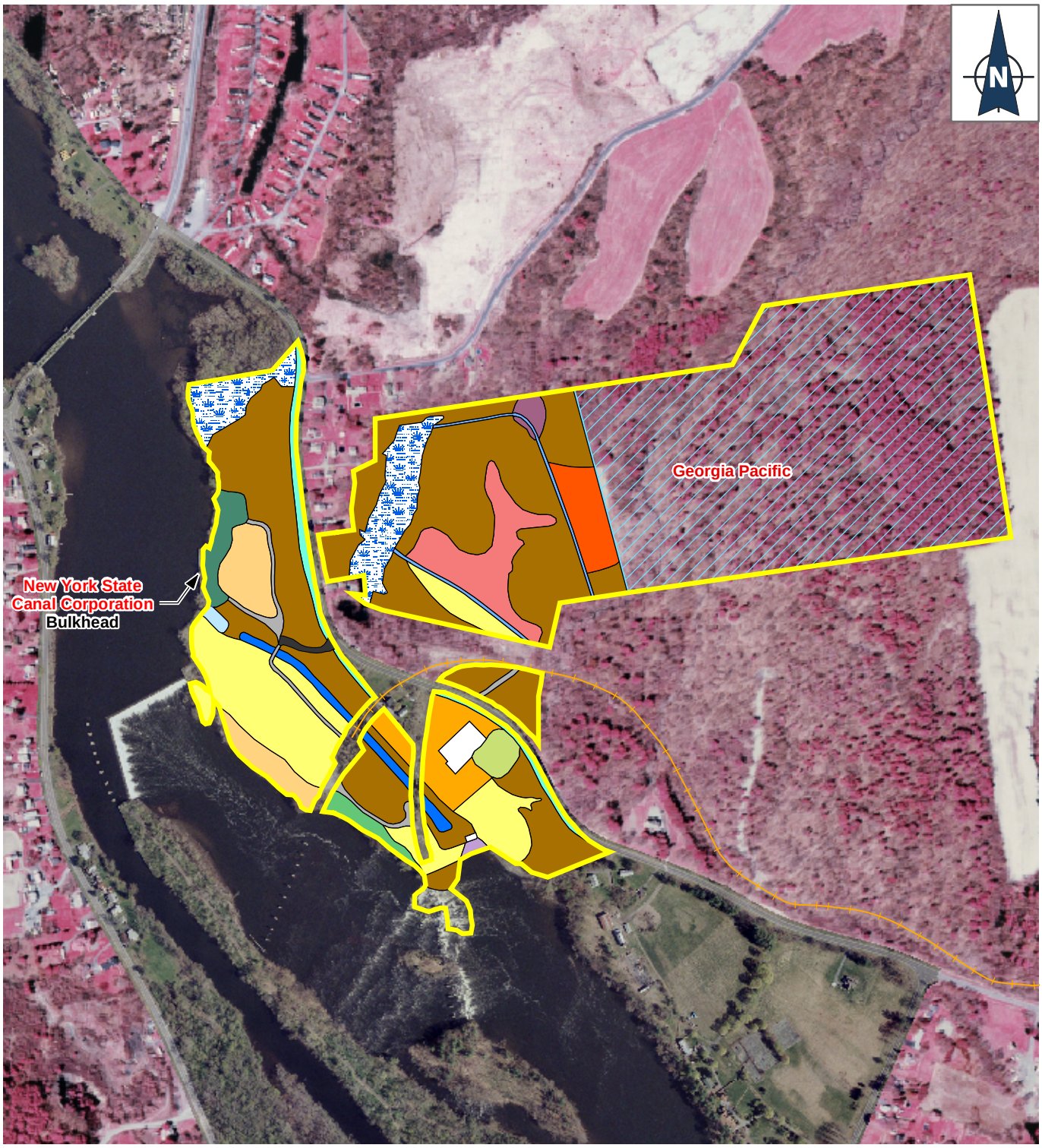
Aquatic communities on-site include backwater slough and canal. The large wetland complex within the eastern portion of the site may exhibit aquatic community functions due to the relative permanence of water within the complex. (Wetland communities are discussed in Section 3.2.3.6 above.) The backwater slough is a shallow bay, which is connected to the Hudson River. The canal exhibited characteristics of an emergent wetland and was covered with duckweed at the time of the field visit.

The northern Hudson River shoreline portion of the site is characterized by a shallow, sand/gravel substrate-dominated shoreline with shallow water depths extending out past 10 yards. Mussel shells and live mussels were observed along the northern shoreline, above the dam. Mature trees extend to the shoreline and some root systems protrude out into the river. The bulkhead portions of the shoreline are either deep (greater than 6 feet) off the shoreline or have exposed bedrock extending to a silty, mucky substrate. The areas in the vicinity of the bulkheads are actively influenced by man and contain mowed lawn and unpaved road.

The site also contains a subterranean community type in the terrestrial cultural subsystem. The mine/artificial community is located at the south edge of the site at the base of the brick retaining wall. The artificial cave appears to be a remnant of a former hydropower plant outfall to the Hudson River. The base of the artificial cave is at the level of the Hudson River. The cave dimensions are approximately 18 feet in width and more than 200 feet in length. No signs of bat use were apparent. The cave walls and ceilings have numerous small compartments and ledges for roosting areas, but daylight extends into more than half of the cave, which may prohibit use by bats. Several pigeons were observed roosting in the cave.

Common vegetation species and the community structure of the site influence wildlife occurrences. The availability of forested, shrubland, and old field communities provides a diverse habitat for wildlife species. Incidental wildlife observations included whitetail deer, raccoon, eastern gray squirrel, tree frog, green frog, eastern phoebe, song sparrow, mallard, gray catbird, yellow warbler, pigeon, blue jay, sand piper, green heron, and great blue heron.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



Ecological Communities

- Paved Road
- Unpaved Road
- Wetland
- Successional Northern Hardwoods (SNH)
- Successional Old Field (SOF)
- Successional Shrubland (SS)
- SNH / SS
- SOF / SS
- Appalachian Oak-Hickory Forest
- Appalachian Oak-Pine Forest
- Pine / Spruce Plantation
- Backwater Slough
- Ditch
- Canal
- Landfill
- Rural Structure Exterior
- Mine / Artificial Cave Community
- Mowed Roadside / Pathway
- Mowed Roadside
- Potential Excluded Area

Hudson River PCBs SUPERFUND SITE

Figure 3.2.3-6
Site Ecological Communities
Georgia Pacific /
New York State Canal Corporation

500 250 0 500 1,000 Feet

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Endangered Species Act Issues

Correspondence with the USFWS and NYSDEC indicate no threatened or endangered species issues are associated with this site. Wintering bald eagles may migrate through the area but are not known to use the site. A biological assessment will be prepared to examine the potential impacts associated with the construction and operation of a sediment processing/transfer facility for each of the Suitable Sites.

The baseline habitat and endangered species assessments findings do not appear to represent potential significant limitations that would affect the construction and operation of a sediment processing/transfer facility.

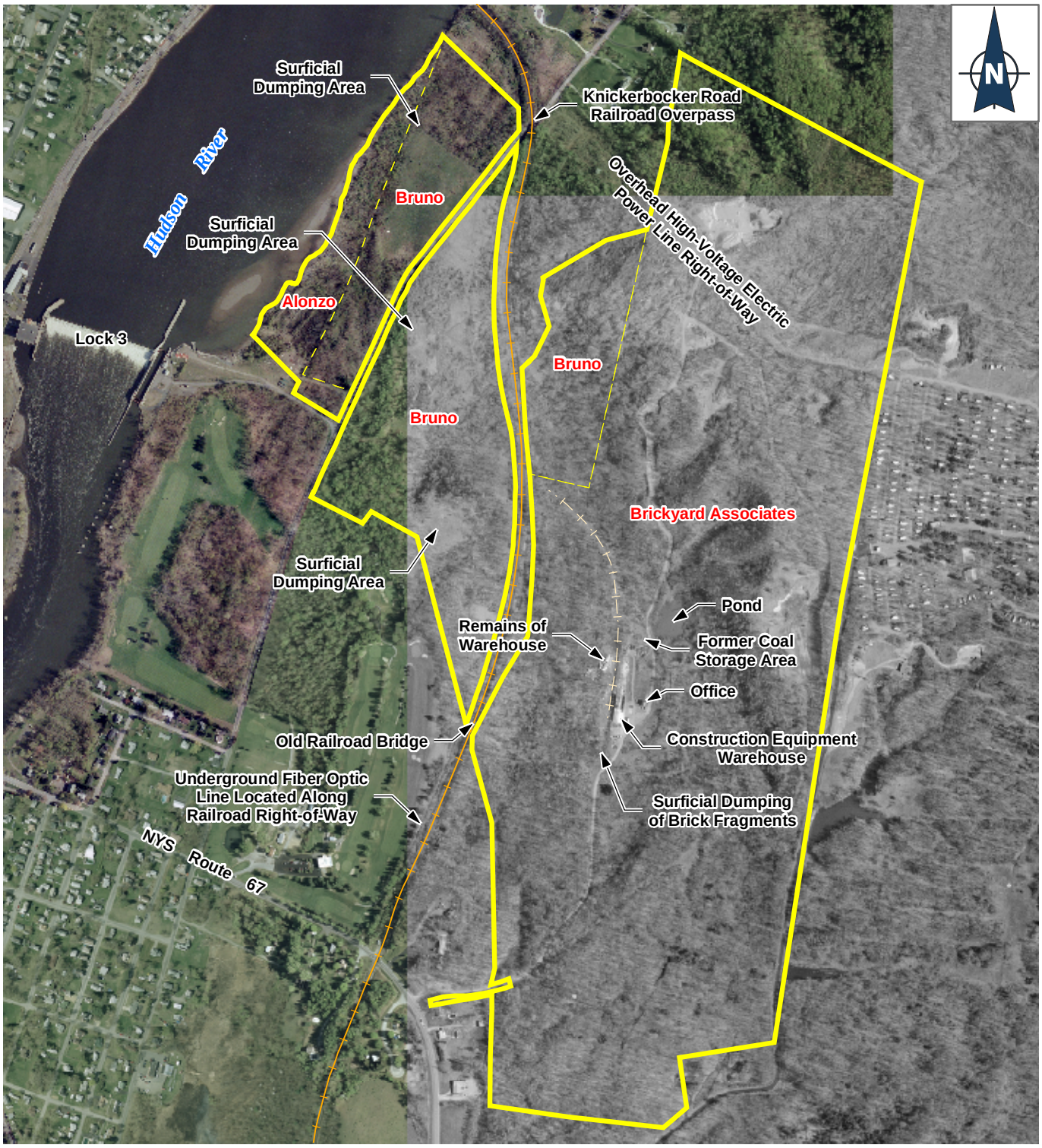
3.2.4 Bruno/Brickyard Associates/Alonzo

3.2.4.1 Phase I ESA

The Bruno property was reportedly farmed until several years ago. It is currently not used. The Alonzo property appears to have historically been undeveloped. The Brickyard Associates parcel is a former brick manufacturing facility. According to a conversation with the site representative during the site inspection on June 25, 2003, the owners reportedly currently hold a mining permit. Key features are presented on Figure 3.2.4-1.

The Bruno parcel is owned by a private citizen and consists of three mostly wooded areas characterized by a relatively moderate west-to-east incline throughout, no river frontage, and an abutting railroad right-of-way. It is not currently developed. One area is west of Knickerbocker Road, and the other two are east of Knickerbocker Road. No structures were observed. Two dirt roads lead into the central portion of the property; the western and eastern portions do not contain roads. While the westernmost parcel contains scrub vegetation and grassland, forestland with minor scrub vegetation dominates the central and eastern parts. Surrounding property uses include a golf course (the Mechanicville Golf Club, Inc.) to the southwest and residential property to the north along Knickerbocker Road. Land use along the west side of the Hudson River is primarily commercial and industrial, with residential use dominating further inland to the west. A former clay mining and brick manufacturing operation is located to the east; that site now houses a construction company. A campground is located farther to the northeast. Land use within 1 mile includes minor agricultural, some small businesses, and extensive woodlands. Within 1 mile west of the river, land use is primarily residential with some industrial and commercial uses and open space to the far west. According to the property representative, a depression on the southern side of the central parcel has historically been used for occasional surface dumping of solid household wastes. Several other small dumping areas were observed on the central parcel hill slope, including small piles of waste concrete located in an area devoid of trees near the south-central part of the northern parcel. In addition, another surficial dumping area covers approximately 100 square feet near the northwestern corner of the westernmost area. Other than the surficial dumping, the

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Approximate Site Boundary
- Tax Parcel Boundary
- Active Railroad
- Abandoned Railroad

Hudson River PCBs SUPERFUND SITE

Figure 3.2.4-1
Key Site Features
Bruno / Brickyard Associates / Alonzo

500 250 0 500 1,000 1,500
Feet

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property representative stated he is not aware of any other fill being brought to the site. Reportedly, no hazardous materials are stored on-site.

The Brickyard Associates parcel is a mostly wooded parcel characterized by extreme topographic relief, no river frontage, an abandoned railroad siding, and extensive railroad right-of-way frontage. A partially paved access road leads into the former brick manufacturing site from a residential area, with light commercial use dispersed along Route 67. There are two buildings on the property: one brick building is intact and serves as an office building for HMA Contracting Corporation (a construction company); the other building is partially intact and is used for equipment storage and repair. Additional structures include the former end of the sheet metal storage building, the former brick kiln (destroyed in a 1957 fire), two small (15 feet by 6 feet) demolished buildings, and two leased double-walled, transportable aboveground storage tanks (ASTs). A number of small borrow pits scattered across the property are still periodically used. Each pit is less than 1 acre in size and they total about 3 acres. According to the Draft Environmental Impact Statement (EIS) for the mining permit (C.T. Male Associates, P.C. 1989) almost no topsoil exists across the parcel, and the soils to a large extent reflect glaciolacustrine sediments. Surficial soils consist of clay-rich soil throughout most of the site, with sand and silt deposits. A thin layer (6-inch maximum) of silty organic loam covers some areas. An existing railroad bridge with a dirt road underpass is near the southwest corner, near the midpoint of the western site boundary. The elevation difference between the site and the waterfront is approximately 80 feet. There are woodlands to the west and north boundaries of the property. In addition, there is a railroad along one part of the western side, residential property at the northwest and southwest corners, open space to the southeast and east, and a campground to the east. Light commercial uses, a golf course, and some industrial land uses are within 1 mile of the site.

The Alonzo property is currently undeveloped. The property consists of a mixture of wooded and open areas paralleling the Hudson River. The topography is very gently sloping, toward the Hudson River to the west. No structures are located on the parcel. The site is bordered on the northwest by the Hudson River and on the southeast by the Bruno parcel.

According to the Bruno site representative, no previous site assessments have been conducted on the Bruno portion of the site. Two Phase I investigations were previously conducted on the Brickyard Associates property. The reports from these investigations have been requested, but not yet received, from the Resources Manager of William M. Larned & Sons, Inc. No groundwater monitoring wells are located on-site. In addition, the C.T. Male Associates, P.C. Draft EIS for the Brickyard Associates site in 1989 covers the impacts for mining shale, clay, sand, and gravel and the preparation of the site for construction of a brick manufacturing facility. A Supplemental Addendum to this document was produced in 1990 to address NYSDEC's concerns about noise, traffic, and stormwater impacts. C.T. Male also prepared an application for a mining permit for Spaulding Brick

Co. in 1989. There were no records available indicating an environmental investigation had been conducted at the Alonzo property.

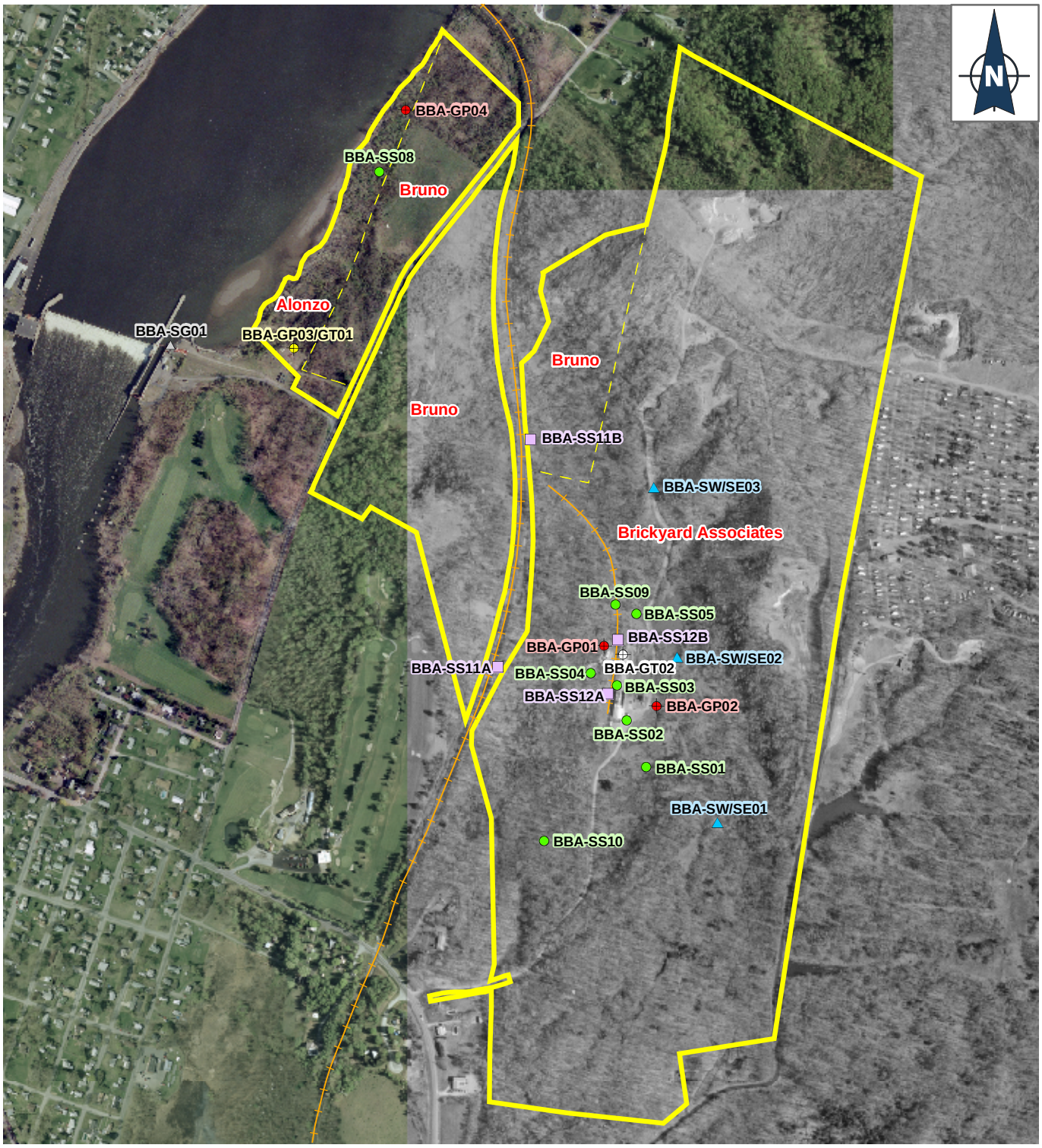
3.2.4.2 Phase II ESA

The environmental investigations at this site included collecting ten surface soil samples, three surface water/sediment samples, four subsurface soil samples, four groundwater samples from newly installed temporary monitoring wells, and geotechnical soil testing at two locations (see Figure 3.2.4-2). A stream gauge was not installed at this site because an existing gauge was located on the upstream side of Lock 3 near the southern end of the site.

The only parameters that exceeded screening criteria were PAHs in surface soil samples BBA-SS05 (former coal storage area) and BBA-SS12 (composite adjacent to rail spur) and in one groundwater sample (BBA-GP01); bis(2-ethylhexyl) phthalate in one groundwater sample (BBA-GP02); and various metals in the sampled media. In addition to these compounds, levels of various other compounds were detected above screening levels: one VOC (isopropylbenzene) in surface soil samples BBA-SS02 (adjacent to the fuel ASTs) and BBA-SS11 (composite adjacent to rail line); several semi-volatile organic compounds (SVOCs) (benzaldehyde, caprolactam, and carbazole) in surface soil samples BBA-SS01 (adjacent to a scrap metal area), BBA-SS05 (former coal storage area), BBA-SS10 (undisturbed wooded area), and BBA-SS12 (composite adjacent to rail spur); and one PAH (benzo[g,h,i]perylene) in upstream sediment sample BBA-SE01. PAHs are typically associated with incomplete combustion of hydrocarbons and are common in urban and industrial areas. Therefore, the presence of these compounds is not likely attributable to disposal activities. The PAHs detected in the groundwater could be due to interference from high turbidity of the sample. The isopropylbenzene is likely attributable to minor spills of fuel next to the ASTs. Due to the limited contamination detected at this location, the presence of these compounds is not anticipated to indicate the presence of significant contamination. The remaining SVOCs are typical of industrial sites and are not anticipated to represent specific disposal practices. The presence of metals above screening levels is discussed below.

Most metals are naturally occurring in soil/sediment and surface water/groundwater. Therefore, many of the exceedances are not of concern. In general, the levels of arsenic, cadmium, iron, magnesium, and zinc were noticeably higher then overall site levels in BBA-SS04 (demolished building area), and arsenic, iron, and zinc were slightly higher in BBA-SS01 (scrap metal area). Also, of the metals that exceeded the NYSDEC TAGM guidance values, most of these exceedances were within three times the eastern U.S. background levels, except for cadmium and zinc levels in BBA-SS04, which were five and 10 times higher than eastern U.S. background, respectively. Due to the limited number of samples collected, it is difficult to determine whether the presence of metals above screening levels are due to site activities or whether they are naturally occurring in the clay-rich soils (which typically exhibit high metals content). The metals exceeding

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Geoprobe Soil Boring
- Geoprobe Soil Boring & Temporary Well
- Geoprobe & Geotechnical Boring
- Geotechnical Boring
- Surface Soil
- Soil Sample Adjacent to Railroad
- Surface Water / Sediment
- Stream Gauge
- Railroads
- Potential Site Boundary

Hudson River
PCBs SUPERFUND SITE

Figure 3.2.4-2
Sample Locations
Bruno / Brickyard Associates / Alonzo

500 250 0 500 1,000 1,500 2,000
Feet

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criteria in the subsurface soils are at the same levels as the overall surface soil levels at the site. Thus, there does not appear to be significant impact from site activities on the subsurface soils. The metals exceeding criteria in surface water (iron) and groundwater (iron and manganese) are common, naturally occurring metals typically detected above criteria and therefore do not appear to be of concern. The sediments contained arsenic, copper, iron, and manganese slightly above the screening criteria.

The environmental conditions detected at this site are indicative of typical industrial sites and do not appear to represent significant environmental conditions that would affect the construction and operation of a sediment processing/transfer facility. However, due to the presence of various areas of dumping, additional assessments may be warranted.

3.2.4.3 Geotechnical Assessment

Subsurface soil investigation locations were selected to provide general coverage of the site. Additionally, locations were selected based on the possible location of facility operations. Geotechnical investigations were not conducted on two parcels at Bruno due to limitations on permission to conduct intrusive activities. One borehole, BBA-GT01, was installed at the southwest corner of the Alonzo property. The remaining subsurface exploration locations are positioned near the current operations buildings. Figure 3.2.4-2 shows the locations of borings BBA-GT01 and BBA-GT02.

At each geotechnical boring location, a continuous vertical soil profile was collected from the ground surface to a depth of approximately 26 feet BGS in 2-foot increments. A 2-inch outer diameter (OD) by 24-inch long split-spoon sampler was advanced through 4.25-inch inner diameter (ID) hollow stem augers to collect the samples.

In addition to the geotechnical borings, subsurface geology was also recorded at two environmental boring locations, BBA-GP01 and BBA-GP02. A 4-foot soil collection interval was used by the DPT system to collect a continuous soil profile from the surface to approximately 25 feet BGS.

Along the Hudson River shore, at the southwest corner of the site, silty sands containing a trace of gravel are present to a depth of 6 feet BGS. This soil has a loose density, based on recorded SPT n-values of 5 to 8. These deposits are underlain by approximately 9 feet of sand and silt, also of loose density, based on SPT n-values. Very fine-grained sand was encountered above refusal (anticipated shale bedrock). Refusal was encountered at a depth of about 18 feet BGS.

The collective subsurface soil data from around the site buildings indicated overburden soils consist of clay and silty clay layers interbedded with silt and sand layers. Density of the silt and sand layers is classified as loose, based on SPT n-

values of 2 to 3. Clay in the 10- to 12-foot BGS interval is stiff, based on SPT n-values of 12. Weathered shale was noted at split spoon refusal.

C.T. Male Associates, P.C. (1989) reports the site surficial geology as consisting primarily of sand, silt, and clay that reflect a glacial lake depositional setting. They note that almost no topsoil exists on-site. They also report the soil series classification of each soil group found on-site.

The geotechnical conditions detected at this site do not appear to represent significant potential geotechnical limitations that would affect the construction and operation of a sediment processing/transfer facility. However, soil types would likely necessitate deeper foundations and an extensive roadway sub-base.

3.2.4.4 Utility Assessment

Utilities identified at the Bruno/Brickyard/Alonzo site include the following:

- A high-voltage overhead electric power line right-of-way traverses the north end of the Brickyard Associates parcel. The power line right-of-way also abuts the northern end of the western Bruno parcel.

- Electric service enters the Brickyard Associates site buildings via overhead power lines located south of the site buildings.

- Level 3 Communications, Inc. operates a fiber optic cable within the railroad right-of-way located between the eastern Bruno parcel and the Brickyard Associates parcel. The fiber optic cable runs north-south.

A privately owned 6-inch water supply line traverses the southern portion of the Brickyard Associates parcel and serves an adjacent property.

The utility assessment findings do not appear to represent significant potential limitations that would affect the construction and operation of a sediment processing/transfer facility. However, it is expected that utilities will be further evaluated during design.

3.2.4.5 Archaeological and Architectural Investigations

Preliminary Archaeological Assessment

Based on the background research performed during the PCS evaluation phase, the Bruno/Brickyard Associates/Alonzo site was considered to have a high potential for archaeological resources. The Phase IB Survey confirmed the preliminary assessment.

Archaeological Investigation

Phase I fieldwork was conducted on portions of the Bruno/Brickyard Associates/Alonzo site between October 31 and November 1 and November 3 to November 5, 2003 (see Figure 3.2.4-3). A total of 56 shovel tests were excavated. No surveys were conducted on the 72-acre Bruno Property due to lack of access for intrusive field activities. The survey of the Alonzo property is complete and no further archaeological investigations are recommended.

The RD Team had identified an area to be excluded from the investigation of approximately 197 acres of the Brickyard Associates property. Within the remaining area of the Brickyard Associates property (approximately 60 acres), Phase I fieldwork was conducted on approximately 20 acres. The remaining acreage will require additional Phase IB investigations.

Three prehistoric sites were found during the Phase IB survey on the Brickyard Associates property. Artifacts found include prehistoric ceramics, lithic debitage, and fire-cracked rocks. One of these sites appears to be potentially significant.

Geomorphological Investigation

Geomorphological fieldwork was conducted on October 17, 2003. Two trenches were excavated. Neither trench held any signs of early human habitation or geomorphic features of interest.

Architectural Assessment

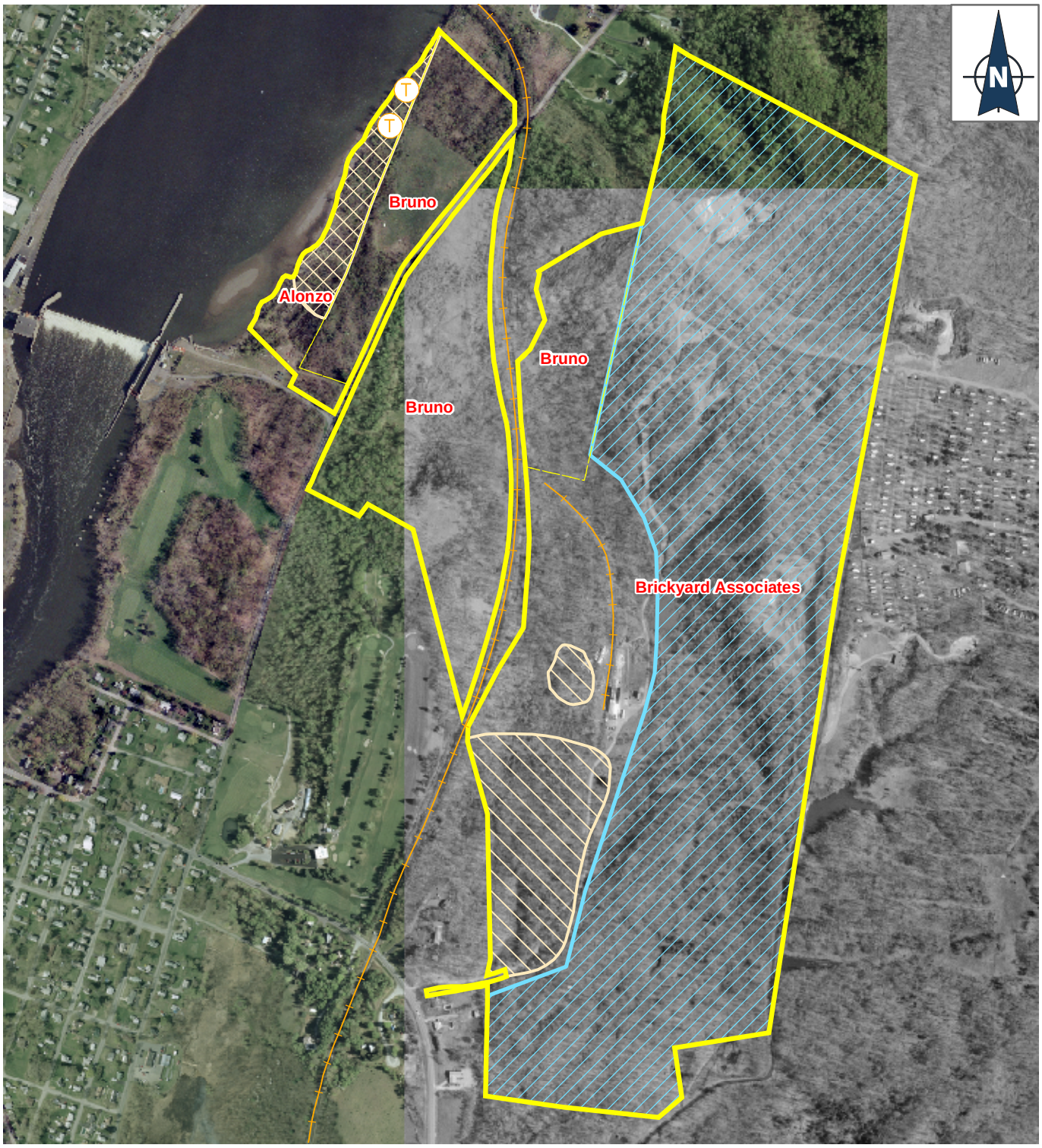
Fieldwork was conducted during July 2003. No standing structures are present within the Bruno property. The site is located in the viewshed of a number of architectural resources, including:

- National Register-listed Champlain Canal Lock No. 3,
- A series of concrete piers, apparently part of a former docking facility,
- An unidentified steel truss bridge,
- Numerous industrial and residential buildings, many of which exceed 50 years of age across the river, and
- A stone railroad trestle.

If the facility is constructed within the southern portion of the site, it may create a visual impact on this historic landscape.

The Alonzo property contains no buildings. It is situated within the viewshed of a number of the architectural resources noted above.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

Potential Site Boundary

Archaeological Testing Method

Backhoe Test

Shovel Test

Backhoe & Shovel Test

T Backhoe Trench Locations

[1] Bruno Property Not Surveyed

Hudson River PCBs SUPERFUND SITE

Figure 3.2.4-3
Field Sampling Areas[1]
Phase I B Cultural Resources Investigation
Bruno / Brickyard Associates / Alonzo

500 250 0 500 1,000 1,500 Feet

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The Brickyard Associates property contains three standing structures:

- One corrugated metal warehouse (ca. 1950; of no particular merit).
- One 2-story rectangular brick office building with Victorian influences (ca. 1880).
- One metal water tower associated with the brick manufacturing facility (ca. 1920s).

A recreational campground with few permanent structures (less than 50 years old) is next to the eastern boundary of the Brickyard Associates property. Its presence therefore presents no viewshed concerns.

In conclusion, the limitations that are posed by cultural resource issues have not been fully evaluated because the site requires additional studies. One archaeological site on the Brickyard property appears to be potentially significant and will require a Phase II evaluation. The Phase IB survey of the Brickyard property requires completion (approximately 40 acres). The office building and the tower at the Brickyard property require either avoidance or an NRHP eligibility evaluation.

Additional investigations are recommended to determine the NRHP-eligibility of structures within the viewsheds associated with Bruno and Alonzo property. Further deep testing is not recommended.

3.2.4.6 Wetland Assessment

Wetland determinations and delineations of the Bruno/Brickyard/Alonzo site took place October 14 through October 16 and on October 29, 2003. Determination and delineation activities were limited to those areas previously identified through data review and previous site reconnaissance efforts as potential wetlands.

Review of NWI wetland mapping showed the site has 13 wetland areas covering approximately 16.75 acres. Of these, 4.9 acres of NWI wetlands were mapped within the Alonzo property, 6.29 acres on the Bruno property, and 5.56 acres on the Brickyard Associates property. Although NWI wetland maps identify the shoreline along the river as lacustrine wetlands, sample plots and determinations along the shoreline did not extend into the river. Review of NYSDEC wetland mapping did not indicate the presence of any NYSDEC-identified wetlands on these properties.

The Rensselaer County Soil Survey was reviewed to determine the soil types mapped on this site (U.S. Department of Agriculture 1988). The mapped soil types within the site boundaries are Hoosic gravelly sandy loam, Hudson silt loam hilly/steep, Limerick silt loam, Madalin silt loam, Nassau-Manlius complex undulating, Nassau-Rock outcrop rolling/hilly, Rhinebeck silt loam, Raynham silt loam, Windsor loamy sand, Udorthents, and gravel pits. The Limerick, Madalin,

and Raynham soils all appear on the Rensselaer County hydric soils list. They are deep, somewhat to very poorly drained soils and indicate locations where wetlands are more likely to occur. Rhinebeck silt loam and gravel pits both are types with the potential for hydric soil inclusion (U.S. Department of Agriculture 1988).

Results of the Wetland Assessment

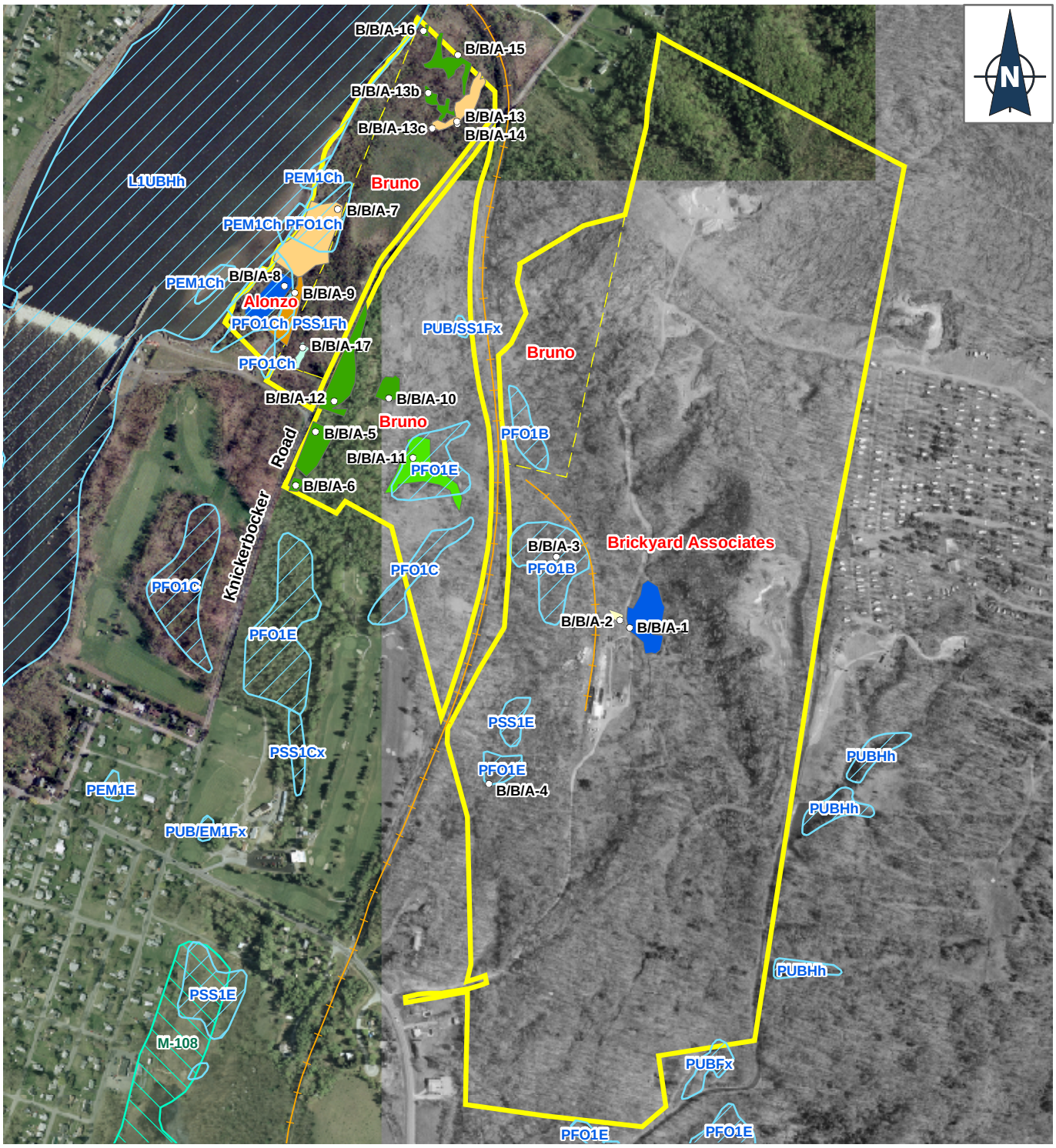
During the field delineation and determination approximately 11.93 acres of wetland were delineated within the Bruno/Brickyard/Alonzo site (see Table 3.2.4-1 and Figure 3.2.4-4). Alterations in the landscape on these two sites have occurred in the past as a result of logging, mining, and storage of excess material from the brick manufacturing facility. These changes to the landscape and topography may have caused the discrepancy between NWI mapping and the field results. However, NWI mapping primarily uses remote sensing techniques (i.e., photo interpretation) without field confirmation and therefore does not necessarily represent an accurate description of on-site conditions. Rather, the mapping is a basis for further investigation.

Table 3.2.4-1 Bruno/Brickyard Associates/Alonzo Wetland Delineation Summary

Community Type	Acreage
Emergent/ Unconsolidated Bottom	2.46
Emergent	0.09
Forested	2.72
Emergent/ Scrub-Shrub	2.43
Scrub-Shrub	0.83
Forested/Emergent	1.64
Forested/Emergent/Scrub-Shrub	1.62
Forested/Scrub-Shrub	0.14
Total Acreage	**11.93**

Predominant species within the wetlands include green ash (*Fraxinus pennsylvanica*), swamp white oak (*Quercus* bicolor), red maple (*Acer rubrum*), silver maple (*Acer saccharinum*), red-osier dogwood (*Cornus stolinifera*), brook-side alder (*Alnus serrulata*), buttonbush (*Cephalanthus occidentalis*), spicebush (*Lindera benzoin)*, winterberry (*Ilex verticillata*), sensitive fern (*Onoclea sensibilis*), false nettle (*Boehmeria cylindrica*), arrow-leaf tearthumb (*Polygonum sagittatum*), broad-leaf cattail (*Typha latifolia*), reed canary grass (*Phalaris arundinacea*), woolgrass (*Scirpus cyperinus*), common reed (*Phragmites australis*), *Carex* spp., *Solidago* spp., purple loosestrife (*Lythrum salicaria*), joe-pye weed (*Eupatorium maculatum*), arrow-leaf tearthumb (*Polygonum saggitatum*), smooth scouring rush (*Equisetum laevigatum*), and soft rush (*Juncus effuses*).

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- NYS DEC Mapping
- National Wetland Inventory Mapping

Delineated Wetlands

- Emergent
- Emergent / Scrub-Shrub
- Forested
- Forested / Emergent
- Forested / Scrub-Shrub
- Scrub-Shrub
- Open Water / Emergent
- Observation Plots

Hudson River PCBs SUPERFUND SITE

Figure 3.2.4-4
Wetland Locations
Bruno / Brickyard Associates / Alonzo

500 250 0 500 1,000 1,500
Feet

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Field observations indicated the presence of aquatic bed wetland areas within the river channel to the west of the Alonzo property. These areas have been noted. However, delineation procedures did not involve mapping and boundary identification of wetlands within the river channel.

While the wetland assessment findings do not appear to represent potential significant limitations on the use of the site as a sediment processing/transfer facility, the facility design would avoid and minimize, where practicable, impacts on wetlands.

3.2.4.7 Floodplain Assessment

An initial floodplain assessment was conducted on the Bruno/Brickyard Associates/Alonzo site in order to determine the presence, extent, and orientation of FEMA-mapped floodplains within site boundaries. Flood magnitudes and historic river stages from gauging stations as close as available to the site were examined to obtain an initial sense of the characteristics of on-site flooding.

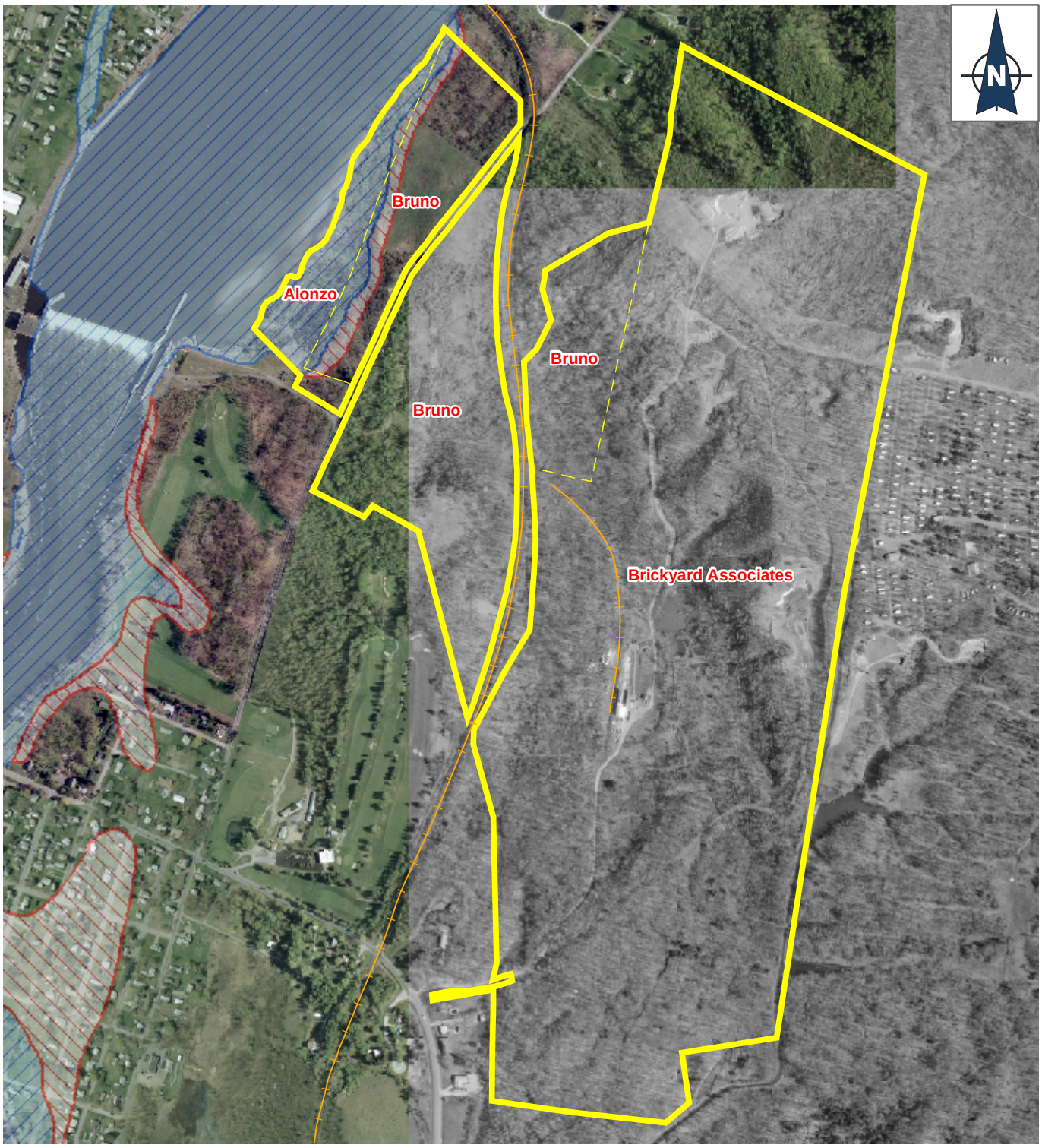
Figure 3.2.4-5 shows that portions of the site are located within the 100-year and 500-year floodplains. The site is located on the east side of the Hudson River in the Town of Schaghticoke. The floodplain is restricted to land adjacent to the Hudson River and is oriented parallel to the river along the western edge of the site. The 500-year floodplain extends approximately 100 feet beyond the 100-year floodplain boundary. Approximately 3.67% (12.8 acres) of the site is within the 100-year floodplain and approximately 17.3% (5% of the total site area) is within the 500-year floodplain.

The closest gauge station with historic flow data is in Stillwater, approximately 2 miles upstream of the site. The Waterford gauge station is approximately 6 miles downstream. Flood magnitudes were calculated from 26 years of flow data at Stillwater gauge station and based on 21 years of flow data at Waterford gauge station. While two 10-year floods occurred at the upstream station (March 15, 1977 and May 4, 1983) and one 10-year flood occurred at the downstream station (May 30, 1984) within the recorded history, no 100-year floods occurred at either station.

Historic water-level data (1916 to 2000) are also available from NYSCC Lock 3. Lock 3 is approximately 0.1 mile from the site. No 100-year flood events were recorded at NYSCC Lock 3 from 1916 to 2000.

The elevations of the site were reviewed using contour information and aerial photography to determine an approximation of how a 100-year flood would affect the site. It was determined that in the event of a 100-year flood the area along the river would be under 13 feet of water.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Potential Site Boundary
- Tax Parcels

FEMA Floodplain

- 100 Year Floodplain
- 500 Year Floodplain

Hudson River PCBs SUPERFUND SITE

Figure 3.2.4-5
FEMA Floodplain Mapping
Bruno / Brickyard Associates / Alonzo

500 250 0 500 1,000 1,500 2,000
Feet

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While the probability of a 13-foot inundation event (100-year flood) is remote, NYSCC water-level data on the upstream side of Lock 3 provide evidence that flooding on a smaller scale occurs almost annually at this site. Based on calculations of an average stage level using the maximum river stage at Lock 3 for the available time period (1916 to 2000), the site shoreline boundary would have been under approximately 8 feet of water during the maximum high water level on January 1, 1949 and under an average of 2.7 feet of water during each year's maximum flow. Field observations have also indicated that portions of the Alonzo property are subject to flooding.

The floodplain assessment findings do not appear to represent potential significant limitations that would greatly affect the use of the site as a sediment processing/transfer facility. However, due to the varying nature of the fill materials, additional characterization may be needed.

3.2.4.8 Coastal Management Area Assessment

The Bruno/Brickyard Associates/Alonzo site is not located in the state-designated coastal zone. Therefore, no direct impacts are expected as a result of the potential use of this site. EPA will prepare an additional phase of its coastal zone consistency assessment and subsequent coastal zone consistency determination, covering potential indirect and cumulative impacts from the operation of sediment processing/transfer facilities, once the Phase 1 and Phase 2 dredging facility locations are selected.

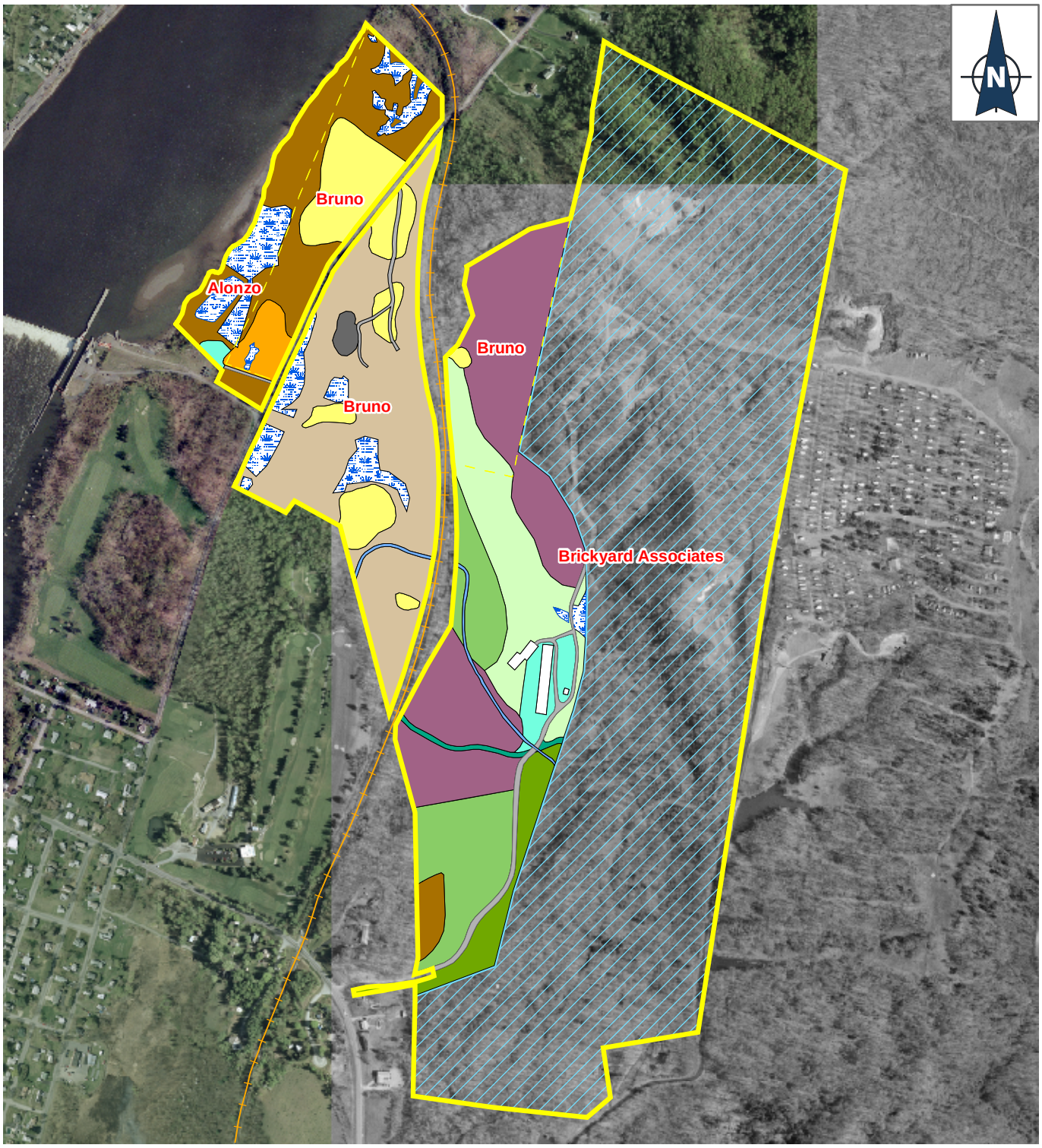
3.2.4.9 Baseline Habitat and Threatened and Endangered Species Assessment

Site Habitat Description

The site is situated on the east side of the river and is located on the upstream side of Lock and Dam 3 in Mechanicville. This site comprises several parcels that have been used for agriculture, mining, and brick manufacturing. The only remaining structures on the site are located on the Brickyard Associates parcel, where an active construction company has an administration building and garage. These disturbances have influenced the availability, extent, and diversity of on-site habitats across the three parcels. The majority of habitats on-site are early (less than 20 years) to mid-successional (20 to 60 years) vegetation communities, with several areas of late successional (greater than 60 years) along the shoreline and within the inland portions.

Using *Ecological Communities of New York State* (Edinger et al. 2002) as a framework for habitat identification, 15 community types were found on this 152-acre site (see Figure 3.2.4-6). No sensitive or rare habitats were among them. The dominant community type on this site is a mixture of successional northern hardwoods and Appalachian oak hickory forest. Other communities include successional southern hardwoods, successional old field, northern rich mesophytic

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



Ecological Communities

- Unpaved Road
- Wetland
- Successional Northern Hardwoods (SNH)
- Successional Old Field
- Successional Shrubland
- Successional Southern Hardwoods
- Rich Mesophytic Forest (RMF)
- Appalachian Oak-Hickory Forest (AOF)
- SNH / AOF
- RMF / AOF
- Marsh Headwater Stream
- Gravel Pit
- Rural Structure Exterior
- Mowed Pathway
- Mowed Roadside
- Potential Excluded Area

Hudson River PCBs SUPERFUND SITE

Figure 3.2.4-6
Site Ecological Communities
Bruno / Brickyard Associates / Alonzo

500 250 0 500 1,000 1,500 2,000 Feet

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forest, southern rich mesophytic forest, successional shrubland communities, and mixes of the communities above.

Aquatic communities on the site include a pond-wetland complex and marsh headwater stream. A number of wetlands were mapped as occurring on-site (see Section 3.2.4.6). The stream appeared to be perennial and is a low gradient riffle/pool/run stream with a moderately incised channel.

The Hudson River shoreline is shallow along the extent of the Alonzo property, which is characterized by a predominantly sand and/or muck substrate. Emergent vegetation occurs within portions of the shoreline. A number of large black willows are located within and adjacent to the shoreline area.

Common vegetation species and the community structure of the site have an influence on wildlife occurrences. The availability of forested, shrubland, and old field communities provides a diverse habitat for wildlife species. Incidental wildlife observations included whitetail deer, eastern gray squirrel, tree frog, green frog, mallard, great blue heron, and a variety of songbirds.

Endangered Species Act Issues

Bald eagles were identified as a listed species that could occur on the site. According to NYSDEC, there is no documented nesting activity in this area of the river. Coordination and consultation with NYSDEC and the USFWS, occurring as part of the facility siting process and for determining the details of a biological assessment document for the Hudson River PCBs Superfund Site project, revealed that the portion of the river in the vicinity of the site is a known wintering area for the bald eagle. A biological assessment will be prepared to address any potential impacts to the bald eagle as a result of the construction and operation of a sediment processing/transfer facility at this site. The biological assessment will include a literature review and any pertinent studies that are related to the habitat near this site as well as life history information on the bald eagle.

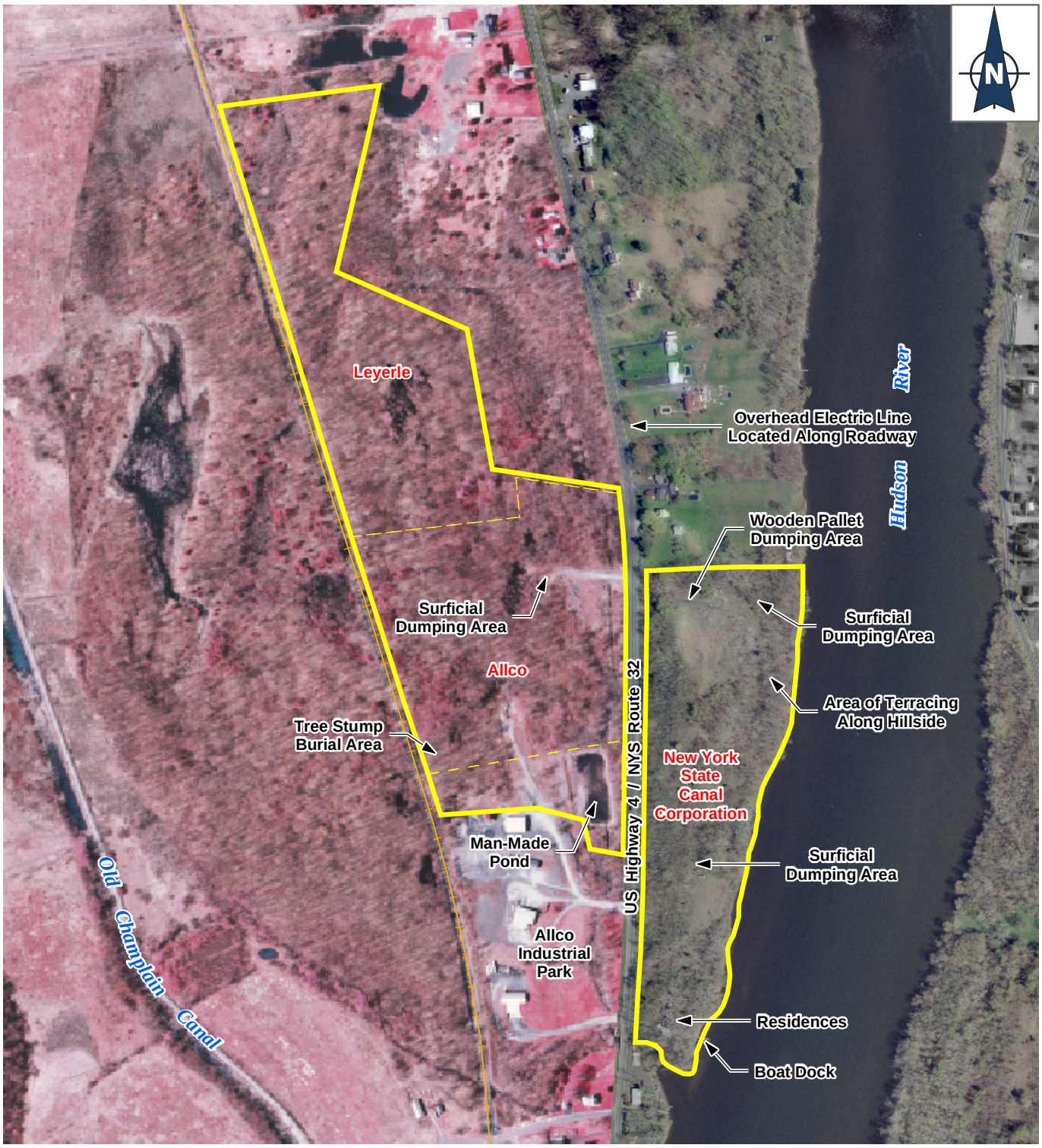
In conclusion, the baseline habitat and endangered species assessments findings do not appear to represent any potential significant limitations that would affect the construction and operation of a sediment processing/transfer facility. However, a biological assessment will be prepared to determine the potential effects of a facility on the bald eagle.

3.2.5 NYSCC/Allco/Leyerle

3.2.5.1 Phase I ESA

The three parcels of this site are mostly undeveloped. Key features are presented on Figure 3.2.5-1. The site owner indicated that the Allco property was reportedly used for logging, the NYSCC parcel was reportedly used for dredge spoils disposal in the early 1900s, and there is no apparent previous use of the Leyerle parcel. The land within 1 mile is mostly residential, with extensive forestland. There is also some light commercial land use along Route 4. The eastern side of the

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Approximate Site Boundary
- Tax Parcel Boundary
- Active Railroad

Hudson River PCBs SUPERFUND SITE

Figure 3.2.5-1
Key Site Features
New York State Canal Corporation / Allco / Leyerle

500 250 0 500 1,000 Feet

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Hudson River is predominantly open space, with some residential properties nearer the river.

The NYSCC property is a mostly wooded parcel characterized by generally flat topographic conditions on its western half and a pair of berms and slopes on its eastern half, leading down to the Hudson River. Gentle topographic elevation differences characterize most of the river edge, although an abrupt topographic rise occurs 40 to 75 feet inland along the middle part of the parcel. There is extensive river frontage but no rail access. Access is available by motor vehicle via a road leading to Routes 4 and 32. NYSCC currently leases the southernmost portion of this property for residential use; a house trailer and a small wooden cottage were observed in that area. Remains of a former cabin are located in the middle of the parcel. A concrete-block-lined well or septic system is located southwest of this cottage. Several surficial dumping areas were noted along the base of a 6- to 10-foot escarpment east of the access road. In addition, two unlabeled 55-gallon drums were observed near the northeast corner of the property, north of this escarpment. Tar was noted on top of one drum. The contents of the drums are unknown.

The Allco property is located west of Route 4 and is mostly undeveloped. A small adjacent parcel is a business park consisting of an auto repair shop, a self-storage facility, a building for lease, and a steel fabricating facility. Topography is relatively flat; maximum elevation differences on the site are 15 to 20 feet. The eastern and northern edges of the property are wooded, and the central portion remains open. A creek enters the property from the west (near the northwest corner), turns north and exits the property, then re-enters the property near the northeast corner and flows along the eastern border to a manmade pond, and then flows off-site to the south. Exposed soil was noted to contain large cobbles and gravel. The railroad is approximately 6 to 10 feet above grade. Gas, electric, and water services are located near the southern boundary, and water service is also available along the eastern border. The area to the south is light industrial, and the area to the east (on the east side of Route 4) includes undeveloped NYSCC property and residential property.

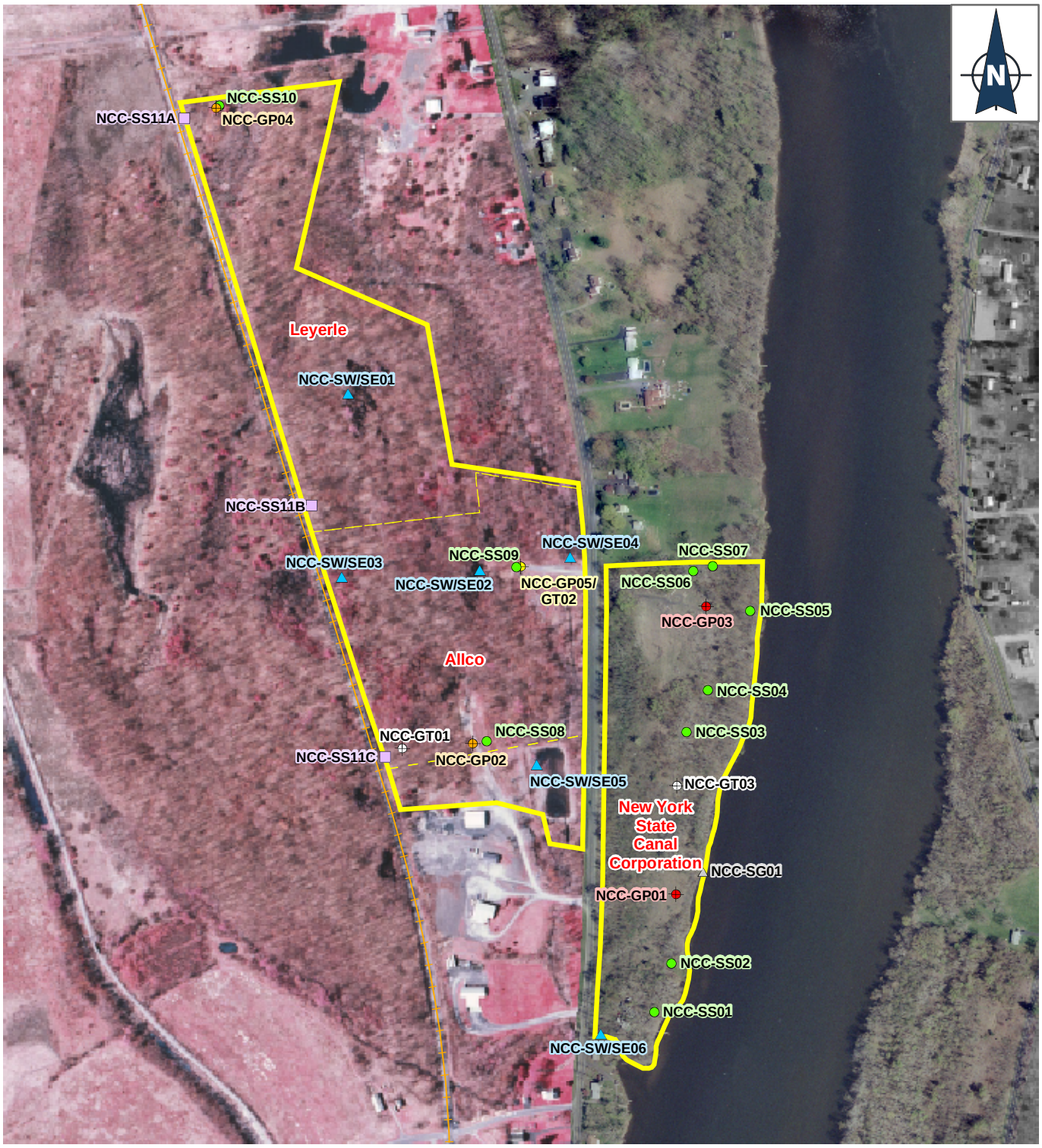
The Leyerle parcel is currently undeveloped. While the Leyerle parcel has extensive railroad frontage, there is no frontage on to Routes 4 and 32.

No previous site investigations were conducted on either the NYSCC or Allco properties.

3.2.5.2 Phase II ESA

The environmental investigations at this site included collecting eleven surface soil samples, six surface water/sediment samples, five subsurface soil samples, two groundwater samples from newly installed temporary monitoring wells, geotechnical soil testing at three locations, and the installation of one stream gauge for hydrologic monitoring purposes (see Figure 3.2.5-2).

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Geoprobe Soil Boring
- Geoprobe Soil Boring & Temporary Well
- Geoprobe & Geotechnical Boring
- Geotechnical Boring
- Surface Soil
- Soil Sample Adjacent to Railroad
- Surface Water / Sediment
- Stream Gauge
- Railroads
- Potential Site Boundary

Hudson River
PCBs SUPERFUND SITE

Figure 3.2.5-2
Sample Locations
New York State Canal Corporation / Allco / Leyerle

500 250 0 500 1,000 1,500
Feet

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The only parameters that exceeded screening criteria were PAHs in surface soil at NCC-SS06 (surficial dumping area) and various metals in all sample media. In addition to these compounds, levels of other compounds were detected above screening levels: SVOCs, including carbazole in surface soil NCC-SS06 and di-n-octylphthalate in sediment NCC-SS01 (on the Allco parcel) and pesticides in surface soil NCC-SS01 (open field) and sediments NCC-SE01, -SE02, and -SE03 (Allco and Leyerle parcels). PAHs and other SVOCs are typically associated with the fill materials (roofing, glass, cans, metal, auto parts, tires, etc.) noted in the surficial dumping areas.

Most metals are naturally occurring in soil/sediment and surface water/groundwater. Therefore, many of the exceedances may be attributable to naturally occurring levels. In general, the levels of chromium in NCC-SS01 (general site area), copper, nickel, and zinc in NCC-SS06 (surficial dumping area), magnesium in NCC-SS03 and -SS09 (surficial dumping areas), and zinc in NCC-SS07 (drum area) were noticeably higher than overall site levels. Also, of the metals that exceeded the NYSDEC TAGM guidance values, most were only slightly above the eastern U.S. background levels, except for zinc in NCC-SS06 and -SS07, which was 6 times and 3 times higher than eastern U.S. background levels, respectively. Therefore, it appears that localized areas of metals above screening levels at the site are from the surficial dumping activities. The metals exceeding criteria in the subsurface soils are at the same relative levels as most of the site surface soils, and so site activities on the subsurface soils do not appear to have had significant impact. The metals exceeding criteria in surface water (iron) and groundwater (antimony, magnesium, manganese, and sodium) are naturally occurring metals (except for antimony), which are often detected above criteria and are therefore not of concern. Antimony was detected in NCC-GP03 (near the surficial dumping areas). The sediments contained arsenic, copper, iron, lead, manganese, and nickel slightly above the low-level effect criteria, except for manganese in NCC-SS04 near Route 4, which was greater than the severe-level effect.

The environmental conditions detected at this site are indicative of typical domestic and light industrial historic site use and do not appear to represent significant environmental conditions that would affect the construction and operation of a sediment processing/transfer facility. However, due to the varying nature of the fill materials and dumping on the NYSCC parcel, additional assessments may be warranted.

3.2.5.3 Geotechnical Assessment

Subsurface soil investigation locations were selected to provide general coverage of the site. Additionally, locations were selected based on the possible presence of fill in areas that may be used to construct the sediment processing/transfer facility. Figure 3.2.5-2 shows the locations of three geotechnical boreholes, NCC-GT01 through NCC-GT03, installed during this study. At each geotechnical boring location, a continuous vertical soil profile was developed from the ground surface to a depth of approximately 26 feet BGS in 2-foot increments. A 2-inch OD

by 24-inch long split spoon-sampler was advanced through 4.25-inch ID hollow stem augers to collect the samples.

In addition to the geotechnical borings, subsurface geology was investigated at two other locations (NCC-GP01 and NCC-GP02) during environmental sampling. Using DPT, a 4-foot soil collection interval was used to collect a continuous soil profile from the ground surface to approximately 25 feet BGS. Note that subsurface geology at another location, NCC-GP02, was completed to collect environmental samples using a drill rig instead of DPT due to the rocky nature of the surface soil. Similarly, geotechnical borehole location NCC-GT02 also served as environmental sample location NCC-GP05 because the rocky soil prevented the use of DPT in this area.

The site subsurface geotechnical data indicated extensive variation in site soils between the NYSCC parcel and the Allco parcel. The NYSCC parcel contains a 10- to 16-foot thick layer of dredge spoils consisting of weathered shale fragments, silt, and sand. Density of these granular soils is loose, based on SPT n-values ranging from 7 to 10. A cobble at the 14- to 16-foot depth interval resulted in an isolated SPT n-value of 64, which is not representative of the general soil conditions. These dredge spoils are underlain by a gravel/clay/silt layer that grades to clayey silt with increasing depth. A thin (less than 0.5 foot) layer of peat overlies a gravel/silt/sand layer at the northern end and silty sand with gravel at the southern end. Density of the silty sand is moderately dense to dense, based on SPT n-values. Weathered shale was collected in the DPT sampler from a depth of 23 feet BGS at the northern end of the parcel.

Underlying a thin (less than 0.5 foot) topsoil layer, a gravelly silty sand comprises the Allco parcel's overburden soils to a depth of approximately 2 feet BGS. A 0- to 3-foot thick clay/gravel/silt bed overlies weathered shale. Split-spoon samples indicate weathered shale varies in thickness from approximately 0.5 feet to 5.5 feet thick. Auger refusal and/or split-spoon refusal was encountered between approximately 6 and 11 feet BGS. Based on SPT n-values, the density of granular overburden soils other than the weathered shale is loose nearest the surface and increases with depth.

The geotechnical conditions detected at this site do not appear to represent significant potential geotechnical limitations that would affect the construction and operation of a sediment processing/transfer facility. However, due to the nature of the fill on the NYSCC parcel, piling foundations and extensive roadway sub-bases may be warranted.

3.2.5.4 Utility Assessment

Utilities identified at the NYSCC/Allco/Leyerle site include the following:

- Overhead residential electric service is located near the southern end of the NYSCC parcel. This service enters the parcel along the driveway leading

from Route 4 to the two residential dwellings located at the southeastern corner of the parcel.

- Subsurface residential natural gas service is located near the southern end of the NYSCC parcel. This service enters the parcel along the driveway leading from Route 4 to the two residential dwellings located at the parcel's southeastern corner.

- Overhead electrical lines are also located along the eastern side of Route 4 adjacent to the site.

- Electrical, gas, and water services were noted at the Allco property buildings.

The utility assessment findings do not appear to represent significant potential limitations that would affect the construction and operation of a sediment processing/transfer facility. However, utilities will be further evaluated during design.

3.2.5.5 Archaeological and Architectural Investigations

Preliminary Archaeological Assessment

Based on the background research performed during the PCS evaluation, the NYSCC/Allco/Leyerle site was considered to have a high potential for archaeological resources. The Phase IB Survey modified the preliminary assessment.

Archaeological Investigation

Phase IB fieldwork was conducted on the NYSCC/Allco/Leyerle site between November 6 and November 13, 2003 (see Figure 3.2.5-3). More than 250 shovel tests were excavated. The archaeological survey of the NYSCC property is complete, and no cultural resources were found. Approximately half of the fieldwork for the Allco and Leyerle properties is complete.

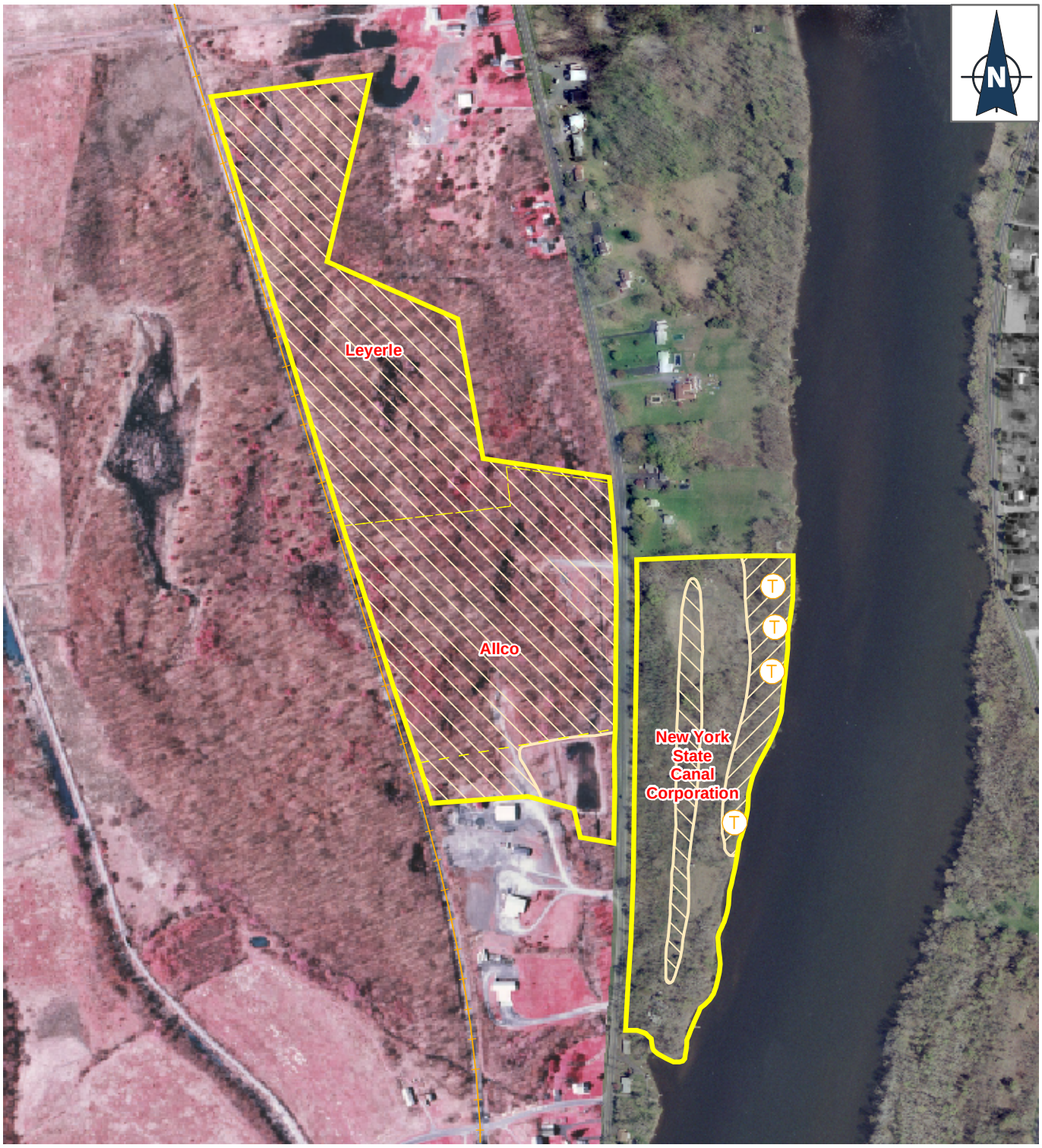
Geomorphological Investigation

Fieldwork was conducted October 23 and 24, 2003. Four backhoe trenches totaling 40 meters in length were excavated. One trench contained an old pipe, just below the topsoil. A second contained a buried A-horizon (paleosol) with a possible old stream channel. A third trench uncovered large quantities of slag material with the same characteristics as the second trench, but no features were uncovered.

Architectural Assessment

Fieldwork was conducted during July 2003. This site contains a number of structures, including one residence that is more than 50 years old, a modern trailer, a small dock on the riverbank, and three structures (two metal and one wood), all of which are in a ruinous condition and have no integrity.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Potential Site Boundary

Archaeological Testing Method

- Backhoe Test
- Shovel Test (not completed)
- Backhoe & Shovel Test
- Backhoe Trench Locations

Hudson River
PCBs SUPERFUND SITE

Figure 3.2.5-3
Field Sampling Areas
Phase I B Cultural Resources Investigation
New York State Canal Corporation / Allco / Leyerle

500 250 0 500 1,000
Feet

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Based upon current knowledge, cultural resource issues do not pose significant limitations at this site. A residence in the southern portion of the NYSCC property will require additional investigation to determine NRHP eligibility. An architectural assessment is needed for the Allco and Leyerle properties.

Phase IB field investigations for the unstudied portions of the Allco and Leyerle properties need to be completed. Preliminary results indicate that additional deep testing will be required on the NYSCC property.

3.2.5.6 Wetland Assessment

Wetland determinations and delineations of the NYSCC/Allco/Leyerle site took place October 7 through October 10, 2003. Determination and delineation activities were limited to those areas previously identified through data review and areas identified as potential wetlands during the site visit.

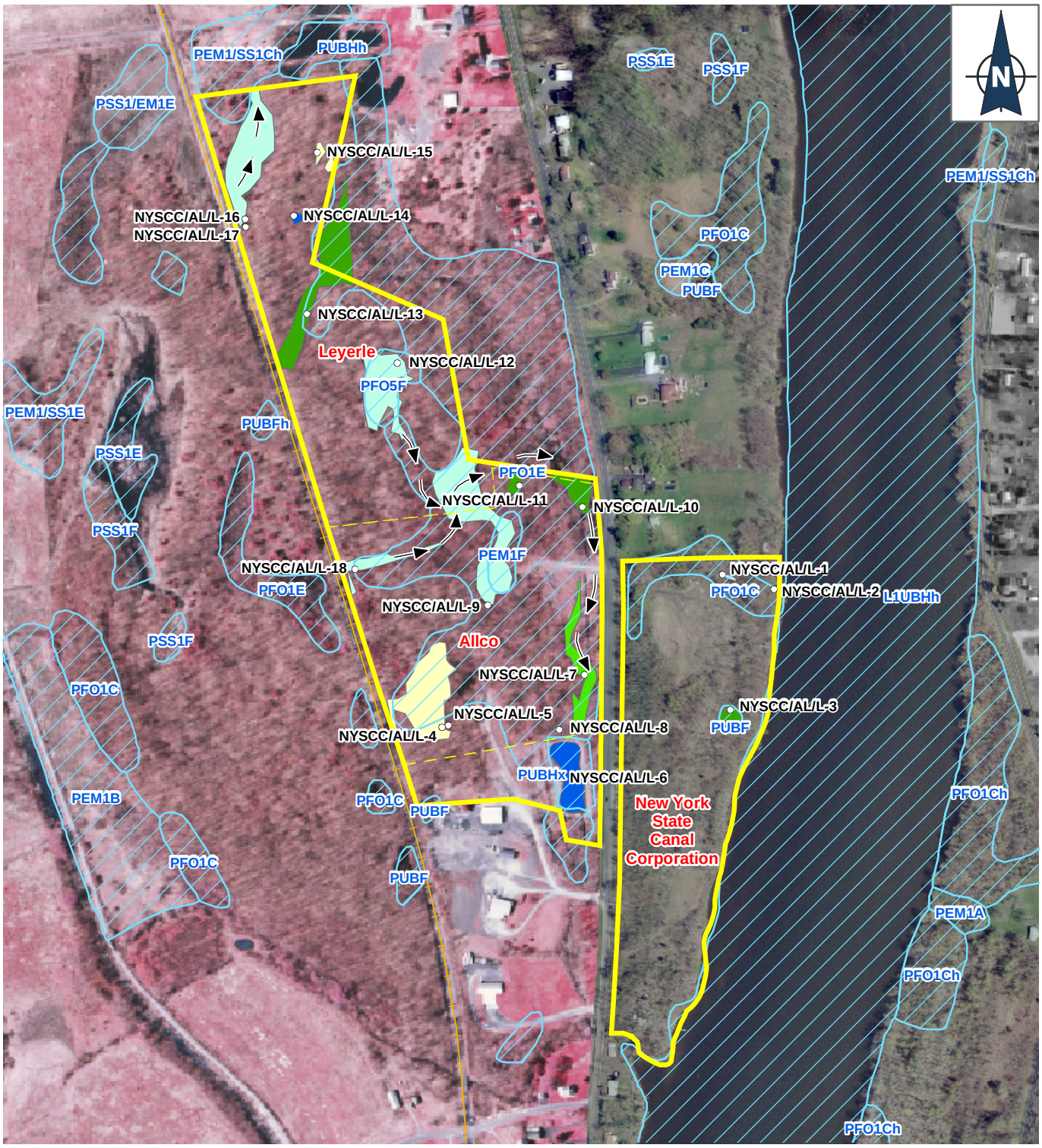
NYSDEC wetland mapping did not indicate the presence of state-delineated wetlands on this site. Review of NWI wetland mapping indicated the site contained approximately 26.95 acres of wetland. NWI wetland maps identify the shoreline along the river as a lacustrine wetland. However, sample plots and determinations did not extend into the river.

The mapped soil types within the site boundaries are Madalin mucky silty clay loam, Bernardston-Manlius-Nassau complex rolling/undulating, and Manlius-Nassau complex undulating/ rocky (U.S. Department of Agriculture 2003). The Madalin soil is poorly drained and appears on the Saratoga County hydric soils list.

Results of the Wetland Assessment

Field investigations resulted in the determination of 14 wetland areas encompassing 8.61 acres of the site (see Table 3.2.5-1 and Figure 3.2.5-4). The delineated wetland acreage represents a reduction in the 26.9 acres indicated on the NWI mapping. A large portion of this discrepancy may be attributed to the alterations to the Allco site as a result of recent logging. Much of this site was identified on the NWI maps as wetland. Other areas appear to have been impacted by logging and earth-moving activities as well. However, NWI mapping primarily uses remote sensing techniques (i.e., photo interpretation) without field confirmation and therefore does not necessarily represent an accurate description of on-site conditions. Rather, the mapping is a basis for further investigation.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- NYS DEC Mapping
- National Wetland Inventory Mapping

Delineated Wetlands

- Emergent
- Forested
- Forested / Emergent
- Forested / Scrub-Shrub
- Open Water / Emergent
- Open Water / Forested
- Observation Plots
- Direction of Drainage Flow

Hudson River PCBs SUPERFUND SITE

Figure 3.2.5-4
Wetland Locations
New York State Canal Corporation / Allco / Leyerle

500 250 0 500 1,000 Feet

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Table 3.2.5-1 NYSCC/Allco/Leyerle Wetland Delineation Summary

Community Type	Acreage
Forested/Unconsolidated Bottom	0.03
Forested	1.25
Emergent	1.54
Emergent/Unconsolidated Bottom	0.66
Forested/Emergent	0.63
Forested/Scrub-Shrub	4.51
Total Acreage	**8.61**

A creek flows along the eastern border of the Allco property to a manmade pond and then flows off-site to the south. The pond dam has not been regularly maintained, resulting in shallow water levels and emergent plant growth.

Predominant species within the wetlands include green ash (*Fraxinus pennsylvanica*), swamp white oak (*Quercus* bicolor), red maple (*Acer rubrum*), silver maple (*Acer saccharinum*), eastern cottonwood (*Populus deltoides*), *Cornus* spp., buttonbush (*Cephalanthus occidentalis*), spicebush (*Lindera benzoin*), winterberry (*Ilex verticillata*), sensitive fern (*Onoclea sensibilis*), spotted jewelweed (*Impatiens capensis*), false nettle (*Boehmeria cylindrica*), arrow-leaf tearthumb (*Polygonum sagittatum*), broad-leaf cattail (*Typha latifolia*), reed canary grass (*Phalaris arundinacea*), woolgrass (*Scirpus cyperinus*), *Carex* spp., rice cutgrass (*Leersia oryzoides*), and *Solidago* spp.

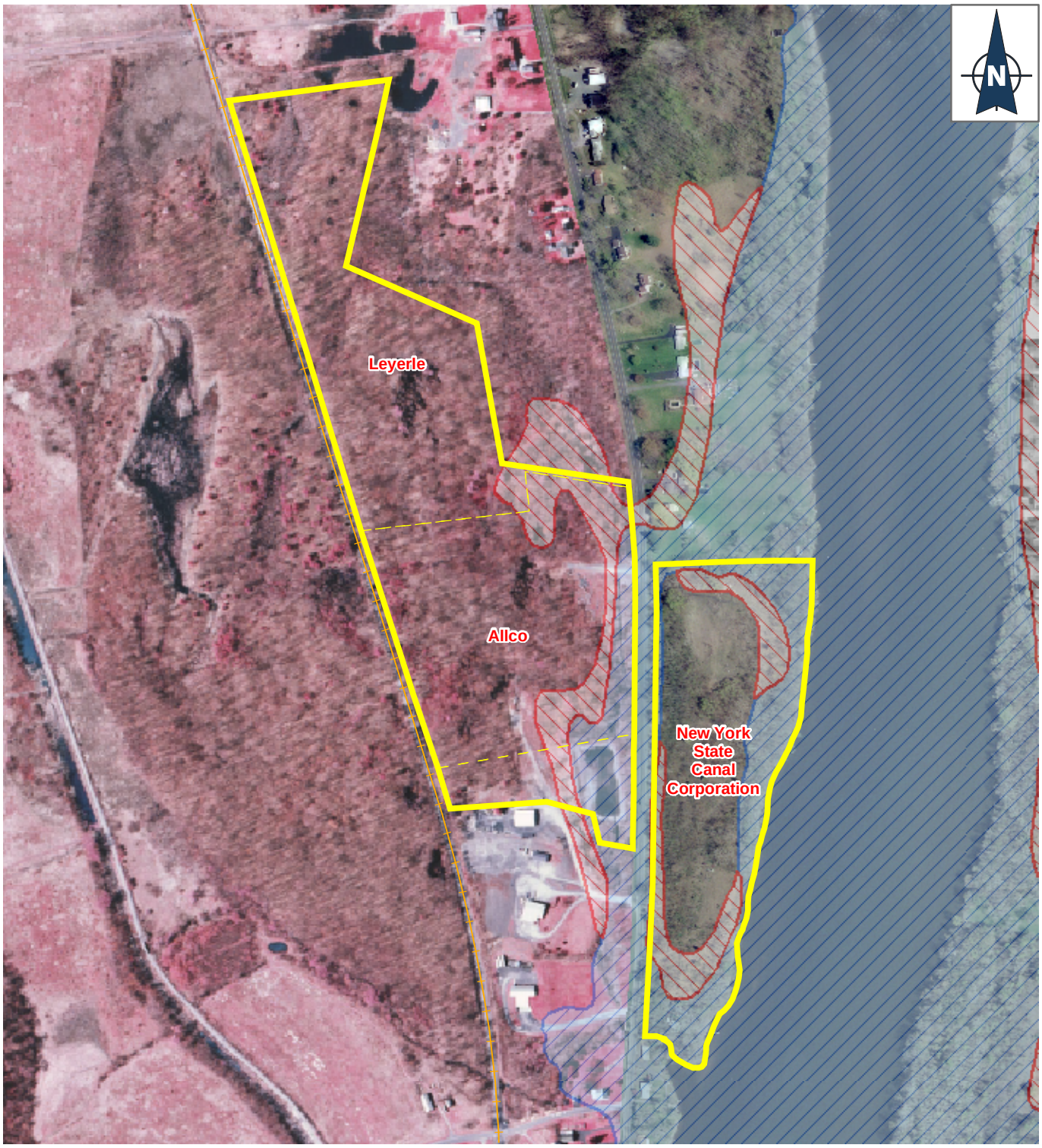
The wetland assessment findings do not appear to represent potential significant limitations that would greatly affect the construction and operation of a sediment processing/transfer facility. However, a facility design consideration will be to avoid or minimize impacts on wetlands.

3.2.5.7 Floodplain Assessment

An initial floodplain assessment was conducted on the NYSCC/Allco/Leyerle site in order to determine the presence, extent, and orientation of FEMA-mapped floodplains within site boundaries. Flood magnitudes and historic river stages from gauging stations as close as available to the site were examined to obtain an initial sense of the characteristics of on-site flooding.

Figure 3.2.5-5 shows that portions of the site are located within the 100-year and 500-year floodplains. The site is located on the west side of the Hudson River in the Town of Halfmoon. The areas included within the 100-year floodplain are adjacent to the Hudson River within the NYSCC parcel and to the west of Route 4 within the Allco parcel. Approximately 16.2% (12.0 acres) is mapped as occurring within the 100-year floodplain and approximately 20.5 acres (approximately 28% of the total site area) are located in the 500-year floodplain.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Potential Site Boundary
- Tax Parcels

FEMA Floodplain

- 100 Year Floodplain
- 500 Year Floodplain

Hudson River
PCBs SUPERFUND SITE

Figure 3.2.5-5
FEMA Floodplain Mapping
New York State Canal Corporation / Allco / Leyerle

500 250 0 500 1,000
Feet

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The closest gauge station with historic flow data is in Waterford, approximately 2 miles downstream of the site. The Stillwater gauge station is approximately 5 miles upstream.

Flood magnitudes were calculated from 26 years of flow data at the Stillwater gauge station and from 21 years of flow data at the Waterford gauge station. No 100-year flood has occurred at either the Waterford or Stillwater gauge station in the 26 years of modern data. In that time, there have been two flow events greater than 10-year floods (March 15,1977 and May 4, 1983) at the Stillwater gauge station and one flow event greater than 10-year floods (May 30,1984) at the Waterford gauge station.

Historic water-level data (1916 to 2000) are also available from NYSCC Lock 2. Lock 2 is located approximately 1.5 miles upstream of the site. Based on NYSCC data, the 100-year flood elevation for this site was reached twice (on November 10, 1927 and January 2, 1949) between 1916 and 2000.

The elevations of the site were reviewed using contour information and aerial photography to determine an approximation of how a 100-year flood would affect the site. It was determined that, in the event of a 100-year flood, the area along the river would be under approximately 12 feet of water.

While the probability of a 12-foot inundation event (100-year flood) is remote, the NYSCC water-level data on the downstream side of Lock 2 provide evidence that flooding on a smaller scale likely occurs almost annually at this site. Based on calculations of an average stage level using the maximum river stage at Lock 2 for the available time period (1916 to 2000), portions of the shoreline boundary would have been under approximately 16 feet of water during the maximum high water level on January 2, 1949 and under an average of 3.7 feet of water during each year's maximum flow.

In conclusion, the floodplain assessment findings do not appear to represent any potential significant limitations that would affect the construction and operation of a sediment processing/transfer facility.

3.2.5.8 Coastal Management Area Assessment

The NYSCC/Allco/Leyerle site is not located in the state-designated coastal zone. Therefore, no direct impacts are expected as a result of the potential use of this site. EPA will prepare an additional phase of its coastal zone consistency assessment and subsequent coastal zone consistency determination, covering potential indirect and cumulative impacts from the operation of sediment processing/transfer facilities, once the Phase 1 and Phase 2 dredging facility locations are selected.

3.2.5.9 Baseline Habitat and Threatened and Endangered Species Assessment

Site Habitat Description

Disturbance from historic and current land uses has influenced the availability, extent, and diversity of on-site habitats. The site is situated on the west side of the river and Routes 4 and 32 bisect a portion of the site, delineating the boundary between the NYSCC and Allco parcels. The NYSCC (waterfront) parcel is primarily undeveloped, with both forested and open field areas. The waterfront was used as a dredge spoils disposal area in the early 1900s. Currently two residential dwellings are near the southern end of the parcel.

The inland parcels (west of Routes 4 and 32) contain forested and recent clear-cut areas, and an area near the southern end of the Allco parcel is being developed for commercial purposes. Because of the historic and current uses of the site, a large portion of the site (42%) is disturbed or developed. Despite this condition, the Allco and Leyerle (inland) parcels contain relatively large areas of contiguous forest. The majority of habitats on-site are composed of mid- (20 to 60 years) to late successional (greater than 60 years) vegetation communities. Early successional (less than 20 years) species dominate the disturbed areas.

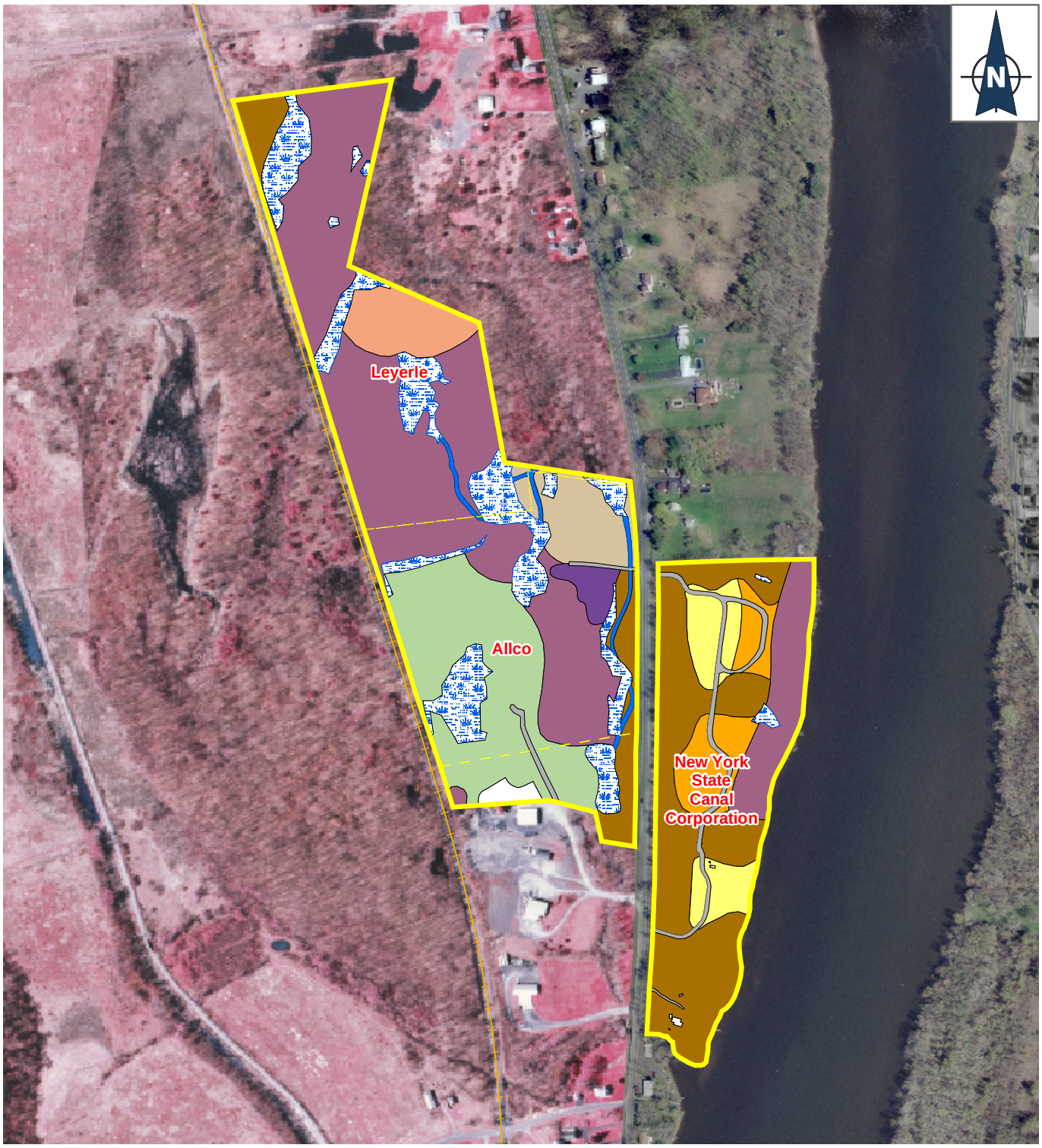
Using *Ecological Communities of New York State* (Edinger et al. 2002) as a framework for habitat identification, eleven community types have been mapped as occurring on the 74-acre site (see Figure 3.2.5-6); no sensitive or rare habitats were among them. The dominant community is the Appalachian oak hickory forest community, which comprises approximately 35% of the site. Other communities include successional northern hardwood, brushy cleared land, successional old field, successional shrubland, and beech maple forest communities.

Aquatic communities on the site include the marsh headwater stream community type. The stream is connected to several of the wetland communities found on the site. (Wetland communities on this site are discussed in Section 3.2.5.6 above.) The stream is low gradient and the substrate is dominated by sand and silt.

The northern portion of the Hudson River shoreline is shallow (1 to 1.5 feet extending 30 feet from shoreline), with the substrate dominated by gravel and cobbles, with sand more abundant on the southern end. The majority of the northern riparian area contains mature trees extending to the shoreline, with several small pockets of shale beaches. Large woody debris (i.e., fallen, rooted trees) is abundant along the northern portion of the shoreline and absent from the southern end.

Common vegetation species and the community structure of the site have an influence on wildlife occurrences. The availability of forested, shrubland, and old field communities provides a diverse habitat for wildlife species. Incidental wildlife observations included whitetail deer, raccoon, turkey vulture, and a variety of common songbirds.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



Ecological Communities

- Unpaved Road
- Wetland
- Successional Northern Hardwoods (SNH)
- Successional Old Field
- Successional Shrubland
- Appalachian Oak-Hickory Forest (AOF)
- SNH / AOF
- Beech-Maple Mesic Forest
- Brushy Cleared Land
- Marsh Headwater Stream
- Rural Structure Exterior
- Construction / Road Maintenance Spoils

Hudson River
PCBs SUPERFUND SITE

Figure 3.2.5-6
Site Ecological Communities
New York State Canal Corporation / Allco / Leyerle

500 250 0 500 1,000
Feet

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Endangered Species Act Issues

Bald eagles were identified as a listed species that could potentially occur on the site. However, there is no known nesting activity in this area of the river. Coordination and consultation with NYSDEC and the USFWS, which have occurred as part of the facility siting process and for determining the details of a biological assessment for the Hudson River PCBs Superfund Site project, revealed that the portion of the river in the vicinity of the site is a wintering area for the bald eagle. A biological assessment will address any potential impacts to the bald eagle as a result of the construction and operation of a sediment processing/transfer facility. The biological assessment will include a literature review and any pertinent studies that are related to the habitat near this site as well as life history information on the bald eagle.

The baseline habitat and endangered species assessments findings do not appear to represent potential significant limitations that would affect the construction and operation of a sediment processing/transfer facility. However, a biological assessment will be prepared to determine the potential effects of a facility on the bald eagle.

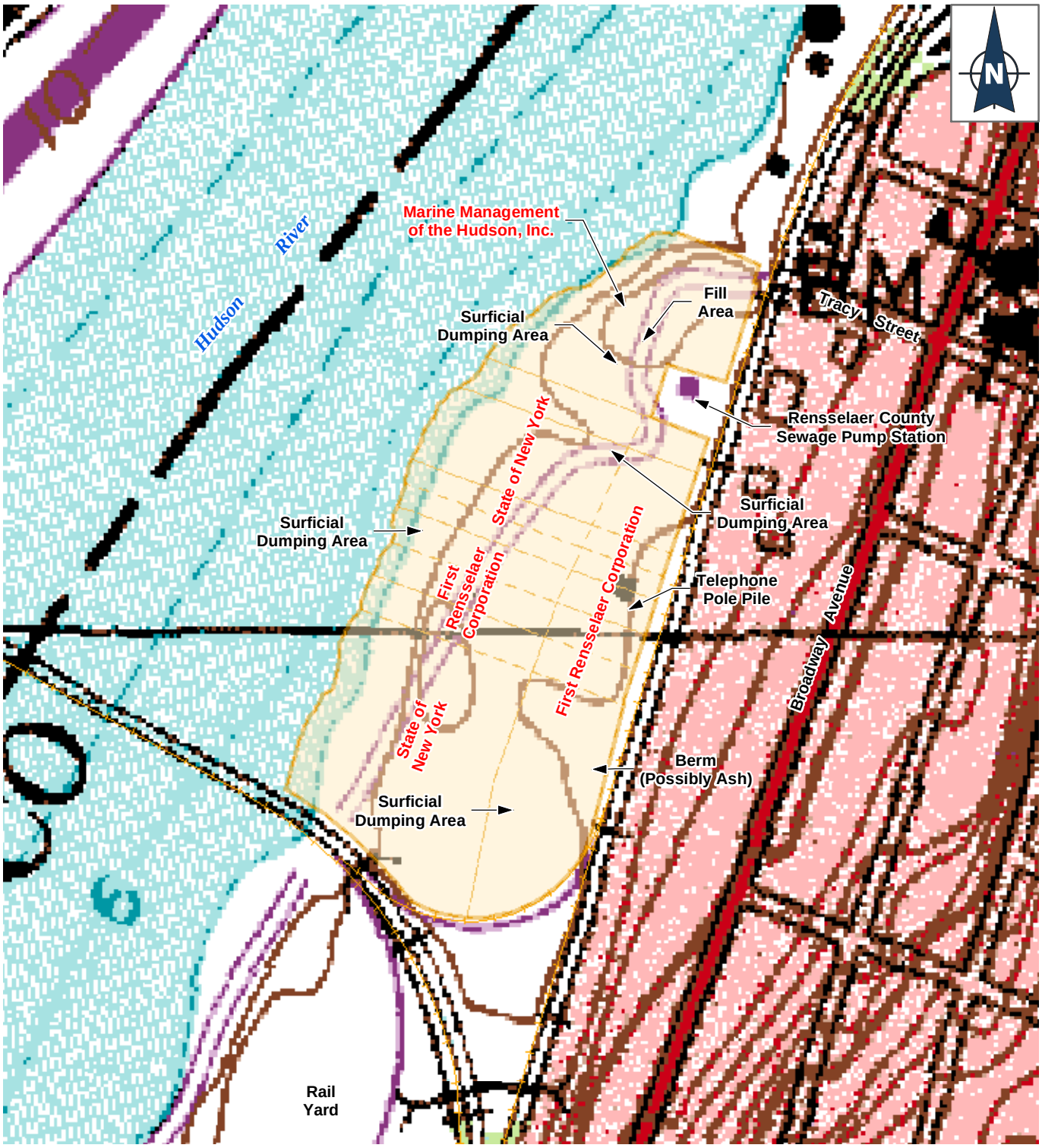
3.2.6 State of New York/First Rensselaer/Marine Management

3.2.6.1 Phase I ESA

This site consists predominantly of made land. The made land consists of dredgings of gravel, sand, and mud from the Hudson River, material from building excavations, railroad-associated cinders, and trash. The made land was used to fill in low areas, marshes, and bottomlands. In most places, the made land covers the original land to a depth of several feet (City of Rensselaer 1987). By 1950, according to the USGS topographic map, the western portion of the project had been completely filled. Currently, the site is undeveloped and there are no buildings on the site. However, there are concrete foundations located near the midpoint of the eastern side of the site. Key site features are presented on Figure 3.2.6-1.

The site is bordered by a single-family riverfront residence and vacant commercial properties to the north; the railroad right-of-way and a train station to the south; the railroad right-of-way, industrial facilities, residential and commercial properties to the east; and the Hudson River to the west. A school and a cemetery are located within 1 mile to the northeast, and a park is located within 0.5 mile to the southeast. The site is mostly wooded and has a variable topography. The southwestern part of the site exhibits a gentle grade to a sandy or gravelly beachfront along the Hudson River. A very steep incline of more than 25 vertical feet flanks the northwestern end of the site. A gray ash pile (with an average height of 6 feet above grade and a width of 15 feet) flanks most of the eastern site border south of a sewage pumping station. Mounding with municipal-type trash at surface and in depressions was observed in the northern portion of the site. Several piles of surface debris consisting of glass, concrete blocks, roofing shingles, and tires were noted throughout the remainder of the site. Three empty 55-gallon drums were noted in the central portion of the site. The contents of these drums are unknown.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Approximate Site Boundary
- Tax Parcel Boundary
- Active Railroad

Due to the presence of "sensitive content," certain data/imagery is unavailable as directed by the NYS Office for Public Security.

Hudson River PCBs SUPERFUND SITE

Figure 3.2.6-1
Key Site Features
State of New York / First Rensselaer / Marine Management

500 250 0 500 Feet

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In addition, a stacked pile of approximately 50 to 100 wooden telephone-type poles is located in the east-central part of the site. A 24-inch-diameter sewer line traverses the south-central portion of the site, then turns northeast to the pump station. While rail lines do not traverse the site, there are approximately 2,000 feet of direct rail access. A single active rail line borders the eastern side of the site, and a railroad bridge crosses the river immediately south of the site. A railroad yard is located south of the site. River access is provided by approximately 1,400 feet of river frontage. No dock facilities are located on the site.

According to the current owners of the Marine Management parcel, no previous environmental site assessments have been conducted on the site.

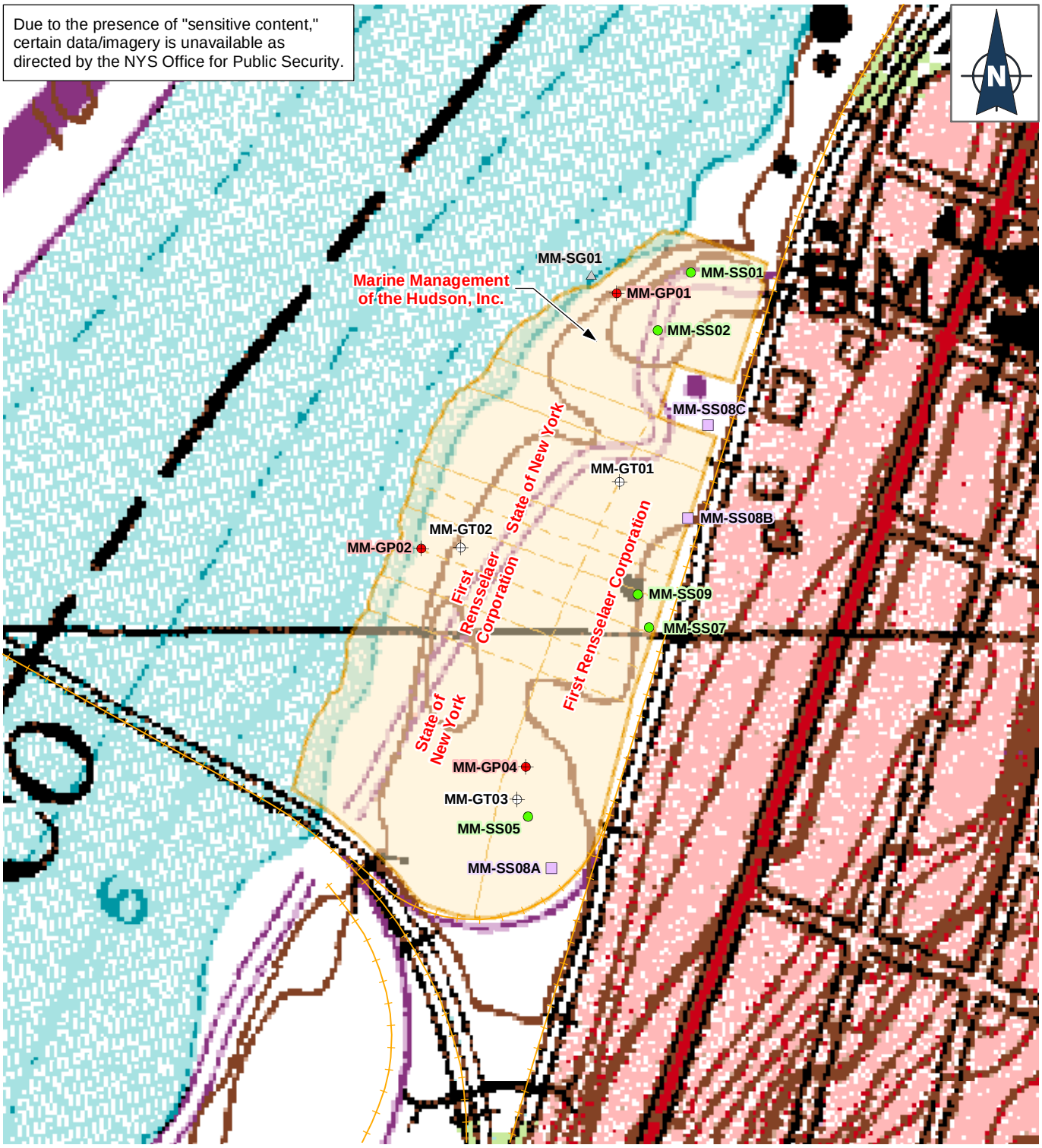
3.2.6.2 Phase II ESA

The environmental investigations at this site included collecting seven surface soil samples, three subsurface soil samples, three groundwater samples from newly installed temporary monitoring wells, geotechnical soil testing at two locations, and the installation of one stream gauge for hydrologic monitoring purposes (see Figure 3.2.6-2).

The only parameters that exceeded screening criteria were SVOCs, including 4-nitrophenol in surface soil MM-SS01, PAHs in surface soils, and various metals in the sampled media. In addition to these compounds, the following compounds were detected above screening levels: SVOCs, including acetophenone in surface soil MM-SS05 (surficial dumping area); carbazole in surface soils MM-SS01 (surficial dumping area), -SS07 (ash pile), and -SS08 (adjacent to rail line); and caprolactum in groundwater from MM-GP01 and -GP04. The PAHs and other SVOCs are typical for areas of fill and domestic/light industrial dumping areas.

Most metals are naturally occurring in soil/sediment and surface water/groundwater. Therefore, many of the exceedances are expected to be associated with naturally occurring concentrations or associated with imported fill materials. In general, the levels of metals in MM-SS02 (copper, lead, and zinc), MM-SS05 (barium, cadmium, lead, and zinc), MM-SS08 (arsenic and zinc), and MM-SS09 (barium, cadmium, copper, lead, and zinc) are noticeably higher than estimated overall site background levels. Also, of the metals that exceeded the NYSDEC TAGM guidance values, most were only slightly above the eastern U.S. background levels. However, barium was detected up to 11 times higher than eastern U.S. background, cadmium 25 times higher, copper 20 times higher, lead 17 times higher, and zinc 150 times higher than the eastern U.S. background levels. Therefore, it appears that there are localized areas of metals above screening levels at the site associated with surficial dumping and landfill activities. The metals exceeding criteria in the subsurface soils are at the same relative levels as most of the site surface soils, with levels of lead and zinc approximately 3 times and 13

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Geoprobe Soil Boring
- Geoprobe Soil Boring & Temporary Well
- Geoprobe & Geotechnical Boring
- Geotechnical Boring
- Surface Soil
- Soil Sample Adjacent to Railroad
- Surface Water / Sediment
- Stream Gauge
- Railroads
- Potential Site Boundary

Hudson River PCBs SUPERFUND SITE

Figure 3.2.6-2
Sample Locations
State of New York / First Rensselaer / Marine Management

500 250 0 500 Feet

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times higher, respectively, than eastern U.S. background levels. The metals exceeding criteria in groundwater (aluminum, iron, and manganese) are naturally occurring and are therefore not anticipated to be representative of site-wide conditions.

The environmental conditions at this site are typical for areas containing fill materials (domestic and light industrial). Since the site is made land, and the subsurface soils contain elevated levels of PAHs and metals, there may be some environmental conditions of concern at this site.

3.2.6.3 Geotechnical Assessment

Subsurface soil investigation locations were selected to provide general coverage of the site. Additionally, locations were selected based on the possible presence of fill in areas that may be used to construct the sediment processing/transfer facility. Figure 3.2.6-2 shows the locations of three geotechnical boreholes, MM-GT01 through MM-GT03, installed during this study. At each geotechnical boring location a continuous vertical soil profile was developed from the ground surface to a depth of approximately 26 feet BGS in 2-foot increments. A 2-inch OD by 24-inch long split-spoon sampler was advanced through 4.25-inch inner diameter ID hollow stem augers to collect the samples.

In addition to the geotechnical borings, subsurface geology was also recorded at three other locations, MM-GP01, MM-GP02, and MM-GP04, during subsurface investigation activities completed for environmental sampling. Using DPT, a 4-foot soil collection interval was used to collect a continuous soil profile from the ground surface to approximately 25 feet BGS.

The subsurface data indicates that the northern end of the property contains fill consisting of silt, sand, metal, glass, brick, and cinders that extends to a depth of approximately 18.5 feet BGS. This fill is underlain by sand, grading to a sand and silt mixture containing gravel to a depth of approximately 25 feet BGS. Farther inland, a thinner (approximately 2-foot thick) fill layer lies at the surface in the northeast part of the site, south of the sewage treatment pump station.

Very loose silty sands and sand layers, classified per SPT n-value records, and often containing gravel, underlie the fill to a depth of approximately 17 feet BGS, where a thin peat layer (less than 0.5 feet) lies. Clay underlies the peat layer to a depth of at least 26 BGS. The consistency of this clay increases from very soft to medium, based on SPT n-values increasing from 1 to 6 with depth.

The central portion of the site consists of an approximately 3.5-foot thick layer of sand containing brick fragments, which is underlain by sand containing gravel to a depth of 25 feet. Farther inland, the fill layer is absent. The density of soil in the central part of the site is generally loose, based on SPT n-values.

The southeastern corner of the site also contains fill ranging in thickness from approximately 2 to 6 feet. A sandy clay lens containing gravel and about 1 foot thick lies at a depth of approximately 6 feet BGS under the thicker fill zone; it is underlain by layers of gravelly sands, clayey silts with sands, silts, and sands to a depth of 25 feet. The thinner fill zone farther to the west is underlain by nearly 4.5 feet of clayey silt, under which layers of gravelly sand, silty sand, and gravel/sand/silt mixtures extend to a depth of 17 feet BGS. SPT n-values indicate densities in these granular soils are generally loose to very loose. Clay underlies the southern end of the site, starting at a depth of approximately 17 feet BGS; its consistency is classified as medium to soft, based on SPT n-values.

The geotechnical conditions identified at this site do not appear to represent significant potential geotechnical limitations that would affect the construction and operation of a sediment processing/transfer facility. However, due to the extensive nature of the fill materials, pilings and extensive sub-base roadways are likely to be necessary.

3.2.6.4 Utility Assessment

Utilities identified at the State of New York/First Rensselaer/Marine Management site include the following:

- A sewer pipeline extends from the southern end of the site to the Rensselaer County sewage pump station (located in the northeastern part of the site). This sewer line then bends approximately 45 degrees and extends toward the pump station; a manhole is located at this bend. Approximately 50 feet south of the pump station the line turns north and enters the facility.

- A 24-inch discharge pipeline extends from the pump station to the Hudson River where the outfall is located.

- An overhead electrical power line right-of-way is located in the central part of the site and runs north-south.

The utility assessment findings do not appear to represent significant potential limitations that would affect the construction and operation of a sediment processing/transfer facility. However, it is expected that utilities will be further evaluated during design.

3.2.6.5 Archaeological and Architectural Investigations

Preliminary Archaeological Assessment

Based on the background research performed during the PCS evaluation phase, the State of New York/First Rensselaer/Marine Management site was considered to have a high potential for archaeological resources. The Phase IB Survey disproved the preliminary assessment.

Archaeological Investigation

Phase IB fieldwork was conducted on the State of New York/First Rensselaer/Marine Management site on November 14, 2003 (see Figure 3.2.6-3). The vast majority of the site is fill and made land. The survey discovered one historic foundation made from poured concrete. It has sectioned rooms, is surrounded by fill, and does not appear to be a significant historical or architectural resource. The Phase I field investigation is complete for this site.

Geomorphological Investigation

Fieldwork was conducted October 25, 2003. Most of the site contains a modern landfill. One 10-meter long trench was excavated in the northern half of the site. It did not produce any features, artifacts, or paleosols. No evidence was found of the original shoreline indicated on historic maps.

Architectural Assessment

Fieldwork was conducted during July 2003. No structures are currently within this FCS other than the concrete ruins previously mentioned. The NRHP-listed Casparus Pruyn house and office is located approximately 300 feet to the north of the site. Numerous NRHP-listed structures are located across the river in downtown Albany, but the site will most likely be shielded from view by elevated roadways and other structures. A potentially historic railroad bridge crosses the river immediately south of the APE.

Given the current information, cultural resource issues do not constitute limitations at this site. Further archaeological investigation is not recommended due to disturbance and property history. Additional architectural studies are recommended to address the viewshed of the Casparus Pruyn house and office and the NRHP-eligibility of the potentially historic railroad bridge.

3.2.6.6 Wetland Assessment

Wetland determinations on the State of New York/First Rensselaer/Marine Management site took place on October 13, 2003. Determination activities were limited to those areas previously identified through data review and areas identified as potential wetlands during site visits (see Figure 3.2.6-4).

Review of NWI wetland mapping indicated the presence of a NWI-identified riverine wetland complex along the shoreline of the site. No further wetlands were identified on any of the parcels. Although NWI wetland maps identify entire river systems as riverine or lacustrine wetlands, sample plots and determinations along the shoreline were limited to areas that exhibited wetland characteristics and occurred above the ordinary high water mark. No NYSDEC wetlands were identified on the site.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;

LEGEND

- T — Backhoe Trench Locations

Archaeological Testing Method

- Backhoe Test
- Shovel Test
- Backhoe & Shovel Test
- Potential Site Boundary

Hudson River PCBs SUPERFUND SITE

Figure 3.2.6-3
Field Sampling Areas
Phase I B Cultural Resources Investigation
State of New York / First Rensselaer / Marine Management

500 250 0 500 Feet

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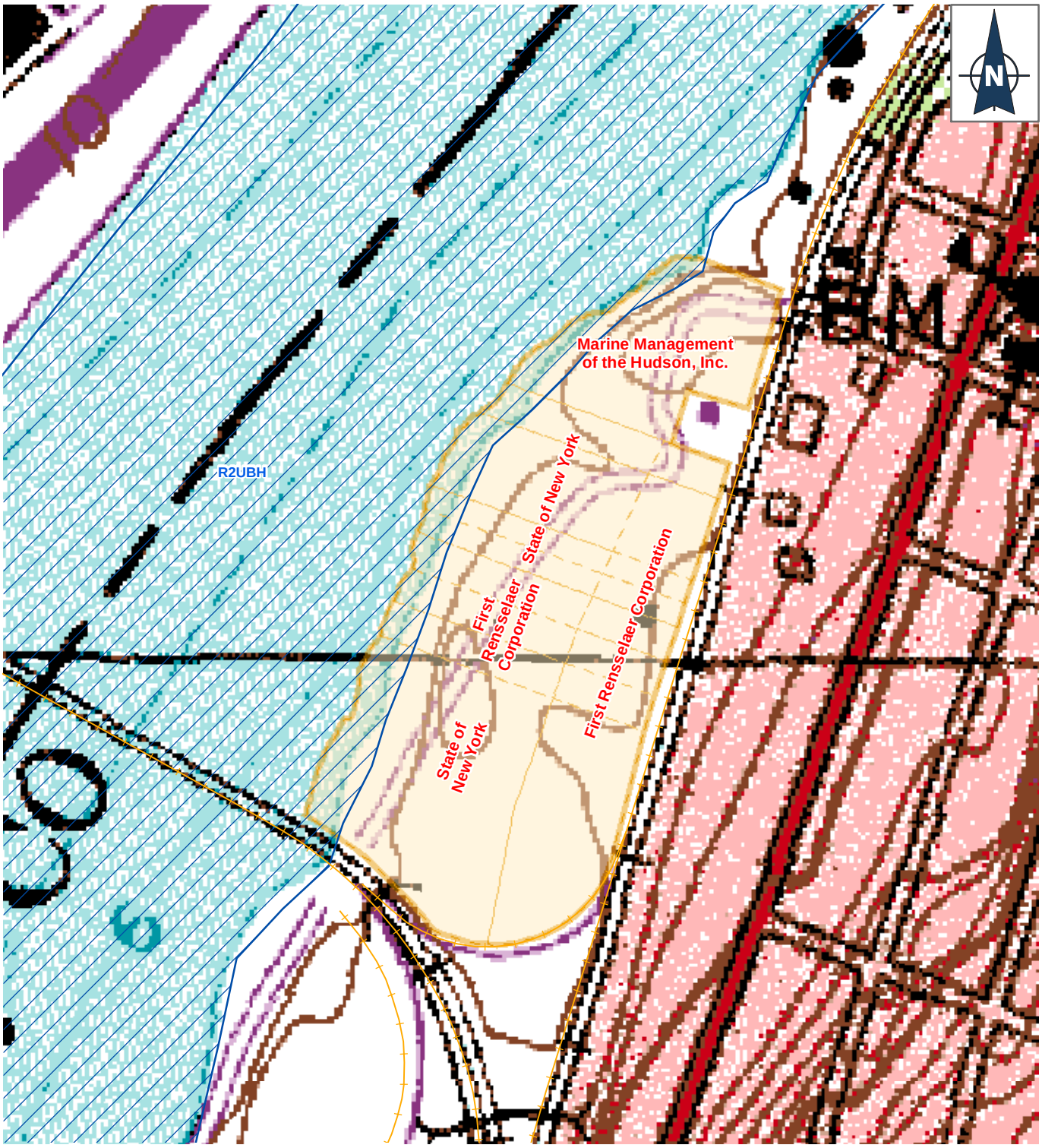
SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- NYS DEC Wetlands
- US Fish and Wildlife Wetlands

Due to the presence of "sensitive content," certain data/imagery is unavailable as directed by the NYS Office for Public Security.

Hudson River PCBs SUPERFUND SITE

Figure 3.2.6-4
Wetland Locations
State of New York / First Rensselaer / Marine Management

500 250 0 500 Feet

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The Rensselaer County Soil Survey was reviewed to determine the soil types mapped on this site (U.S. Department of Agriculture 1988). The mapped soil type within this site is udorthents, deep and excessively drained soils formed in recent fill deposits occurring on till and floodplains. Soils observed on-site had a large sand content and may have been spoils piles from river dredging activities. Site soils have been disturbed due to the extensive filling and dumping of trash and building materials.

Results of the Wetland Assessment

Field observations of site vegetation, soils, and hydrologic characteristics indicated that there are no areas on this site that meet the three-parameter approach outlined in the USACE *Wetland Delineation Manual*. Therefore, no wetlands were identified as occurring on-site. Mounding with municipal-type trash at the surface and in depressions was observed in the northern portion of the site. Several piles of surface debris consisting of glass, concrete blocks, roofing shingles, and tires were noted throughout the remainder of the site.

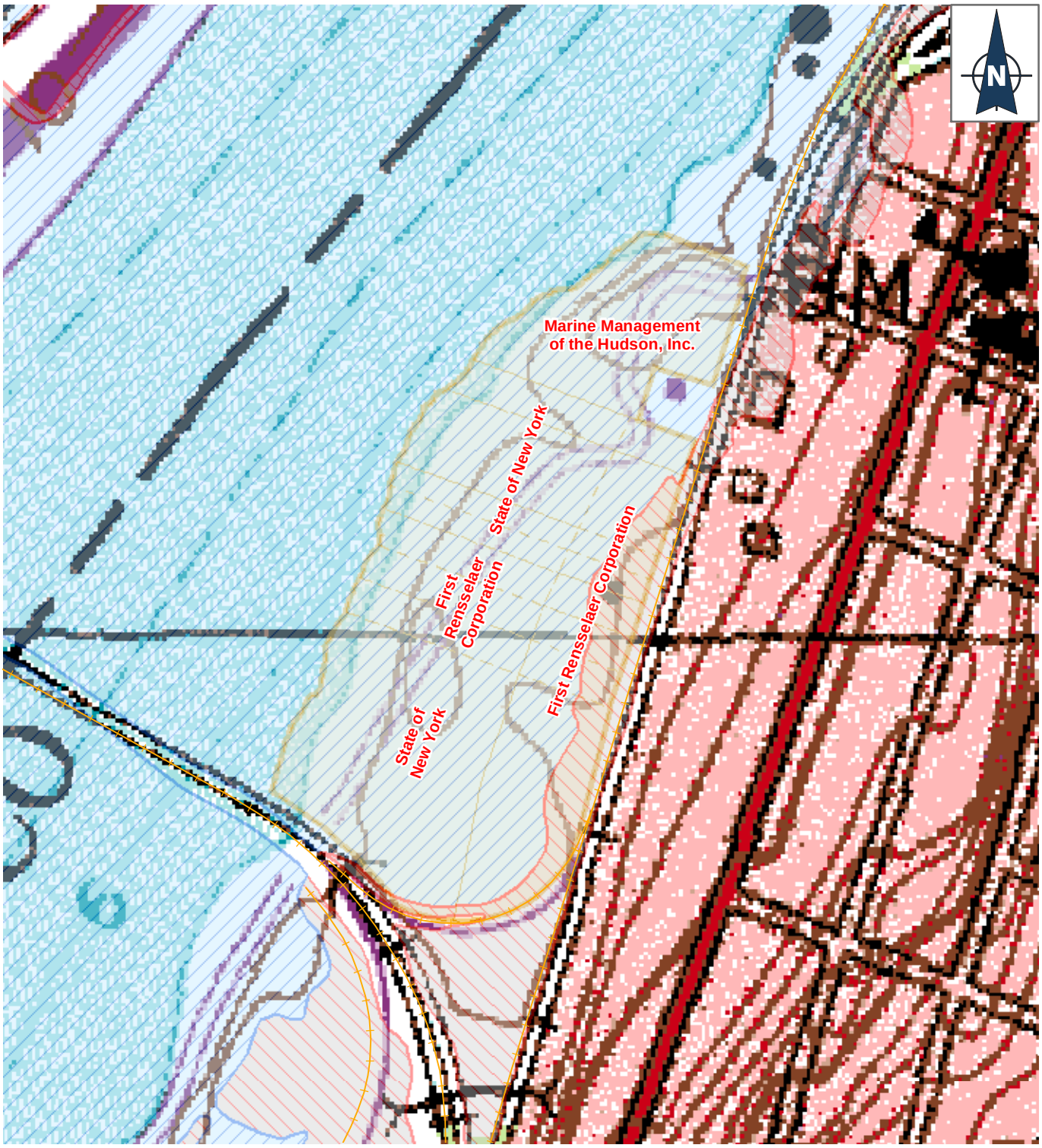
Species identified on the site include Norway maple (*Acer platanoides*), silver maple (*Acer saccharinum*), poison ivy (*Toxicodendron radicans*), tree of heaven (*Ailanthus altissimo*), American bitter-sweet (*Celastrus scandens*), glossy buckthorn (*Rhamnus frangula*), Carolina buckthorn (*Rhamnus caroliniana*), eastern cottonwood (*Populus deltoides*), stinging nettle (*Urtica dioica*), red mulberry (*Morus rubra*), green ash (*Fraxinus pennsylvanica*), and spotted jewelweed (*Impatiens capensis*).

3.2.6.7 Floodplain Assessment

An initial floodplain assessment was conducted on the State of New York/First Rensselaer/Marine Management site in order to determine the presence, extent, and orientation of FEMA-mapped floodplains within site boundaries. Flood magnitudes and historic river stages from gauging stations as close as available to the site were examined to obtain an initial sense of the characteristics of on-site flooding.

Figure 3.2.6-5 shows that portions of the site are located within the 100-year and 500-year floodplains. The site is located on the east side of the Hudson River in the City of Rensselaer. The site is located almost entirely within the 100-year floodplain, with the exception of a narrow strip of land along the eastern boundary. This latter area is mapped as occurring within the 500-year floodplain. The entire width (~575 feet) of the northern portion of the site is within the 100-year floodplain. Approximately 89.8% (14.9 acres) of the total area is within the 100-year floodplain and approximately 16.6 acres (100% of the total site area) is within the 500-year floodplain.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Potential Site Boundary
- Tax Parcels

FEMA Floodplain

- 100 Year Floodplain
- 500 Year Floodplain

Due to the presence of "sensitive content," certain data/imagery is unavailable as directed by the NYS Office for Public Security.

Hudson River PCBs SUPERFUND SITE

Figure 3.2.6-5
FEMA Floodplain Mapping
State of New York / First Rensselaer / Marine Management

500 250 0 500 Feet

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The closest gauge station with historic flow data is the Troy gauge station (per the National Weather Service station TRYN6, which is also the same as the USGS station 01358000 on Green Island), approximately 7 miles upstream of the site location. Flood magnitudes were calculated from 57 years of flow data at the Troy/Green Island gauge station.

No 100-year flood has occurred in the 57 years of modern data at the Troy/Green Island gauge station. In that time, there have been five flow events greater than a 10-year flood, including three that were also greater than a 20-year flood (December 31, 1948; March 14, 1977; and January 20, 1996).

The elevations of the site were reviewed using contour information and aerial photography to determine an approximation of how a 100-year flood would affect the site. It was determined that, in the event of a 100-year flood, the river frontage would be under approximately 20 feet of water.

While the probability of a 20-foot inundation event (100-year flood) is remote, there is the possibility of flooding on a smaller scale. The Flood Insurance Study shows the 10-year flood profile in the vicinity of the site to be 15 feet National Geodetic Vertical Datum (NGVD). The study indicates that flooding may occur during any season. However, the majority of major floods have occurred during the months of February, March, April, and May. Through the time of the report (1979), the five worst floods on the Hudson River that caused damage in the City of Rensselaer were identified as February 1900 (80-year flood), March 1902 (50-year flood), March 1913 (120-year flood), March 1936 (33-year flood), and January 1949 (30-year flood).

The facility design will have to consider the presence and extent of the 100-year floodplain across the site.

3.2.6.8 Coastal Management Area Assessment

The State of New York/First Rensselaer/Marine Management site is located within the state-defined Hudson River Coastal Management Area. In addition, the City of Rensselaer has an approved LWRP (City of Rensselaer 1987). The state CMP provides for policies and procedures on development and other activities within the state-defined coastal zone. The Rensselaer LWRP provides additional purposes and objectives of the city's planned uses for the Rensselaer coastal zone.

If the State of New York/First Rensselaer/Marine Management site were selected as a site for the Phase 1 and Phase 2 dredging, the siting of a sediment processing/transfer facility at this location would be consistent with state CMP development policies to revitalize underutilized waterfront areas for commercial and industrial uses (Policy 1) and to facilitate the siting of water-dependent uses and facilities on or adjacent to coastal waters (Policy 2). It is anticipated that the layout, construction, and operation of the facility at the site would not have an adverse effect on other relevant policies of the state CMP.

EPA will prepare an additional phase of its coastal zone consistency determination, covering potential indirect and cumulative impacts from the operation of sediment processing/transfer facilities, once the Phase 1 and Phase 2 dredging facility locations are selected.

However, locating the sediment processing/transfer facility at this site may not be consistent with the Rensselaer LWRP. The area encompassing the site is currently zoned as commercial/industrial, but the Rensselaer LWRP states that "residential and associated open space use here would be more consistent with the City's stated efforts to concentrate commercial/industrial development to the west and south of the Conrail tracks, with residential neighborhood stabilization and revitalization encouraged elsewhere in the City" (City of Rensselaer 1987). Consequently, the use of this site for a sediment processing/transfer facility may not be consistent with the approved Rensselaer LWRP. Further analysis would have to be conducted to determine the consistency issue.

3.2.6.9 Baseline Habitat and Threatened and Endangered Species Assessment

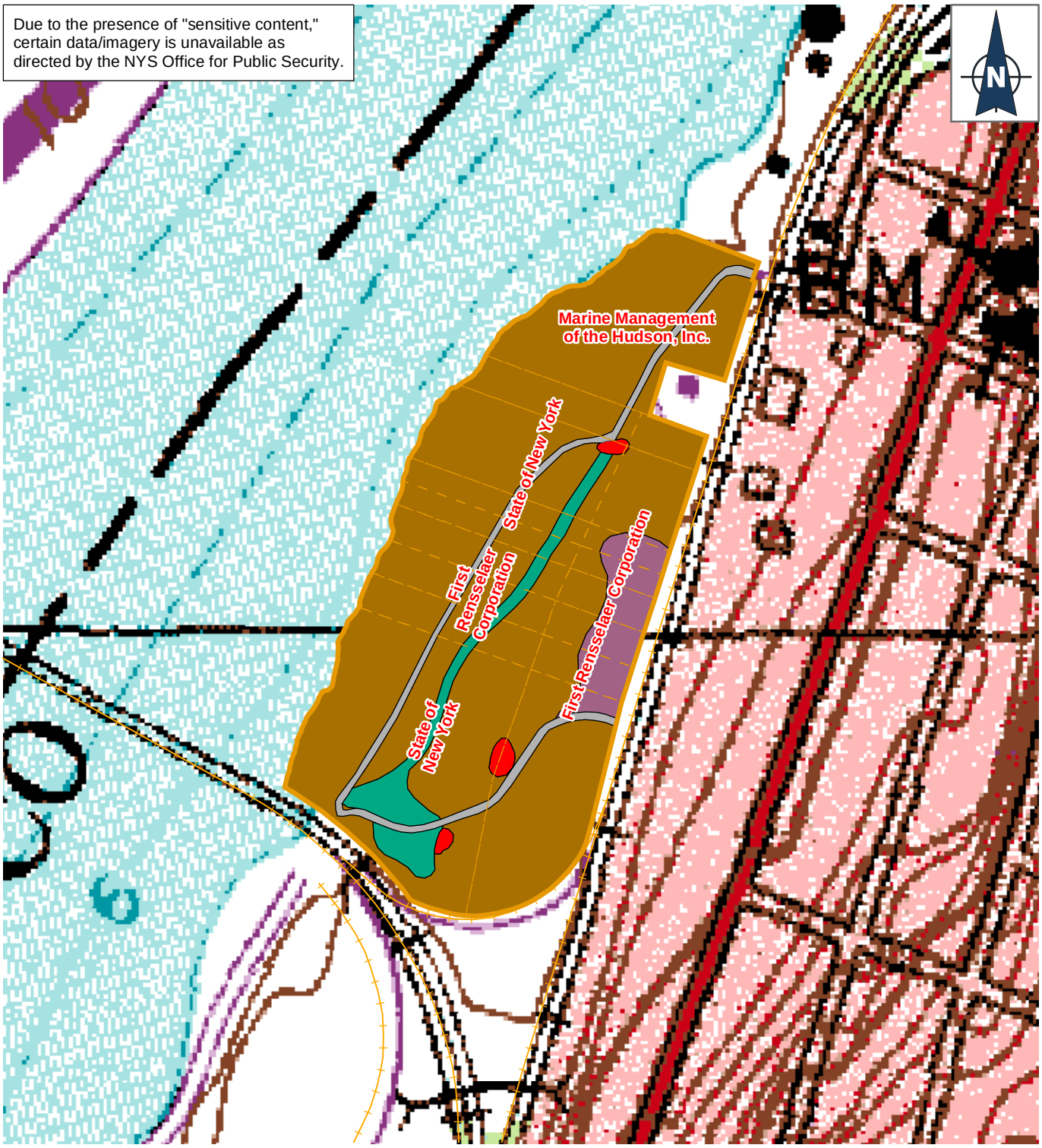
Site Habitat Description

Historic and current land uses have influenced the availability, extent, and diversity of on-site habitats. The site is situated on the east side of the river within the Rensselaer City limits. It appears to have been used historically and is actively used for surficial dumping. In addition, the shoreline appears to be occasionally used for angling. There are no facilities on the site except for a remnant concrete foundation adjacent to the railroad right-of-way. The majority of the habitats on-site are composed of early successional (less than 20 years) to mid-successional (20 to 60 years) vegetation communities. It was noted that a number of trees in the Appalachian oak hickory forest are late successional in age (greater than 60 years).

Using *Ecological Communities of New York State* (Edinger et al. 2002) as a framework for habitat identification, five community types are found on this 17-acre site (see Figure 3.2.6-6); no sensitive or rare habitats are among them. The dominant community type is a successional northern hardwood community that accounts for approximately 84% of the site. Other communities include Appalachian oak hickory forest, successional old field, and mowed pathways along a partially maintained power line right-of-way,

Common vegetation species and the community structure of the site have an influence on wildlife occurrence on-site. Given the small size of the site (16 acres) and the proximity of the site to urban development (i.e., the City of Rensselaer), the site's use by wildlife species is limited. Wildlife observed included gray squirrel, raccoon, and common songbirds.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



Ecological Communities

- Unpaved Road
- Successional Northern Hardwoods
- Appalachian Oak-Hickory Forest
- Mowed Pathway / Successional Old Field
- Landfill / Dump

Hudson River PCBs SUPERFUND SITE

Figure 3.2.6-6
Site Ecological Communities
State of New York / First Rensselaer / Marine Management

500 250 0 500 Feet

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Endangered Species Act Issues

Shortnose sturgeon is identified as a federally listed and state-listed species that could potentially seasonally occur near the site. Shortnose sturgeon habitat extends from the mouth of the Hudson River in New York City to the Federal Dam at Troy (upstream from the site). Coordination and consultation with NYSDEC and the National Marine Fisheries Service (NMFS), as part of the facility siting process and for developing the details of a biological assessment document for the Hudson River PCBs Superfund Site project, revealed that the portion of the river in the vicinity of the site is a known spawning area for shortnose sturgeon.

A biological assessment will be prepared to examine any potential impacts to shortnose sturgeon as a result of the construction and operation of a sediment processing/transfer facility at this site. The biological assessment will include a literature review and any pertinent studies that are related to the habitat near this site as well as life history information on the shortnose sturgeon.

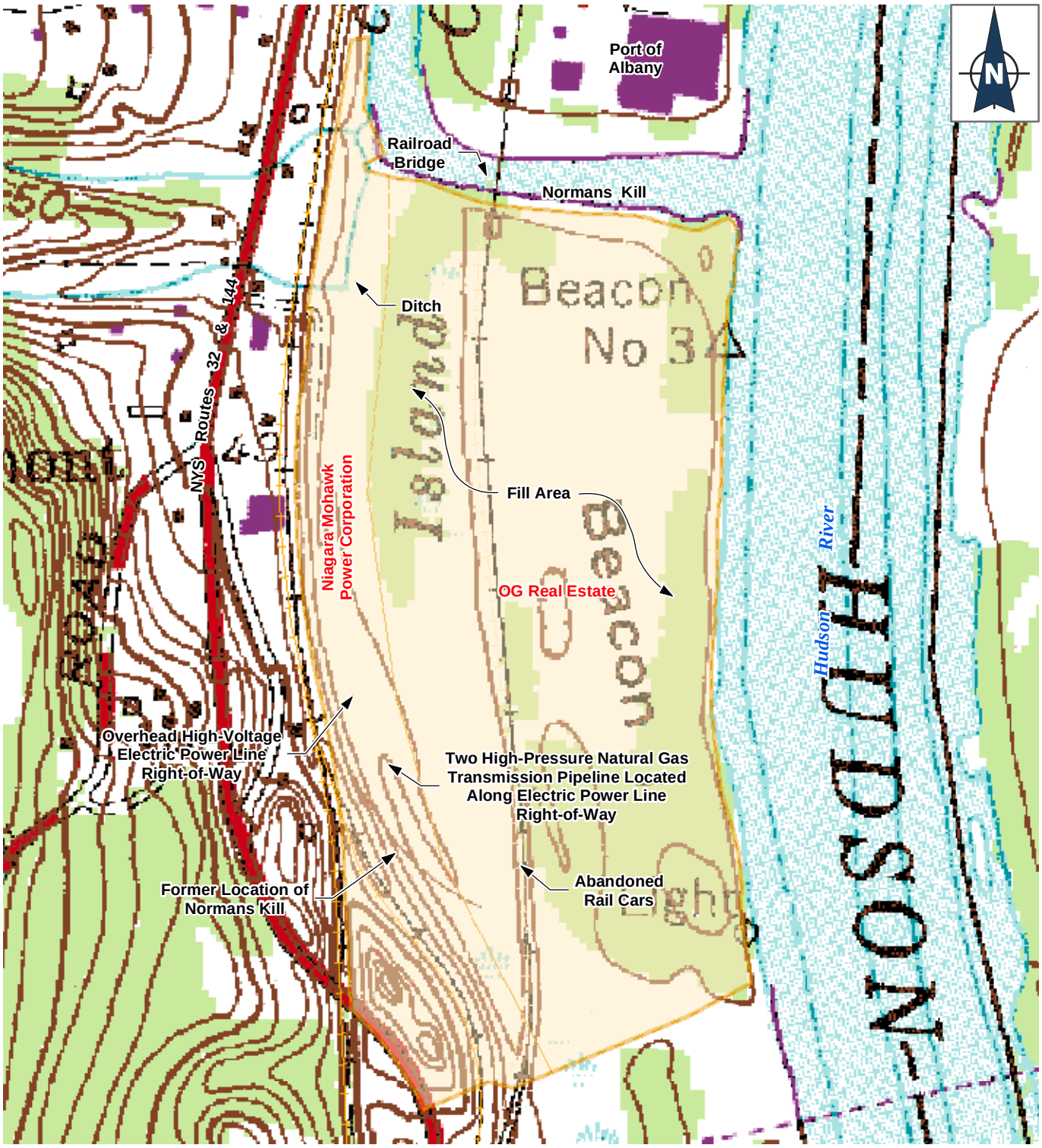
In conclusion, the baseline habitat and endangered species assessments findings do not appear to represent any potential significant limitations that would affect the construction and operation of a sediment processing/transfer facility.

3.2.7 OG Real Estate

3.2.7.1 Phase I ESA

The site is currently vacant and is located in an industrial area on the west side of the Hudson River. It is generally characterized by little topographic relief, extensive river frontage, and the presence of an abandoned rail line. River Road and Old River Road parallel the western edge of the site, but site access is limited as the site is separated from local roads by railroad tracks and parcels that parallel the roads. A small area in the southwest corner of the site is adjacent to River Road. Within 1 mile to the west is a combination of commercial and residential land uses and Interstate Route 87. An unpaved, overgrown access road traverses the eastern side of the site. To the south of the site is a gas-powered electrical generation plant owned by PSEG Power, LLC. The site is vegetated by forbs and includes tree stands throughout. Forested areas occur along the river and within the western one-third of the site. Weathered shale outcrops in the southwestern portion of the site and forms a ridge that extends northward, adjacent to an active rail line that extends parallel to the site's western border. Key site features are presented on Figure 3.2.7-1. The site is reportedly the former coal ash (bottom ash/fly ash) fill site of the former Niagara Mohawk power plant that is adjacent to the southern side of the site. Normans Kill was re-routed past a marina to the north in 1952, leaving a ditch behind and an island between the ditch and the old shoreline. Niagara Mohawk filled in this ditch with ash from 1952 till 1970, eliminating the island. Riprap and wood piling shore stabilization were observed along the river edge.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Approximate Site Boundary
- Tax Parcel Boundary
- Active Railroad
- Abandoned Railroad

Due to the presence of "sensitive content," certain data/imagery is unavailable as directed by the NYS Office for Public Security.

Hudson River PCBs SUPERFUND SITE

Figure 3.2.7-1
Key Site Features
OG Real Estate

500 250 0 500 1,000
Feet

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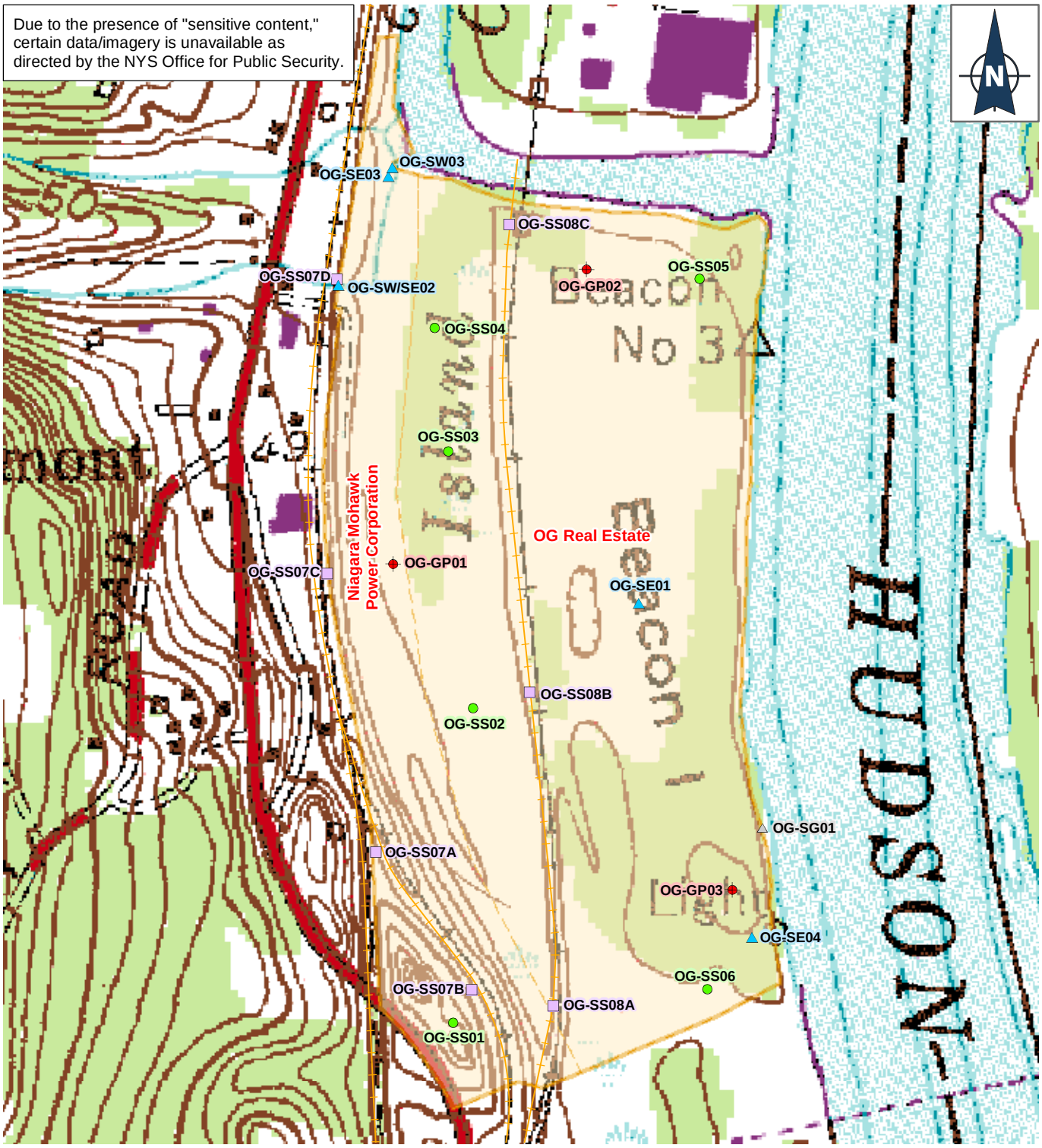
Various site investigations have been performed. In 1979 Recra Research, Inc. and Wehran Engineering, P.C. conducted a hydrogeologic investigation, including a water quality assessment for Niagara Mohawk Power Corporation. In 1982, Empire Soils Investigations, Inc. performed a preliminary geotechnical engineering evaluation of the proposed on-site ash disposal area for the Albany Steam Generating Station for Niagara Mohawk. In the mid-1990s, Law Engineering and Environmental Services performed additional site investigations (Law Environmental Consultants, Inc. 1996; 1997). These reports describe a late-1997 groundwater quality assessment and a late-1991 wetland delineation. The Law Engineering report presents groundwater elevation information, hydraulic conductivity results, and maps of the extent of the bottom ash/fly ash. They report the tidal fluctuation of the Hudson River at 3.37 feet with a fluctuation of up to 2.38 feet in nearby groundwater monitoring wells. They also report that the studies conducted between 1979 and 1988 show that the quality of the groundwater is generally good and that New York State Groundwater Quality Standards are generally only exceeded for iron and manganese. Soil analyses reported by Law indicate that there are localized variations in metals concentrations and that at one location the New York State guidance value for benzene and toluene was exceeded. Several groundwater monitoring wells installed during the abovementioned investigations remain on-site. In addition, Wilson Environmental Technologies, Inc. performed wetland delineation at the site in 2000.

3.2.7.2 Phase II ESA

The environmental investigations at this site included collecting eight surface soil samples, two surface water samples, four sediment samples, three subsurface soil samples, three groundwater samples from newly installed temporary monitoring wells, and the installation of one stream gauge for hydrologic monitoring purposes (see Figure 3.2.7-2). Geotechnical soil testing was not performed at this site because available existing information was sufficient.

The only parameters that exceeded screening criteria were PAHs in surface soils OG-SS01 (ash), OG-SS05 (drum area), and OG-SS07 and -SS08 (adjacent to rail spurs) and sediments (OG-SE02 and -SE03) from the creek in the northwest portion of the site; one pesticide (beta-BHC) in the sediment from the creek (OG-SE03); and various metals in all sample media. In addition to these compounds, the following compounds were detected above screening levels: one SVOC (carbazole) and two herbicides (dichlorprop and 2,4-DB) in surface soils adjacent to the rail spurs. Most of these compounds are typical for sites containing ash, rail lines, and light industrial dumping. The presence of metals above screening levels is discussed below. Phase II ESA sample locations are presented on Figure 3.2.7-2.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Geoprobe Soil Boring
- Geoprobe Soil Boring & Temporary Well
- Geoprobe & Geotechnical Boring
- Geotechnical Boring
- Surface Soil
- Soil Sample Adjacent to Railroad
- Surface Water / Sediment
- Stream Gauge
- Railroads
- Potential Site Boundary

Hudson River PCBs SUPERFUND SITE

Figure 3.2.7-2
Sample Locations
OG Real Estate

500 250 0 500 1,000 Feet

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In general, metals in OG-SS02, OG-SS03, OB-SS04, and OG-SS06 (arsenic and nickel and vanadium in OG-SS06) and OG-SS08 (copper and nickel) are noticeably higher than overall site levels. Also, of the metals that exceeded the NYSDEC TAGM guidance values, most were only slightly above the eastern U.S. background levels. However, copper, vanadium, and nickel were detected up to 13 times, 30 times, and 90 times higher, respectively, than eastern U.S. background levels. Therefore, it appears that higher levels of metals occur adjacent to the rail lines and throughout the site from the ash. The metals exceeding criteria in the subsurface soils are generally below eastern U.S. background, except for arsenic, which was four times higher than eastern U.S. background in OG-GP01 (collected from 2.5 to 4 feet BGS, as opposed to the other samples, which were collected at greater than 14 feet BGS). This is likely due to the presence of fly ash. Of the metals exceeding criteria in surface water (iron) and groundwater (arsenic, iron, and manganese, and sodium), most are naturally occurring metals (all except arsenic). The concentration of arsenic above screening levels in the groundwater is likely attributable to the ash. The sediment contained arsenic, copper, iron, lead, mercury, and silver above low-effect levels and nickel above severe-effect levels. This is also likely attributable to the presence of ash across the site.

The levels of contaminants detected in the sampled media from this site are typically associated with ash and light industrial disposal areas. It appears the ash fill has impacted surface and subsurface soils, sediment, and groundwater at the site and may pose potential limitations to the construction and operation of a sediment processing/transfer facility. However, it is expected that subsurface conditions in areas where fill is present could be addressed during design.

3.2.7.3 Geotechnical Assessment

Geotechnical samples were not collected at this site because such data were available from other studies. However, subsurface geology was investigated at three locations (OG-GP01 - OG-GP03) during soil investigations for environmental sampling. Using DPT, a 4-foot soil collection interval was used to collect a continuous soil profile from the ground surface to approximately 25 feet BGS.

Soil strata were similar across the site. East of the power line right-of-way, layers of silt and very fine sand underlie the site topsoil to a depth of approximately 24 feet, where a layer of gravel with intermixed sand and clay extends to a depth of at least 56 feet. Similar silts and very fine sands are also present at the northern end of the site to a depth of at least 25 feet and at the southern end of the site to a depth of approximately 16.5 feet. The southern silt and sand layers are underlain by approximately 3 feet of clay, beneath which lies sand to a depth of at least 25 feet.

Previous investigations show that in the area west of the railroad spur that bisects the property (in a north-south direction) fly ash fill is present in an elliptical shape, with depths ranging from ground surface at the outer ends to 18.5 feet in the center. East of the railroad spur, Law reports ash thickness in approximately the

southern two-thirds of the site as varying in thickness from the ground surface at the perimeter to 27.5 feet in the center. In the January 1997 report, Law also provides geologic cross section data that shows ash paralleling the Hudson River shoreline, west of the railroad, with combinations of silt, clay, and fine sand. Ash was not encountered in the northern end of the site. A sand and gravel fill overlies a silt and clay layer, which in turn is underlain by a much thicker bed of silty fine sand and gravel. Silty fine sand underlies the entire site. Law's east-west cross section of the site shows two distinct ash deposits separated by the railroad spur, which sits atop a silty fine sand and a silty clay layer. This cross section also shows silty fine sand underlies the entire site. Law's cross section of the site's southern end indicates silt and clay underlie the entire end. Adjacent to the Hudson River, a silty fine sand lies between the ash deposit and the silt and clay. Further inland, a silty clay and fine sand deposit lies between the ash and the underlying silt and clay. Wooden pilings and riprap were noted along most of the river bank, presumably for erosion control.

Recra Research, Inc. and Wehran Engineering, P.C. (1979) indicated that the ash was placed as a slurry and is soft, exhibiting engineering characteristics similar to soft silt. However, they also report that it has a lower density and different surface characteristics that cause it to be somewhat more pervious to water and somewhat more compressible than a similar depth of natural silts.

A preliminary geotechnical engineering evaluation for the site was prepared by Empire Soils (1982). In addition to subsurface geologic boring data to depths of nearly 100 feet, recorded on soil boring logs, it also provides geotechnical evaluation such as slope stability analysis, settlement analysis, and a clay deposit characterization. It also provides compression test data and permeability test data.

The geotechnical conditions (shallow groundwater and thick deposits of ash) may pose geotechnical limitations that would affect the construction and operation of a sediment processing/transfer facility. However, it is expected that subsurface conditions in areas where fill is present could be addressed during design.

3.2.7.4 Utility Assessment

Utilities identified at the OG Real Estate site include the following:

- A high-voltage overhead Niagara Mohawk electrical power transmission line right-of-way runs north-south through the center of the site.

- Two high-pressure natural gas transmission pipelines (Dominion Gas and Niagara Mohawk Gas) are located within the Niagara Mohawk electrical power line corridor.

- The Town of Bethlehem reports that they operate subsurface sewer and water service lines located on the west side of Route 144. Route 144 is located west and south of the site.

The utility assessment findings do not appear to represent significant limitations that would affect the construction and operation of a sediment processing/transfer facility. However, it is expected that utilities will be further evaluated during design.

3.2.7.5 Archaeological and Architectural Investigations

Preliminary Archaeological Assessment

Based on the background research performed during PCS evaluation, the OG Real Estate property was considered to have a high potential for archaeological resources. The Phase IB Survey and the previous investigations conducted on the site disproved the preliminary assessment.

Archaeological Investigations

Phase I investigations were previously completed by Dr. Edward V. Curtin (Curtin September 2003) for the OG Real Estate property. Additional investigations were not recommended. These recommendations have been accepted by the OPRHP.

A small portion of this site was not previously included in Dr. Curtin's investigation. It was surveyed on November 15, 2003 (see Figure 3.2.7-3). This area was a high hill overlooking the Hudson River. It appeared that the southern two-thirds of this hill had been blasted or excavated away. A foundation and mortared brick cistern were found in this area, but shovel testing near these features found no other cultural resources.

The Phase I field investigation is complete for this FCS.

Geomorphological Investigations

This site required no deep testing.

Architectural Assessment

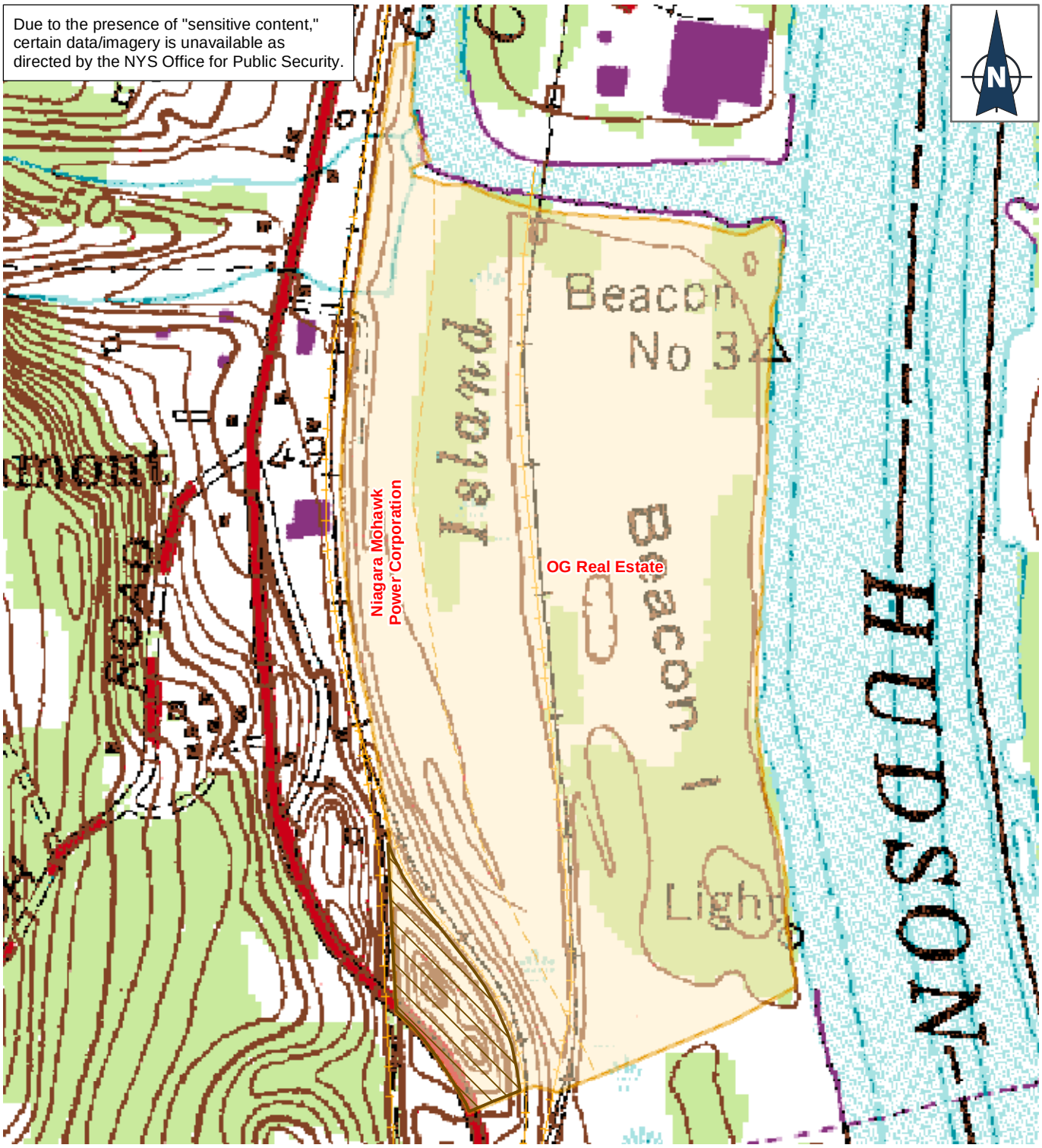
There are no architectural concerns at this site.

In conclusion, this site offers no cultural resources limitations. No further investigations are recommended.

3.2.7.6 Wetland Assessment

Wetland determinations/delineations were not conducted on the OG Real Estate property as part of the field site-specific field investigations of the FCSs. A Section 404 Wetland Delineation Report, prepared by Wilson Environmental Technologies, Inc (2000) and recently approved by the USACE, mapped wetlands that were observed during habitat assessment fieldwork on October 15, 2003. Applicable wetland data (e.g., soil surveys, NWI mapping, etc.) were reviewed beforehand to provide background information.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

Backhoe Trench Locations

Archaeological Testing Method

Backhoe Test
Shovel Test
Backhoe & Shovel Test
Potential Site Boundary

[1] Most of This Site Was Previously Surveyed By Dr. Edward Curtin

Hudson River PCBs SUPERFUND SITE

Figure 3.2.7-3
Field Sampling Areas[1]
Phase I B Cultural Resources Investigation
OG Real Estate

500 250 0 500 1,000 Feet

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Review of NWI mapping indicated the site contained approximately 57.63 acres of wetlands. NYSDEC wetland mapping identified one wetland encompassing 73.14 acres of the site. This wetland was identified as freshwater wetland D-6. However, the Wilson Environmental Technologies, Inc. report contains a letter from NYSDEC indicating that wetland D-6 was mapped in error and was in the process of being removed from their wetland mapping database.

Results of the Wetland Assessment

The result of the Wilson Inc. delineation and the subsequent USACE site visit was the identification of three wetlands, totaling 0.92 acres (see Table 3.2.7-1 and Figure 3.2.7-4). The substantial change in wetland acreage, in part, is the result of recognizing that the years of previous fly ash disposal have disturbed site soils to the point that they are not considered to be wetland soils. Two wetlands in the southeastern portion of the site were located along the shoreline approximately 15 feet below the prevailing elevation of the site in the area. Although not fully identified in the Wilson Inc. report, these areas are believed to be riparian emergent wetlands subject to frequent inundation, based on river stage. The third wetland (Wetland C) is located near the shoreline in the northeastern corner of the site. This wetland is a forested floodplain area, likely subject to seasonal inundation.

Table 3.2.7-1 OG Real Estate Wetland Summary

Wetland ID	Community Type	Acreage
Wetland A	Riverine Emergent	0.16
Wetland B	Riverine Emergent	0.55
Wetland C	Forested	0.21
Total Acreage		**0.92**

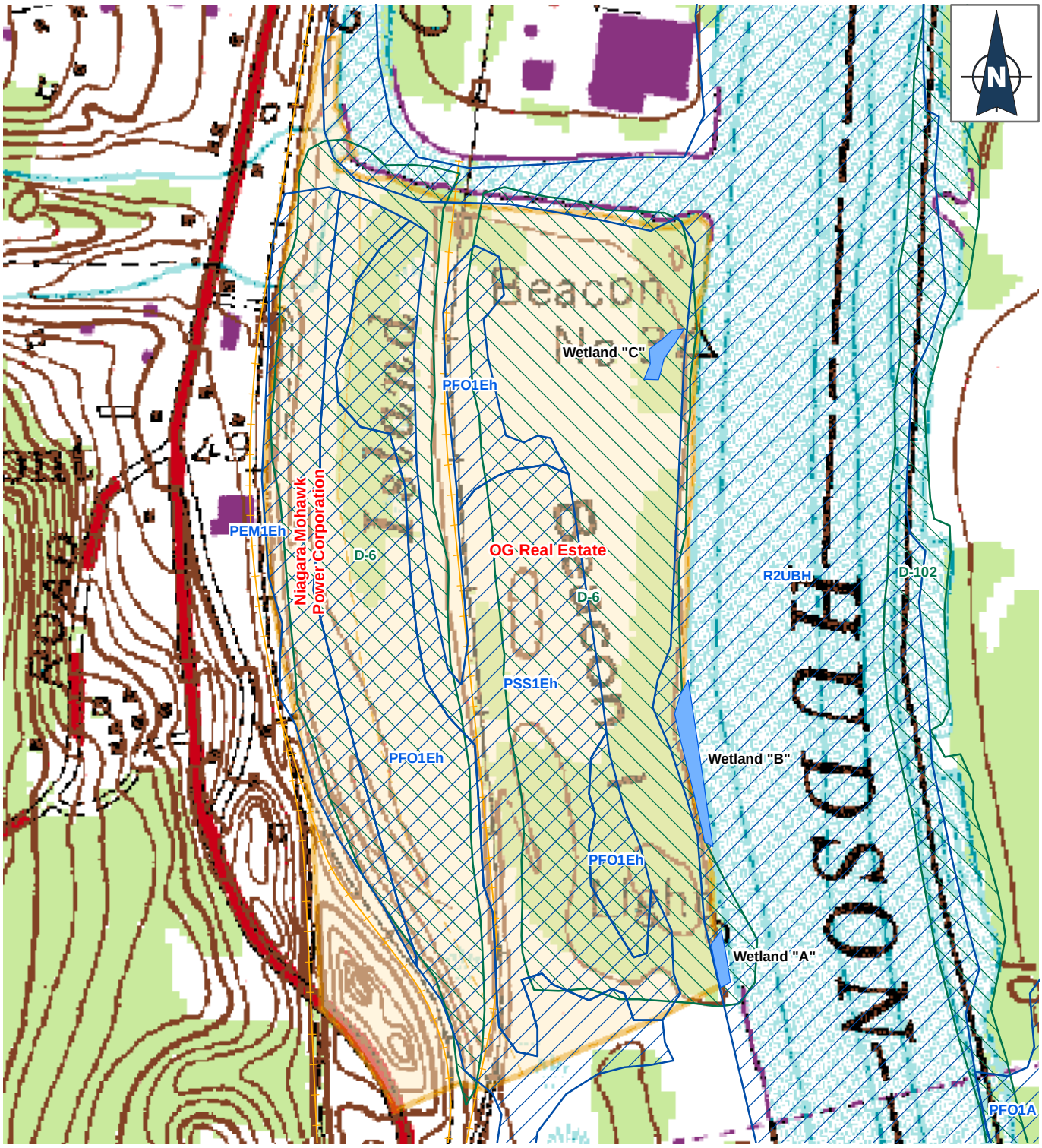
The dominant species in site wetlands is common three-square (*Scirpus americanus*). Other species include quaking aspen (*Populus deltoides*), narrowleaf cattail (*Typha angustifolia*), three-square bulrush (*Scirpus pungens*), common buckthorn (*Rhamnus catharatica*), Asiatic bittersweet (*Celastrus orbiculatus*), and purple loosestrife (*Lythrum salicaria*).

In conclusion, the wetland assessment findings do not appear to represent any potential significant limitations that would affect the construction and operation of a sediment processing/transfer facility. Facility design will involve avoiding and minimizing impacts on wetlands, when practicable.

3.2.7.7 Floodplain Assessment

An initial floodplain assessment was conducted on the OG Real Estate site in order to determine the presence, extent, and orientation of FEMA-mapped floodplains within site boundaries. Flood magnitudes and historic river stages from gauging stations as close as available to the site were examined to obtain an initial sense of the characteristics of on-site flooding.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- NYS DEC Wetlands
- US Fish and Wildlife Wetlands
- Previous Wetland Delineation

Due to the presence of "sensitive content," certain data/imagery is unavailable as directed by the NYS Office for Public Security.

Hudson River PCBs SUPERFUND SITE

Figure 3.2.7-4
Wetland Locations
OG Real Estate

500 250 0 500 1,000 Feet

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Figure 3.2.7-5 shows that a majority of the OG Real Estate site occurs within the 100-year and 500-year floodplains. The site is located on the west side of the Hudson River in the Town of Bethlehem. The site is mapped as occurring almost entirely within the 100-year floodplain, except for a portion in the southwest corner and a narrow strip of land along the western site boundary. Approximately 92.5% (87.8 acres) of the site is within the 100-year floodplain.

The closest gauge station with historic flow data is the Troy gauge (per the National Weather Service station TRYN6, which is also the same as USGS station 01358000 on Green Island). The Troy/Green Island gauge station is approximately 10 miles upstream of the OG Real Estate site.

Flood magnitudes were calculated from 57 years of flow data at the Troy/Green Island gauge station. This data indicates that no 100-year flood has occurred in the 57 years of modern data. In that time, there have been five flow events greater than a 10-year flood, including three that were also greater than a 20-year flood (December 12, 1931; March 14, 1977; and January 20, 1996).

The elevations of the site were reviewed using contour information and aerial photography to determine an approximation of how a 100-year flood would affect the site. It was determined that, in the event of a 100-year flood, the river frontage would be under approximately 19 feet of water.

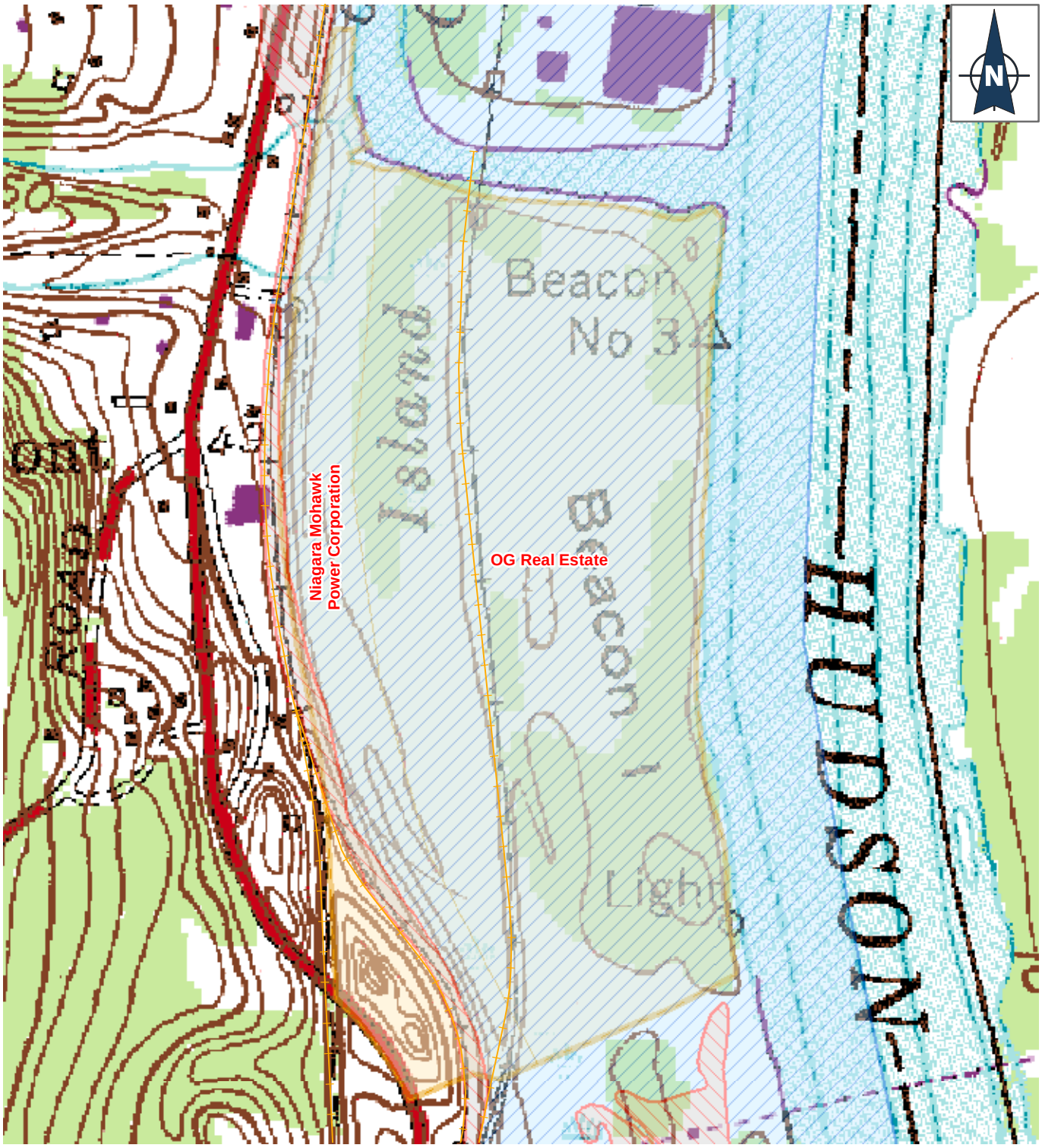
While the probability of a 19-foot inundation event (100-year flood) is remote, there is the possibility of flooding on a smaller scale. The Flood Insurance Study shows the 10-year flood profile in the vicinity of the site to be 13 feet NGVD. The study indicates that flooding may occur during any season. However, the majority of major floods have occurred during February, March, April, and May. Through the time of the report (1983), the five worst floods on the Hudson River that caused damage in the City of Rensselaer were identified as February 1900 (80-year flood), March 1902 (50-year flood), March 1913 (120-year flood), March 1936 (35-year flood), and January 1949 (30-year flood).

In conclusion, the floodplain assessment findings appear to represent a potential limitation that would affect the construction and operation of a sediment processing/transfer facility. The facility design will have to consider the presence and extent of the 100-year floodplain across the site.

3.2.7.8 Coastal Management Area Assessment

The OG Real Estate site is located within the state-defined Hudson River Coastal Management Area. In addition, the City of Albany has an approved LWRP (City of Albany 1991). The state CMP provides for policies and procedures on development and other activities within the state-defined coastal zone. The Albany LWRP provides additional purposes and objectives of the city's planned uses for the Albany coastal zone.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Potential Site Boundary
- Tax Parcels

FEMA Floodplain

- 100 Year Floodplain
- 500 Year Floodplain

Due to the presence of "sensitive content," certain data/imagery is unavailable as directed by the NYS Office for Public Security.

Hudson River PCBs SUPERFUND SITE

Figure 3.2.7-5
FEMA Floodplain Mapping
OG Real Estate

500 250 0 500 1,000
Feet

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If the OG Real Estate site were selected as a site for the Phase 1 and Phase 2 dredging, the siting of a sediment processing/transfer facility at this location would be consistent with the state CMP development policies to revitalize under-utilized waterfront areas for commercial and industrial uses (Policy 1) and to facilitate the siting of water-dependent uses and facilities on or adjacent to coastal waters (Policy 2). It is anticipated that the layout, construction, and operation of the facility at the OG Real Estate site would not have adverse effects on other relevant policies of the state CMP.

EPA will prepare an additional phase of its coastal zone consistency determination, covering potential indirect and cumulative impacts from the operation of sediment processing/transfer facilities, once the Phase 1 and Phase 2 dredging facility locations are selected.

The OG Real Estate site is located in the Town of Bethlehem, outside the Albany City limits. The Albany LWRP southern boundary is the centerline of Normans Kill, just north of the OG Real Estate site boundary. Thus, the OG Real Estate site is not within the area defined as including the City of Albany LWRP. In addition, the existing location of industrial facilities north (Port of Albany) and south (Niagara Mohawk power plant) of the OG Real Estate would likely preclude any negative impacts associated with further development of water-dependent industrial uses in this area. Consequently, if the OG Real Estate site were selected as a Recommended Site, consistency with the state CMP could be attained.

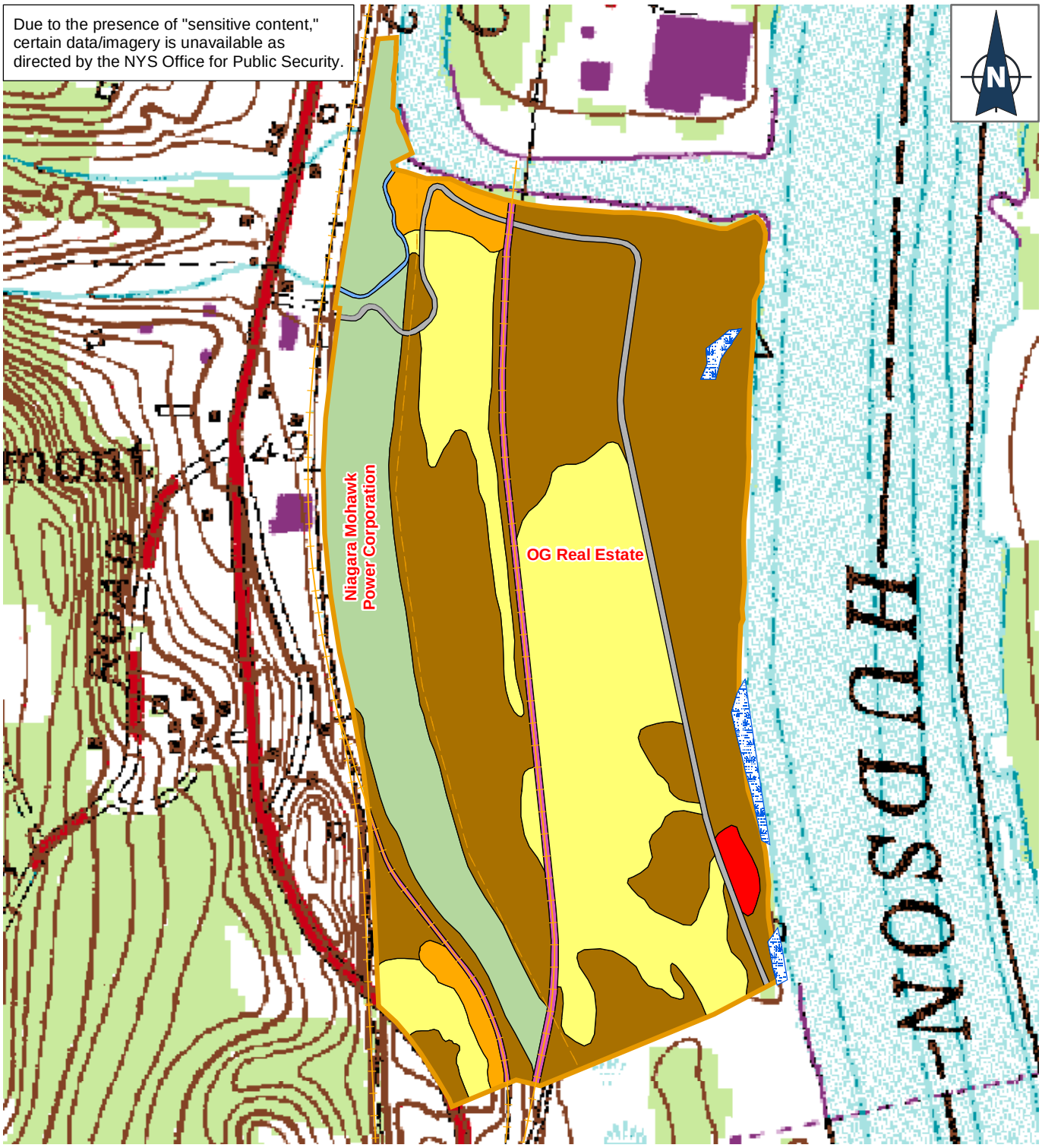
3.2.7.9 Baseline Habitat and Threatened and Endangered Species Assessment

Site Habitat Description

Historic and current land uses have greatly influenced the availability, extent, and diversity of on-site habitats. The site is situated on the west side of the river, just south of the confluence of Normans Kill with the Hudson River and the Port of Albany. This site was formerly used for dumping ash from the Niagara Mohawk power plant that is adjacent to the south end of the site. Normans Kill historically traversed the site but was rerouted past a former marina to the north, leaving an island between the ditch and the old shoreline. Niagara Mohawk then filled in the ditch with ash, eliminating the island. Currently, there are no active uses of the site. Given the historic and current site uses, the majority of the site is disturbed and consists of successional northern hardwoods and successional old field community types. The majority of the habitats on-site are composed of early successional (less than 20 years) to mid-successional (20 to 60 years) vegetation communities. Some bottomland-forested areas near the shoreline are late successional in age (greater than 60 years); cottonwoods are the dominant mature trees.

Using *Ecological Communities of New York State* (Edinger et al. 2002) as a framework for habitat identification, nine community types are found on this 95-acre site (see Figure 3.2.7-6). No sensitive or rare habitats were among them.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



Ecological Communities

- Unpaved Road
- Wetland
- Successional Northern Hardwoods
- Successional Old Field / Mowed Pathway
- Successional Shrubland
- Successional Old Field
- Marsh Headwater Stream
- Railroad
- Landfill / Dump

Hudson River PCBs SUPERFUND SITE

Figure 3.2.7-6
Site Ecological Communities
OG Real Estate

500 250 0 500 1,000 Feet

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The dominant community type is a successional northern hardwood community that accounts for approximately 49% of the site. Other communities include successional old field, successional old field/mowed pathway, and successional shrubland communities.

There is one marsh headwater stream that traverses the northeast corner of the site. This stream is a low gradient, meandering channel, with dense vegetation (mainly *Phragmites australis*) along the streambank. Wetland communities occurring on-site are discussed in Section 3.2.7.6.

The site shoreline exhibits the characteristics of a tidally influenced river shore. The Hudson River below Federal Dam is exposed to daily tidal fluctuations. Most of the shoreline is shallow with a sand/gravel substrate. At low tides, shallow sandy flats are exposed. The southern end of the site has a 10- to 15-foot elevation change between the top of the bank and the shoreline. This grade gradually decreases heading north along the shoreline to an approximate 2- to 3-foot elevation change between the top of bank and the shoreline. Normans Kill, which is adjacent to the northern end, has relatively high (greater than 15 feet above water level), steep banks that appear to inhibit the flow of water from the creek to the site.

Common vegetation species and the community structure have an influence on wildlife occurrence on-site. Given the overall size of the site (91 acres), a variety of animal species use the site, including whitetail deer, waterfowl, and migrating passerines. The combination of forest and field habitats provides edge habitat and a range of food and cover types for a variety of species. Incidental wildlife observations included whitetail deer, gray squirrel, mallards, turkey vulture, and a variety of common songbirds.

Endangered Species Act Issues

Shortnose sturgeon is identified as a federally listed and state-listed species that could potentially seasonally occur near the OG Real Estate site. Shortnose sturgeon habitat extends from the mouth of the Hudson River in New York City to the Federal Dam at Troy (upstream from the site). Coordination and consultation with NYSDEC and NMFS, which have occurred as part of the facility siting process and for developing the details of a biological assessment for the Hudson River PCBs Superfund Site project, revealed that the portion of the river in the vicinity of the OG Real Estate site is a known spawning area for shortnose sturgeon. Bald eagles were also identified as a listed species that could potentially occur on the site. Coordination and consultation with NYSDEC and the USFWS, which have occurred as part of the facility siting process and for determining the details of a biological assessment for the Hudson River PCBs Superfund Site project, revealed that a pair of non-breeding bald eagles may be establishing a nest downriver and south of the site.

A biological assessment will be prepared to examine any potential impacts to shortnose sturgeon and the bald eagle as a result of the construction and operation of the sediment processing/transfer facility. The biological assessment will include a literature review and any pertinent studies that are related to the habitat near this site as well as life history information on the shortnose sturgeon and the bald eagle.

In conclusion, the baseline habitat and endangered species assessments findings do not appear to represent any potential significant limitations that would affect the construction and operation of a sediment processing/transfer facility.

3.3 Identification of the Group 3 Criteria

Group 3 criteria were developed from:

- Further evaluation of Group 1 and Group 2 criteria,
- Design-related information provided by the RD Team, and
- Field studies on each of the FCSs (with the exception of the Bruno and State of New York properties, where permission for intrusive sampling was not granted; see Section 3.1), which provided site-specific information that was used to further identify and evaluate site conditions, resources, and features (see Section 3.2).

3.3.1 Further Examination of the Group 1 and Group 2 Criteria

The following is a list of the Group 1 and Group 2 criteria that were applied in a more detailed manner and/or applied using a different approach to create Group 3 criteria.

- **Available Area** was previously evaluated as a Group 1 criterion, and it was assumed that an area of 10 acres would be necessary to support site operations. Preliminary design information from the RD Team has identified the following acreage requirements: a sediment processing/transfer facility to support hydraulic dredging has been estimated at 15 acres (5 acres for mechanical dredging) and 15 to 25 acres for the rail yard and facilities, depending on site configuration.

  Additional information gathered during the field investigations, the advancement of the design through the preliminary stage, and discussions with the RD Team have resulted in available space being evaluated in terms of "usable acreage." Usage acreage is a Group 3 criterion and refers to the area within a site that does not pose potential limitations to design. For instance, site topography in portions of some sites may adversely affect suitability for the development of waterfront or rail yard facilities. Other criteria limiting useable

acreage are evaluated separately (i.e., locations of wetlands and floodplains, environmental conditions, cultural resources, etc.).

- **River Access** was previously evaluated as a Group 1 criterion in the earlier phase of site evaluations. It was assumed that access was not constrained by in-river conditions or characteristics of shoreline and near-shoreline areas within the FCSs. Additional information gathered during the field investigations (both on land and in-river), the advancement of the design through the preliminary stage, and discussions with the RD Team have resulted in river access being evaluated in terms of "waterfront suitability." Waterfront suitability is a Group 3 criterion and takes into consideration whether the shoreline is adequate for construction of waterfront facilities and structures and river channel depths adjacent to the FCSs and the potential need for periodic navigational dredging. These considerations, in addition to proximity to dredge areas, will form the basis for evaluation of river access.

- **Rail Access** was evaluated as a Group 1 criterion, and in the earlier phase of evaluation it was assumed that access was not constrained by conditions or characteristics of the identified rail or within the FCS properties. Additional information gathered during the field investigations, the advancement of the design through the preliminary stage, and discussions with the RD Team have resulted in rail access being evaluated in terms of "rail yard suitability." Rail yard suitability is a Group 3 criterion and takes into consideration whether the on-site area is adequate to support both the processing operations and a rail yard facility, whether site conditions affect potential rail yard locations, and whether adequate rail exists to service a rail yard facility. These considerations will form the basis for evaluation of rail access.

- **Road Access** was used as a Group 1 criterion and it was assumed that access was needed for project personnel to enter and exit sites. Additional information has expanded the definition of road access to also include site access characteristics. Three of the FCSs have public roads crossing through portions of the properties. At these sites, rail is separated from the riverside parcels by roads that material may have to be transferred over, under, or across. Public roads and on-site roads were observed during field investigations (vicinity reconnaissance) to evaluate potential road access and use as it relates to construction and operation of a sediment processing facility and rail yard.

- **Utilities** were used as a Group 1 criterion and were visually identified during site-specific investigations. During the on-site field studies and in consultation with the RD Team, utilities have been further evaluated based on availability and capacity.

- **Sensitive Resources** were used as a Group 2 criterion. Identifying and determining proximity to sensitive resources was further developed by creating 0.5 mile and 1 mile radii around each FCS. Properties within each radius were

identified and counted based upon property classifications (i.e., residential parcels, educational facility parcels, etc.). In addition, the 2000 census information was used to obtain estimates of population in those areas (see Appendix B).

- **Cultural Resources** were used as a Group 2 criterion. Phase IA and Phase IB cultural resource investigations provided site-specific information regarding the presence of prehistoric and historic properties, potential additional phases of study that may be required, and/or the possibility that space would be further limited by mitigation through avoidance of these resources.

- **Threatened and Endangered Species** were used as a Group 2 criterion. Continuing coordination with the FWS, NMFS, and NYSDEC provided further detail regarding potential Endangered Species Act issues at each FCS. Some FCSs and nearby areas have been identified as occurring within known wintering bald eagle areas and/or spawning areas for the shortnose sturgeon. EPA is conducting a biological assessment to examine these issues.

- **Wetlands** were used as a Group 2 criterion. During PCS evaluation, wetlands were identified using existing mapping resources and preliminary observations made during the initial site visits. Field wetland determinations and delineations were conducted on the FCSs using the USACE Routine Approach, as presented in the 1987 *Wetland Delineation Manual*. These field observations were used to map the locations and the extent of areas identified as wetlands and to adjust wetland locations and boundaries.

- **Geology and/or Surface Features** were used as a Group 2 criterion. Site-specific geotechnical and surface characteristics investigations were conducted at FCSs where existing information was not sufficient to assess those conditions.

- **Floodplains** were used as a Group 2 criterion. A floodplain assessment of each FCS included a review of FEMA mapping and flood insurance studies (where available) and a preliminary comparison of site shoreline elevations to gauge station data and NYSCC river stage data. These assessments provided an estimate of the extent of 100-year and 500-year floodplains, the likelihood of 100-year flood events having occurred on the sites, and a rough estimate of the extent of annual high water elevations. Once the sites are selected for Phase 1 and Phase 2 dredging, EPA will perform the final floodplain assessment using the 500-year floodplain, which is considered the critical action floodplain and is used per CERCLA actions (USEPA 1985).

3.3.2 Design-Related Information Provided by the RD Team

Preliminary design documents have been developed by the RD Team that are being reviewed by the EPA team. Meetings were also held to discuss design considerations in the evaluation of the FCSs. As presented in Section 3.3.1, preliminary

design considerations such as land and rail yard requirements relative to site selection were considered during the evaluation of the FCSs to assist in determining the suitability of sites. Additional preliminary design considerations identified that can also contribute to site suitability include the following:

- **Access to Borrow Material.** Potential availability of on-site material and compatibility for use in the project could be a factor.

- **Safety.** Due to the location of the dredging to existing structures (i.e., dams, locks, roads), safety issues will need to be addressed.

3.3.3 Additional Factors Identified as Group 3 Criteria

The on-site field investigations of the FCSs also provided additional information that could influence design and site layout for a given location. These factors include:

- **Environmental Conditions.** Phase II ESA sampling on the FCSs provided information regarding site environmental conditions/potential contamination, types and locations of contamination, the need for future sampling, the potential effect of contamination on site design, and potential limitations on available space.

- **Dredge Material Transfer Issues.** If used, hydraulically dredged materials will be piped from their origin to a sediment processing/transfer facility. Sites closer to larger percentages of material provide potential advantages for transportation and productivity factors. Moving hydraulic or mechanically dredged sediment material from the waterfront across the site also is considered under this criteria.

- **Navigation Issues.** Physical features such as water depth in the navigation channel, presence of bedrock outcrops/boulders along shorelines, river channel location/widths, bridge heights, and locations of locks/dams were assessed with respect to various design considerations. These considerations include movement and transport of barges, logistics of offloading facilities, and the potential for modifications to the river/canal to allow vessels to pass safely and efficiently as well as allowing movement to and from the site.

- **Coastal Management Issues.** An initial CMA assessment identified the FCSs that are within the New York State-defined Hudson River CMA. Potential CMA consistency issues and existing LWRPs were reviewed. Although assessments have not been completed, there may be limitations on site development for FCSs within the CMA and/or those that have existing LWRPs.

Table 3.3-1 provides the Group 3 criteria as identified by further examination of the Group 1 and Group 2 criteria, design-related information from the RD Team,

and additional factors determined from the site-specific field investigations. The FCS evaluation process included examining the identified Group 3 criteria.

Table 3.3-1 Group 3 Criteria

Useable Acreage
Waterfront Suitability
Rail Yard Suitability
Road Access
Utilities
Sensitive Resources
Cultural Resources
Threatened and Endangered Species
Wetlands
Geology and/or Surface Features
Floodplains
Access to Borrow Material
Safety
Environmental Conditions
Dredge Material Transfer Issues
Navigation Issues
Coastal Management Issues

3.4 Evaluation of FCSs using Group 3 Criteria

FCSs were evaluated using Group 3 criteria in terms of benefits, potential limitations, and additional design considerations. This is the third phase of the facility siting evaluation process (the application of Group 3 criteria) and it has formed the basis of the conclusions regarding EPA's identification of Suitable Sites. It is EPA's intent to identify a number of Suitable Sites and to determine which sites will be evaluated more thoroughly in the intermediate phase of the RD for the selection of sites for Phase 1 and Phase 2 dredging.

Based on the Group 3 criteria, the following sections provide site-by-site summaries of benefits, potential limitations, and additional design considerations relative to each of the FCSs, resulting in the identification of the Suitable Sites (see Section 4). These benefits, potential limitations, and additional design considerations are mentioned in the general order of topics presented in this report. If some criteria (i.e., Group 1 or Group 2 criteria) are not mentioned in the text below, Group 3 criteria were not developed from these criteria (i.e., existing and historic land uses and land ownership) or those factors were discussed previously in the report as part of the Group 1 and 2 criteria evaluation. Engineering and professional judgment have been applied to the factors described below and their relative importance to the project.

3.4.1 Energy Park/Longe/NYSCC

3.4.1.1 Benefits

Based upon the evaluation of Group 3 criteria, benefits of this site include the following:

- **Floodplains.** As determined by the floodplain assessment, this site is not likely to experience major flooding because it is outside the 100-year flood plain.

- **Dredged Material Transfer Issues.** The proximity of this site to the dredge areas in River Section 1 suggests that the site could receive either hydraulically or mechanically dredged material, or both. Sediments could be barged to the site, and the NYSCC has indicated that necessary bulkhead construction on its property is feasible. Sediments could also be transferred to the site by pipeline, if the material is dredged hydraulically, avoiding the need to navigate Lock 7. The pipeline could be constructed along the canal on NYSCC property.

- **Useable Acreage.** The site is relatively flat and the length and width are adequate for operation of both a sediment processing/transfer and rail yard facilities. In addition, the majority of the site is open space (i.e., not wooded), which will minimize the areas cleared and grubbed. Other useable area considerations are noted below under Section 3.4.1.3, Wetlands.

- **Rail Yard Suitability.** This is feasible; approximately 25 acres and a relatively long rail frontage would be needed. Site layout will allow for optimal configuration and rail car movement using rail loops. However, there will be long transfer distances from the waterfront processing facility to the rail yard facility.

- **Access to Borrow Material.** Borrow material is located on-site and may provide backfill for dredged areas and/or other project-related construction needs.

- **Utilities.** Based on RD Team review, these appear to be readily available.

3.4.1.2 Potential Limitations

- **Waterfront Suitability.** The site is located on the Champlain Canal, not on the Hudson River, but is close to a large percentage of the material to be dredged. The canal is about 150 feet wide in the vicinity of the site. Although the site contains adequate frontage along the canal, the site is not currently suitable for project-related waterfront needs. However, a berthing area and turning basin could be designed and developed. Movement of mechanically dredged sediments in and out of the facility by water will require barging through Lock 7.

3.4.1.3 Additional Design Considerations

- **Environmental Conditions.** The site is actively being filled and graded with thermally treated non-hazardous soils. These soils were generally characterized during the site-specific field investigation and no significant contamination was found. However, because of the potential variability of on-site fill material as well as the ongoing filling operations, further characterization of fill soils may be needed before facility construction. In addition, soils excavated during berthing area construction will be characterized to determine the suitability of the material for backfill or for removal for off-site disposal.

- **Wetlands.** Based on information provided by the RD Team, the design and construction of a berthing area and turning basin may be affected by the location and extent of the on-site wetland areas.

- **Road Access.** Road access to the site as it now exists is through residential areas or through the ESMI facility and over the Canadian Pacific rail. Potential impacts to residential areas and the challenges associated with a rail crossing will have to be addressed during design. The Lock 8 access road may need re-routing around the berthing/waterfront facility. These potential limitations are typical for construction projects.

- **Geology and/or Surface Features.** Subsurface conditions at the waterfront may include poor foundation-bearing material.

3.4.2 Old Moreau Dredge Spoils Area/NYSCC

3.4.2.1 Benefits

- **Useable Acreage.** Hilly topography limits the useable acreage. The site is adequate for operation of both sediment processing and rail yard (transfer) facilities but is suitable only for a smaller rail facility, which would require support from off-site (i.e., Fort Edward Rail Yard). Factors such as variable topography and site configuration near rail will be addressed during design. The site could be used for a sediment processing facility with barging to another rail load-out facility. Other considerations of usable acreage are noted under Environmental Conditions, Rail Yard Suitability, and Cultural Resources.

- **Waterfront Suitability.** The site is located directly on the Hudson River with adequate river frontage in River Section 1, where a majority of the dredging will occur. Other waterfront suitability factors are discussed below.

- **Dredged Material Transfer Issues.** During hydraulic dredging operations sediments could potentially be transferred to the site by pipeline. Much of the sediment in the upper part of the river may be dredged hydraulically and

transported by pipeline, and the pipeline would be constructed along the river and used to transport hydraulically dredged sediment to the site.

3.4.2.2 Potential Limitations

- **Environmental Conditions.** On-site dredge spoils disposal and historic filling/dumping have resulted in surface and subsurface soil, surface water, sediment, and possible groundwater contamination at the site. While the presence of this contamination does not eliminate the use of the site as a transfer/processing facility, a variety of possible limitations result. Comparing baseline environmental conditions to post-site use conditions will be difficult to assess because the site is currently contaminated. Additional site characterization may be needed once the RD Team has developed the facility footprint location. This could also affect the useable acreage identified above.

- **Waterfront Suitability.** Current water depths adjacent to shoreline would require extensive navigational dredging. This portion of the Hudson River is highly depositional and periodic navigational dredging may be required. Use of this site may require designing and constructing an in-river channel. The difference in elevation from the river to land would require grading and terracing to allow transfer of dredged material.

- **Geology and/or Surface Features.** Dredge spoils and fill material throughout the site would present geotechnical concerns about support of foundations and may require terracing. Roadways would require an extensive subbase.

3.4.2.3 Additional Design Considerations

- **Cultural Resources.** Archaeologically significant areas are located on-site and a historic cemetery is located just off-site on an adjacent parcel. The RD team should address these areas through avoidance during design.

- **Rail Yard Suitability.** While site topography somewhat limits construction, the RD Team has identified approximately 15 acres that are adequate for construction. However, the suitability of this area for rail yard construction is uncertain and additional storage/staging facilities at the Fort Edward Rail Yard may be necessary. It also may be necessary to barge processed material to another transfer facility downstream of the site.

- **Wetlands/Floodplains.** Development may be required on small wetland areas and in the 100-year floodplain.

- **Utilities.** Power is nearby, but the supply may be limited. It is questionable whether adequate water and sewer are available.

3.4.3 Georgia Pacific/NYSCC

3.4.3.1 Benefits

- **Waterfront Suitability.** The site is located directly on the Hudson River with adequate river frontage in River Section 2, relatively close to a majority of the material to be dredged. It is adequate for constructing project-related loading and unloading facilities. The existing bulkhead on-site was noted during site-specific field investigations to have a water depth of about 10 feet. Assuming the facility bulkhead area would be in the same general area, depth for barges appears to be sufficient.

3.4.3.2 Potential Limitations

- **Useable Acreage.** Hilly topography limits the useable area within the site. Other considerations about usable acreage are noted under Rail Yard Suitability, Cultural Resources, and Geology and/or Surface Features.

- **Rail Yard Suitability.** Information from the RD Team indicates that the Batten Kill railroad (the only rail line with access to the site) may not be able to handle the loads associated with rail cars filled with processed sediments. Up to 20 miles of railroad may have to be rehabilitated. In addition, the site does not meet the rail yard footprint requirements due to lack of the available space on-site, challenges associated with site topography, and the location of a landfill on the eastern parcel. In addition, the site is located 32 miles from a major rail carrier.

- **Cultural Resources.** The site has potentially significant archaeological features that are associated with historic operations (paper mill) at the site. These features will require further characterization before construction of an on-site facility. However, these features may be avoided or, if avoidance is not possible, could be addressed with further investigation, characterization, and mitigation.

- **Geology and/or Surface Features.** Extensive fill material and other subsurface conditions would possibly require piling foundations. Roadways would require an extensive subbase.

3.4.3.3 Additional Design Considerations

- **Environmental Conditions.** The site contains fill material in various areas: a land-farm soil area, several areas where drums were observed, a former hydroelectric power canal that has been determined (during site-specific studies) to be contaminated with PCBs, and a landfill area in the inland (eastern) parcel. Further characterization of the site may be needed before facility design because of the potential variability of the on-site fill material, previous land-farming activities, and the presence of drums and the landfill. In particular,

further characterization of soils may be needed before grading or excavation during facility construction.

- **Safety.** The accessible shoreline area from the river is located upstream and near the Northumberland Dam. This factor, along with the proximity of the dam to the navigation channel, poses safety issues for vessel movement to and from the site. However, these issues would be addressed during design.

- **Road Access.** County Road 113 separates the inland (eastern) and shoreline (western) parcels of the site. The presence of this road between parcels on-site and the need to cross the road to get to the parts of the site would be addressed during design if both sides of the road are used in the operations.

- **Floodplains.** Part of a likely sediment processing/transfer facility may be in the 100-year floodplain.

- **Utilities.** Electric power is nearby, but it is questionable whether capacity is adequate and whether other utilities are available.

3.4.4 Bruno/Brickyard Associates/Alonzo

3.4.4.1 Benefits

- **Useable Acreage.** The eastern portion of the site is hilly and unusable, but useable area is sufficient for both a sediment processing facility and for rail yard construction.

- **Rail Yard Suitability.** This is feasible, using approximately 23 acres on the Bruno parcel and approximately 20 acres on the Brickyard Associates property. The site has direct access to the Guilford Rail System (GRS).

- **Waterfront Suitability.** The site is located directly on the Hudson River with adequate frontage for development of waterfront structures.

- **Access to Borrow Material.** Borrow material is located on-site and may provide backfill for dredged areas and/or other project-related construction needs.

3.4.4.2 Potential Limitations

- **Navigation Issues.** Since the shoreline of the site is near Lock 3, vessel congestion may be a concern. In addition, the train bridge located upstream and near the site has a low vertical clearance, and proper clearance and depth of the navigation channel depends on the water level adjustment made at the Upper Mechanicville Dam controlled by the local New York State Electric and Gas (NYSEG) Corporation. These factors could limit transportation by water from the site.

3.4.4.3 Additional Design Considerations

- **Environmental Conditions.** The Bruno and Alonzo parcels contain dumping areas, and the Brickyard Associates parcel contains vast areas of fill material (predominantly brick) and other debris. The Bruno parcel was not characterized during site-specific investigations because permission to access the site had not been obtained. Because of the potential variability of the on-site fill material and surficial dumping, further characterization of the site (including the Bruno parcel) may be needed before facility construction.

- **Waterfront Suitability.** The river is shallow where bulkhead transfer operations may be located. A significant amount of initial navigational dredging would be required and periodic dredging may be needed to bring the barges to the shoreline; this would be considered during design.

- **Dredge Material Transfer Issues.** The elevation difference between riverside and the anticipated location of the sediment processing/transfer facility may be a design consideration. In addition, the on-site rail line would have to be crossed to bring the sediments from riverside to the processing area, expected to be upslope to the east. These issues would be addressed during design.

- **Threatened and Endangered Species.** The presence of possible wintering bald eagle habitat could limit the area available for construction of bulkhead/barge offloading transfer facilities and would be addressed during design. A biological assessment is being prepared by EPA to address this concern.

- **Road Access.** Knickerbocker Road separates the shoreline parcel from the inland parcels of the site. Given the location of on-site rail, material would need to be transferred over or under the road to access rail and/or the expected processing area. This will be addressed during design.

- **Utilities.** Electric and phone are available at the site, but adequate capacity and the availability of other utilities is questionable.

- **Geology and/or Surface Features.** Soil types will require deeper foundations. Roadways would require extensive subbase.

- **Floodplains.** Part of a likely sediment processing/transfer facility may be in the 100-year floodplain.

3.4.5 NYSCC/Allco/Leyerle

3.4.5.1 Benefits

- **Useable Acreage.** Usable acreage is affected by site topographic conditions. The eastern portion has unacceptable topographic gradients, but a sufficient useable area is available for both a sediment processing facility and a rail yard.

- **Rail Yard Suitability.** A rail yard is feasible on the western portion of site and would need approximately 25 acres. The area is flat and existing rail line is in good working condition. Service to and from site is available.

- **Waterfront Suitability.** This site is located directly on the Hudson River with adequate frontage for development of waterfront structures.

3.4.5.2 Potential Limitations

- **Road Access.** U.S. Highway 4/State Route 32 separate the shoreline parcel (NYSCC) from the inland parcels of the site. The presence of this relatively high-traffic-volume road between on-site parcels is considered a potential site limitation because an extensive conveyor system either over or under the road would be needed. It is expected that this could be addressed during design.

3.4.5.3 Additional Design Considerations

- **Waterfront Suitability.** Current water depth adjacent to the shoreline may require significant initial navigational dredging and possibly periodic navigational dredging.

- **Environmental Conditions.** The NYSCC property contains fill material, possibly from the Hudson River, and areas of surficial dumping, including 55-gallon drums in the northern portion of the site. Further characterization of the fill may be needed before facility construction because of the potential variability of the on-site fill material and surficial dumping.

- **Dredge Material Transfer Issues.** Portions of the shoreline have steep slopes. Topographic relief from the shoreline to potential processing areas on the southern half of the parcel approach 20 feet in some cases. Site grading would likely be required to accommodate transferring dredged material from barges to the site and will be addressed during design.

- **Wetlands.** Wetlands have been identified on-site, perpendicular to the rail line. Rail and rail yard access design will have to minimize impacts to those areas.

- **Threatened and Endangered Species.** The Hudson River in the vicinity of this site has been identified as a known wintering area for the bald eagle. The potential for affecting the bald eagle habitat will be considered in the biological assessment being prepared by EPA. The design would have to minimize the potential impact on bald eagle habitat.

- **Utilities.** Electric and natural gas services are available on the southern portion of site, but adequate capacity and availability of other utilities is questionable.

- **Floodplains.** Part of a sediment processing/transfer facility might be in the 100-year floodplain.

3.4.6 State of New York / First Rensselaer / Marine Management

3.4.6.1 Benefits

- **Waterfront Suitability.** The site is located directly on the Hudson River with adequate frontage for development of waterfront structures.

- **Navigation Issues.** The site is south of the Federal Dam at Troy, where the navigational channel is deeper.

3.4.6.2 Potential Limitations

- **Sensitive Resources.** A review of census information revealed a relatively high population density within 0.5 mile and 1 mile of the site.

- **Coastal Management Issues.** The City of Rensselaer has an approved LWRP, which governs development in the vicinity of this site. The use of the site for a sediment processing/transfer facility may not be consistent with the approved Rensselaer LWRP. The potential conflict with the City of Rensselaer LWRP and current plans to develop the site for recreation are considered to be a significant site limitation.

- **Useable Acreage.** The 17-acre site is insufficient for the operation of sediment processing facility and a rail yard facility due to steep slopes in the southwest portion of the site.

- **Rail Yard Suitability.** The site is not large enough for the development of a rail yard, and insufficient space is available to move trains to and from the site and switch trains, once cars are at the site.

- **Floodplains.** The floodplain assessment revealed that the site is almost entirely in the 100-year floodplain. The flood insurance study revealed that the 10-year flood elevation is 15 feet and would encompass approximately 70% of

the site. In the past 57 years, there have been five flow events greater than a 10-year flood, as indicated by information collected at the closest gauge station in Troy, NY.

3.4.6.3 Additional Design Considerations

- **Environmental Conditions.** Before 1950 the site comprised marshes and bottomlands. It is now considered land consisting of river dredge material, construction and demolition material, railroad cinders, and possible refuse material. Further characterization of the fill may be needed before facility construction because of the potential variability of the on-site fill material, potential ongoing surficial dumping, and limited intrusive investigations due to the lack of access to the State of New York parcel.

- **Geology and/or Surface Features.** The extent, types, and depth (up to 18 feet) of the fill material that is widely dispersed throughout the site could require piling foundations. Roadways would require an extensive subbase.

- **Threatened and Endangered Species.** The Hudson River in the vicinity of this site has been identified as a known spawning area for the shortnose sturgeon. The potential for affecting the shortnose sturgeon and other habitat will be considered in the biological assessment being prepared by EPA. Steps would have to be taken to minimize the impact on habitat of the shortnose sturgeon.

- **Road Access.** The site, as it now exists, does not have direct access to a public road. Access to the northern portion of the site could be via Tracy Street. It should be noted that this section of Tracy Street is residential. Accessing Tracy Street from the site would also require crossing the active CSX Transportation rail line. Design issues regarding road access and rail crossing will be addressed during design.

3.4.7 OG Real Estate

3.4.7.1 Benefits

- **Waterfront Suitability.** The site is located directly on the Hudson River with adequate frontage for development of waterfront structures.

- **Useable Acreage.** There are suitable, relatively flat areas available for both the sediment processing facility and rail yard. The site could also be used as a rail load-out site for processed sediments barged from other sites.

- **Rail Yard Suitability.** A rail yard is feasible and would need approximately 18 acres. The existing adjacent rail line is in good working condition. Service to and from the site is available.

- **Navigation.** The site is south of the Federal Dam at Troy where the navigational channel is deeper.

3.4.7.2 Potential Limitations

- **Floodplains.** The floodplain assessment revealed that the site is almost entirely in the 100-year floodplain. The flood insurance study revealed that the 10-year flood elevation is 13 feet and would encompass approximately 33% of the site. In the past 57 years, there have been five flow events greater than a 10-year flood, as indicated by information collected at the closest gauge station in Troy, NY.

3.4.7.3 Additional Design Considerations

- **Environmental Conditions.** The majority of the site has been filled with ash from the former Niagara Mohawk power plant, which was located immediately to the south of the site. The ash was encountered at depths as great as 18 to 28 feet BGS. The deeper areas were noted within the former channel of Normans Kill, which once traversed the site and has since been rerouted. Due to the potential variability of the on-site fill material, further characterization of the site may be needed before facility construction.

- **Geology and/or Surface Features.** The distribution and depths of ash across the majority of the site and shallow groundwater table (as little as 1 foot BGS), suggest the potential for some geotechnical limitations and soil stability issues requiring special foundations.

- **Threatened and Endangered Species.** The Hudson River in the vicinity of this site has been identified as a known spawning area for the shortnose sturgeon. The potential for affecting the shortnose sturgeon and other habitat will be considered in the biological assessment, being prepared by EPA. The impact on habitat of the shortnose sturgeon would have to be minimized.

- **Road Access.** A small portion of the site contains direct access to a public road near the southern end of the site boundary. That portion is steeply sloped and is not conducive to the construction of a site access road. Access to the northern portion of the site from River Road (NYS Route 144) is possible. However, access to River Road is gained by crossing private property and likely would entail obtaining an ingress/egress easement. This issue regarding road access will be addressed during design.

- **Utilities.** Electric, natural gas, water, and sewer services are available on or near the site, but whether the capacity is adequate is questionable.

3.5 Additional Studies

The areas where the FCSs are located were evaluated to determine whether the construction and operation of a facility could result in disproportionately high and adverse human health or environmental effects on minority populations and low-income populations at any of the FCS locations. This evaluation was conducted under EPA Region 2's *Interim Policy on Environmental Justice* (2000), consistent with *Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.*

In addition, three of the FCSs have public roads that separate parcels and/or properties within the sites. These include the Georgia Pacific/NYSCC site, Bruno/Brickyard Associates/Alonzo, and NYSCC/Allco/Leyerle. Traffic count information was obtained from the New York State Department of Transportation (DOT) in order to get a sense of the volumes and types of traffic that use the respective roads. The existing traffic environments at each of the FCSs will provide an indication as to the design challenges and the potential for disruption to through traffic.

3.5.1 Environmental Justice

The EPA Region 2 Interim Policy on Environmental Justice (EJ) provides a two-step process for evaluating whether an EPA program or project could result in disproportionately high and adverse human health or environmental effects on minority populations or low-income populations when implemented. The two-step process is described on EPA's homepage at http://www.epa.gov/Region2/community/ej/overview.htm. The two-step process includes:

- A demographic analysis to assess whether the percentage of minority population or low-income population within a community of concern (COC) is higher than the percentage of minority population or low-income population within the established reference area (e.g., New York State); and

- An analysis of the environmental burden to determine if the relative human health or environmental effects are disproportionately high.

If any environmental justice concern were associated with EPA's implementation of a program or project, EPA would be responsive to those communities and ensure that they have access to information about the project or program as well as opportunities for involvement in the decision-making process.

This section summarizes the demographic and environmental burden analysis conducted by EPA Region 2. The complete process is presented in *Hudson River PCBs Superfund Site: Dewatering Facility Location: A Comparative Environmental Justice Analysis in Support of Project Site Locations* (USEPA October 15, 2003).

3.5.1.1 Demographic Analysis

The first step of the EJ process involves determining whether the area around an FCS, (i.e., the COC) has a higher percentage of minority population or low-income population than the percentage of minority population or low-income population within the established reference area.

The minority population and low-income population are derived from the U.S. Census Bureau's 2000 census of population and income. A "minority population" includes individuals who are Hispanic, Asian American or Pacific Islander, African-American, American Indian, and Alaskan Native. A "low-income population" includes individuals and families with a combined income below the poverty line. Whether an individual or family is below the poverty line depends on thresholds that have been established by the U.S. Census Bureau by family size and number of family members under 18 years old and/or 65 years old or older.

EPA identified the COC as the area within a 1-mile radius and a 10-mile radius of each of the FCS locations. The reference area for the percentage of the population that is minority is either the total urban area or the total rural area, as defined by the U.S. Census Bureau, for the State of New York, depending on the urban/rural classification of the location of each FCS. The percentage of minority population within a 1-mile radius and a 10-mile radius of the FCSs in urban locations was compared with the percentage of minority population within the total of urban areas in the State of New York. Similarly, the percentage of the population that is minority within a 1-mile radius and a 10-mile radius of sites in locations defined as rural areas was compared with the percentage of minority population within all of the rural areas in the State of New York. The reference area for the percentage of the population that is low-income is the State of New York.

As defined by the U.S. Census Bureau, an area is "urban" if all the territory, population, and housing units are within an urbanized area or within a place where more than 2,500 persons are outside an urbanized area. An urbanized area consists of a central place(s) and adjacent territory with a general population density of at least 1,000 people per square mile of land area that together have a minimum residential population of at least 50,000 people. The Energy Park/Longe/NYSCC, Old Moreau Dredge Spoils Area/NYSCC, Bruno/Brickyard Associates/Alonzo, State of New York/First Rensselaer/Marine Management, and OGC Real Estate FCS locations are all considered urban areas. Areas that are not defined as "urban" are defined as "rural." The Georgia Pacific/NYSCC and NYSCC/Allco/Leyerle FCS locations are considered rural areas.

As shown in Table 3.5-1, the percentage of minority population within the COC for each of the seven FCSs is less than the percentage of minorities within the reference area, whether a 1-mile or a 10-mile radius was used to determine the COC.

Table 3.5-1 Percentage of Minority Population within a 1-Mile and 10-Mile Radius of Each FCS Compared to the Reference Area

	Energy Park/Longe/ NYSCC	Old Moreau Dredge Spoils Area/ NYSCC	Georgia Pacific/ NYSCC	Bruno/ Brickyard Associates/ Alonzo	NYSCC/ Allco/ Leyerle	State of New York/First Rensselaer/ Marine Management	OG Real Estate
% Minority population within the COC (1-mile radius)	1 %	1 %	1 %	<1 %	<1 %	39 %	16 %
% Minority population within the COC (10-mile radius)	4 %	4 %	4 %	6 %	9 %	18 %	19 %
% Minority population within the reference area	52 %[a]	52 %[a]	35 %[b]	52 %[a]	35 %[b]	52 %[a]	52 %[a]

[a] Urban.
[b] Rural.

As shown in Table 3.5-2, the percentage of low-income population within the COC for each of the seven FCSs is less than the percentage of low-income population within the reference area, whether a 1-mile or a 10-mile radius was used to determine the COC.

Table 3.5-2 Percentage of Low-Income Population within a 1-Mile and 10-Mile Radius of Each FCS Compared to the Reference Area

	Energy Park/Longe/ NYSCC	Old Moreau Dredge Spoils Area/ NYSCC	Georgia Pacific/ NYSCC	Bruno/ Brickyard Associates/ Alonzo	NYSCC/ Allco/ Leyerle	State of New York/First Rensselaer/ Marine Management	OG Real Estate
% Low-income population within the COC (1-mile radius)	9 %	11 %	5 %	7 %	5 %	21 %	6 %
% Low-income population within the COC (10-mile radius)	9 %	9 %	6 %	6 %	8 %	11 %	11 %
% Low-income population within the reference area	24 %	24 %	24 %	24 %	24 %	24 %	24 %

3.5.1.2 Environmental Burden Analysis

The second step of the EJ process involves an environmental burden analysis that evaluates the relative human health or environmental effects associated with existing industrial, municipal, or commercial facilities within the COC compared to the reference area. This comparison indicates whether relative risk rankings in the COC are disproportionately high.

However, the indicators presented below are based on modeled data from a number of facilities in the COC and reference area. They provide a relative indicator

of the impacts of these emissions as opposed to an actual indicator of the impacts of these emissions on human health or the environment.

As shown below, the analysis did not find any disproportionate risk in the COC compared to the reference area for any of the FCS locations.

The indicators of environmental burden that were used for this analysis include:

- Region 2 Toxics Release Inventory (TRI) Air Emissions Indicator;
- Region 2 Air Toxics Indicator; and
- Region 2 Facility Density Indicator.

The indicators and the results of the site-specific analyses are briefly described below.

Region 2 TRI Air Emissions Indicator

The TRI Air Emissions Indicator is a value that reflects the relative human health risk associated with chemical releases within a defined geographical area or community. It is based on the TRI, a database of toxic chemical releases that are reported annually by manufacturing companies and other facilities covered under the Emergency Planning and Community Right-to-Know Act (EPCRA). The indicator value integrates the quantity and the toxicity of releases, exposure pathways, and locations of population areas into an indicator value for comparison purposes.

If the indicator value is higher than the threshold value (e.g., the median value for the State of New York), the COC could experience a disproportionately high environmental burden. Communities are ranked to provide a measure of the potential risk compared to the rest of the state (the reference area). Ranking is established on a scale of 1 to 10, with 1 being the lowest potential risk and 10 being the highest potential risk. If the indicator value is lower than the threshold value, the community is ranked 0. The indicator values provide a "picture" of which COCs are at higher potential risk when compared to the reference area.

The results of this analysis are shown in Table 3.5-3.

Table 3.5-3 Comparison of TRI Air Emissions Indicator Within a 1-Mile and 10-Mile Radius of Each FCS

	Energy Park/Longe/ NYSCC	Old Moreau Dredge Spoils Area/ NYSCC	Georgia Pacific/ NYSCC	Bruno/ Brickyard Associates/ Alonzo	NYSCC/ Allco/ Leyerle	State of New York/First Rensselaer/ Marine Management	OG Real Estate
1-Mile Radius – TRI Indicator							
Site Indicator Value	1.53	1.65	1.54	4.26	6.68	3.21	3.28
Threshold Value	6.56	6.56	6.56	6.56	6.56	6.56	6.56
Risk Ranking	0	0	0	0	>0	0	0
10-Mile Radius – TRI Indicator							
Site Indicator Value	1.88	1.87	1.63	6.65	6.87	4.61	3.58
Threshold Value	6.56	6.56	6.56	6.56	6.56	6.56	6.56
Risk Ranking	0	0	0	>0	>0	0	0

As shown above, the indicator values at all of the FCSs are lower or comparable to those for the reference area (identified in the table as the threshold value), and thus these areas do not pose a disproportionately high environmental burden. This is further indicated by the risk ranking of zero for the 1-mile and 10-mile radius COC. The zero ranking indicates the lowest potential risk using this methodology. Although the COC within a 10-mile radius of the Bruno/Brickyard Associates/Alonzo FCS and the COC within a 1-mile radius and a 10-mile radius of the NYSCC/Allco/Leyerle FCS represent a slightly higher human health risk than the threshold value, the potential health risk is still extremely low.

Region 2 Air Toxics Indicator

The Region 2 Air Toxics Indicator is based on the results of the aggregated cancer risk and non-cancer respiratory hazard index for a maximally exposed individual. The information used in this analysis is derived from the 1996 National Scale Assessment for the National Air Toxics Assessment, conducted by EPA's Office of Air Quality Planning and Standards.

The Air Toxics Indicator is a unitless value that reflects the relative cancer risk and non-cancer/respiratory hazard risk associated with ambient air concentrations within a geographical area. It is based on an analysis of 33 air toxics that EPA has identified as potentially posing the greatest threat to public health in urban areas. The Air Toxics Indicator integrates ambient air concentrations and population exposure into a unitless value for comparison purposes.

If the indicator value is higher than the threshold value, the COC could experience a disproportionately high environmental burden. Communities are ranked to provide a measure of the potential risk compared with the rest of the state. Ranking is established on a scale of 1 to 10, with 1 being the lowest potential risk and 10 being the highest potential risk. If the indicator value is lower than the threshold value, the community is ranked zero.

The results of this analysis are shown in Table 3.5-4.

Table 3.5-4 Comparison of Air Toxics Indicator Within a 1-Mile and 10-Mile Radius of Each FCS

	Energy Park/Longe/ NYSCC	Old Moreau Dredge Spoils Area/ NYSCC	Georgia Pacific/ NYSCC	Bruno/ Brickyard Associates/ Alonzo	NYSCC/ Allco/ Leyerle	State of New York/First Rensselaer/ Marine Management	OG Real Estate
1-Mile Radius – Air Toxics Indicator/Cancer Risk							
Site Indicator Value	27.00	28.33	28.00	36.00	32.00	44.50	40.00
Threshold Value	80.00	80.00	80.00	80.00	80.00	80.00	80.00
Cancer Risk Ranking	0	0	0	0	0	0	0
1-Mile Radius – Air Toxics Indicator/Noncancer Health Risk							
Site Indicator Value	1.69	2.29	2.06	3.34	2.79	4.20	3.79
Threshold Value	11.2	11.2	11.2	11.2	11.2	11.2	11.2
Noncancer Health Risk Ranking	0	0	0	0	0	0	0
10-Mile Radius – Air Toxics Indicator/Cancer Risk							
Site Indicator Value	29.69	30.00	30.90	37.62	40.96	42.92	42.35
Threshold Value	80.00	80.00	80.00	80.00	80.00	80.00	80.00
Cancer Risk Ranking	0	0	0	0	0	0	0
10-Mile Radius – Air Toxics Indicator/Noncancer Health Risk							
Site Indicator Value	2.29	2.38	2.65	3.56	3.92	4.23	4.22
Threshold Value	11.2	11.2	11.2	11.2	11.2	11.2	11.2
Noncancer Health Risk Ranking	0	0	0	0	0	0	0

Communities with indicator values lower than the threshold value are ranked zero, indicating that the cancer risks and non-cancer hazard indices do not pose an unacceptable risk or hazard. As shown above, the locations of all of the FCSs represent a low cancer risk and non-cancer respiratory health risk based on the Air Toxics Indicator.

Region 2 Facility Density Indicator

The Facility Density Indicator is an index that reflects 1) the number of facilities within a geographic area that are regulated under one of EPA's programs, 2) the population within the designated geographic area, and 3) the size of the geographic area. Facilities are drawn from several of EPA's databases, including the TRI under EPCRA, the Resource Conservation and Recovery Information System (RCRIS) for facilities regulated under the Resource Conservation and Recovery Act (RCRA), the Permit Compliance System for facilities that are permitted under the Clean Water Act (CWA) for discharge to surface waters, the AIRS Facility Subsystem Information Retrieval System for facilities that have stationary sources of air emissions that are permitted under the Clean Air Act (CAA), and the Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) for facilities that are under the Superfund Program. Each facility has a unique identifier so that a facility that appears in one database is not double-counted if it appears in another database. In addition, facilities that are listed as

small quantity generators under RCRA are excluded so that the list of facilities is weighted toward the number of major facilities within a COC.

To evaluate facility density, an indicator was developed for the COC. In addition, a threshold value was developed for the State of New York that provides a comparison indicator. If the indicator value is higher than the threshold value, the COC could experience a disproportionately high environmental burden. Communities are ranked to provide a measure of the potential risk compared to the rest of the state. Ranking is established on a scale of 1 to 10, with 1 being the lowest potential risk and 10 being the highest potential risk. If the indicator value is lower than the threshold value, the community is ranked zero.

The results of this analysis are shown in Table 3.5-5.

Table 3.5-5 Comparison of Facility Density Indicator and Facilities Per Square Mile Within a 1-Mile and 10-Mile Radius of Each FCS

	Energy Park/Longe/ NYSCC	Old Moreau Dredge Spoils Area/ NYSCC	Georgia Pacific/ NYSCC	Bruno/ Brickyard Associates/ Alonzo	NYSCC/ Allco/ Leyerle	State of New York/First Rensselaer/ Marine Management	OG Real Estate
1-Mile Radius – Facility Density Indicator							
Site Indicator Value	128.35	168.70	38.38	16.15	17.61	952.51	259.18
Threshold Value	56	56	56	56	56	56	56
Ranking	4	6	0	0	0	9	7
Facilities per Square Mile	1.28	1.69	0.38	0.16	0.18	9.53	2.59
10-Mile Radius – Facility Density Indicator							
Site Indicator Value	17.99	18.32	8.62	13.54	27.32	89.64	80.17
Threshold Value	56	56	56	56	56	56	56
Ranking	0	0	0	0	0	3	2
Facilities per Square Mile	0.18	0.18	0.09	0.14	0.27	0.90	0.80

As shown above, the Facility Density Indicator value for the area within a 1-mile radius of the Energy Park/Longe/NYSCC FCS, the Old Moreau Dredge Spoils Area/NYSCC FCS, the State of New York/First Rensselaer/Marine Management FCS, and the OG Real Estate FCS is above the statewide threshold.

The Facility Density Indicator value is one component of the three indicators used in the environmental burden analysis, which also includes the Region 2 TRI Air Emissions Indicator and the Region 2 Air Toxics Indicator. As noted previously, the analysis of the other two components for these FCSs (i.e., Energy Park/Longe/NYSCC, Old Moreau Dredge Spoils Area/NYSCC FCS, State of New York/First Rensselaer/Marine Management, and OG Real Estate) had rankings for the other two components (Tables 3.5-2 and 3.5-3) of zero. This indicated the rankings were below the threshold. The combination of the information from all three components, including the health rankings, indicate minimal to low human health risks and no further investigation is warranted.

The Facility Density Indicator within a 10-mile radius of each of the FCSs is below the statewide threshold for all of the FCSs except for the State of New York/First Rensselaer/Marine Management FCS and the OG Real Estate FCS. The findings from this analysis for the two sites indicate a low risk based on the indicator value. The previous evaluations of the other two components of the environmental burden analysis indicated that the rankings were zero for health risks (Table 3.5-3), and cancer and non-cancer risks (Table 3.5-4) had rankings of zero, indicating both ranking values were below the threshold. The combination of the information from all three components, including the health rankings, indicate minimal to low human health risks and no further investigation is warranted.

3.5.1.3 Facility Design Activities

To address potential community concerns regarding the sediment processing/transfer facilities and remediation, EPA has developed Quality of Life Performance Standards that address noise, air, lighting, and navigation. The Quality of Life document was made available for public comment and is available on EPA's homepage at www.epa.gov/hudson. Further, a Community Health and Safety Plan will also be developed during the RD phase of the project and will be implemented during the remediation.

3.5.2 Characterization of Roadways and Traffic

Project-related traffic was evaluated previously (White Paper, Project-Related Traffic), based on comments received from the public on the FS and ROD. At that time, evaluations indicated that project-related traffic in the vicinity of the dewatering site was not expected to be disruptive to local communities. The RD Team will evaluate traffic in greater detail and complete the design to ensure that roadways and entrances are appropriate and to minimize the potential for community traffic impacts. Potential design issues may include determining the necessity of appropriate signage and the appropriate roadway cross-sections to maintain traffic flow conditions and traffic safety. EPA understands that there will be increased traffic associated with facility construction and operation, but it is expected (based on existing evaluations) that those increases will be manageable, will not unreasonably interfere with local traffic patterns, and will not create unsafe situations for the community.

Public roads cross three of the FCSs. However, the location and design of the site operations have not yet been determined and, therefore, the potential effects of these operations on the continued use of the roadways has not been defined.

Consequently, a preliminary look at local traffic volumes and composition was conducted at these three FCSs to further define how crossing of the roadways entering facility operations may affect local traffic. The basic assumption in this evaluation is that material would have to be transferred under, over, or across the road in rail cars to the rail transfer facility. It is also likely that facility personnel would cross the road during site operations. The FCSs and roadways are:

- Georgia Pacific/NYSCC – County Road 113, which separates the western or riverside parcels of the FCS from the eastern, inland parcels.

- Bruno/Brickyard Associates/Alonzo – Knickerbocker Road, which splits the Bruno property into separate parcels of the FCS; and

- NYSCC/Allco/Leyerle – U.S. Highway 4/State Route 32, which establishes the border between the NYSCC and Allco properties.

Information was obtained regarding the roadway characteristics and traffic volumes (where available) for each of these roads to determine baseline conditions along the roads in the vicinity of the FCSs and to get an initial understanding of the potential for disruptions if a sediment processing/transfer facility were located at any of these FCSs. The potential for changes in existing traffic flow conditions would be related to the need for materials to be transferred from parcels near the river across the roads to the rail transfer component of a facility. The existing use of these roadways may provide information on potential limitations or considerations in designing crossings such that the estimated facility production levels could be attained and the safety and flow of through traffic be ensured.

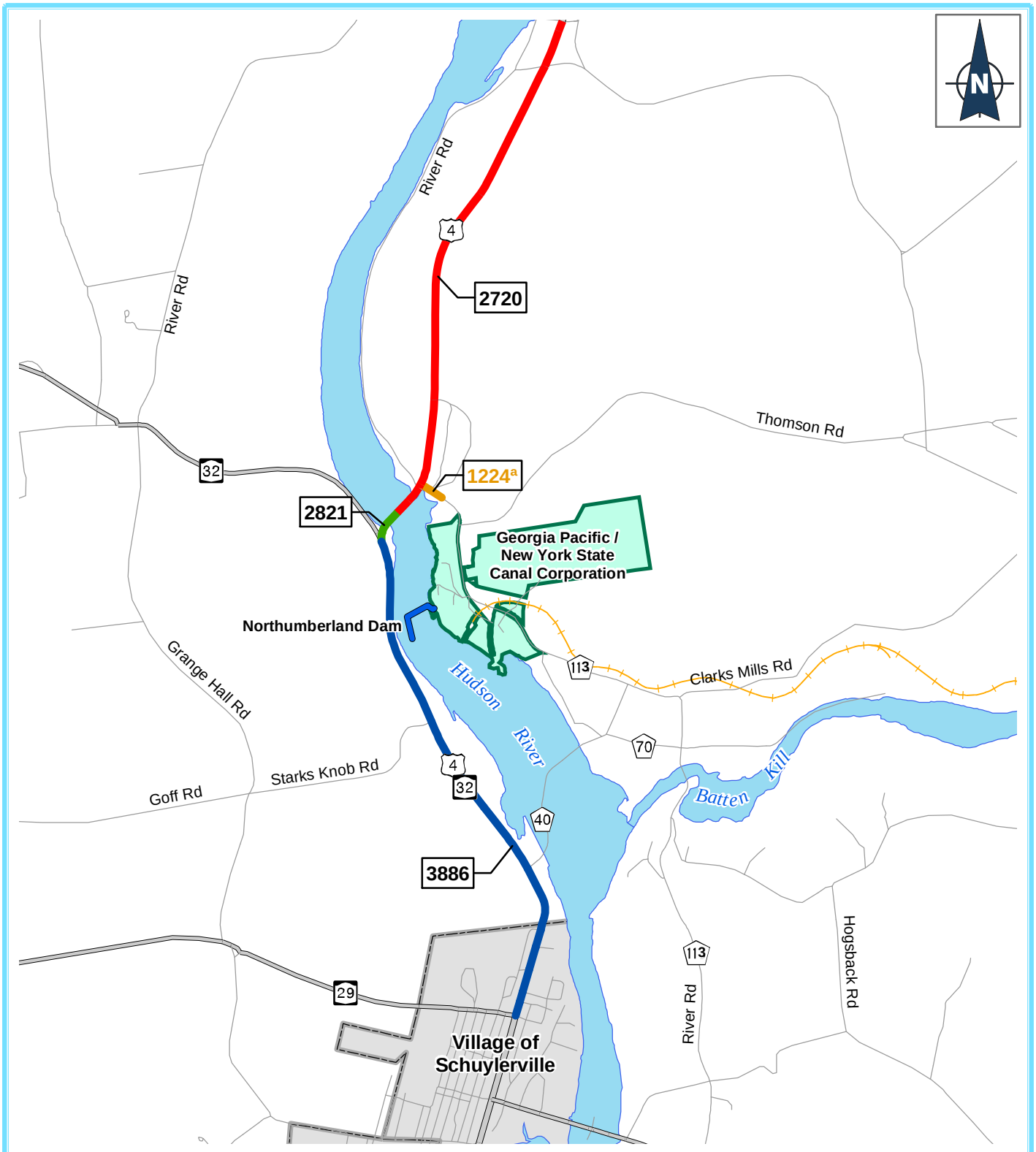
Traffic count information was provided by the New York State Department of Transportation (NYSDOT) and evaluated for applicability to the three FCSs. Traffic information included average annual daily traffic (AADT), traffic composition (passenger car, trucks, etc.), roadway classification, and apparent trends in traffic volume.

3.5.2.1 Georgia Pacific/NYSCC

County Road 113 separates the inland and shoreline parcels of the Georgia Pacific site. The road has two lanes and a mowed shoulder in some areas. Land use along the road near the site is predominantly residential. However, the School of the Adirondacks and the Hollingsworth and Vose manufacturing facility are located along County Road 113 south of the site. Given the lack of direct major arterial connections, it is expected that some amount of large truck traffic (i.e., tractor-trailer) uses County Road 113 as a means of travel to and from this existing manufacturing facility. The facility is located approximately 4,000 feet (0.75 mile) south of the Georgia Pacific/NYSCC site on the east side of County Road 113. The road is classified as a minor rural connector and traffic volumes appear to be low.

NYSDOT data for County Road 113 indicated that traffic counts had been conducted in 1998 approximately 450 feet south of U.S. Highway 4 (approximately 450 feet north of the Georgia Pacific/ NYSCC site). The calculated AADT was 1,224 vehicles (Figure 3.5.2-1). The counts were conducted over a five-day period in October 1998 and showed that approximately 612 vehicles traveled that section of road in each direction over the course of a single day. Traffic count data for several sections of U.S. Highway 4 were also analyzed to compare the

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Potential Site Boundary
- Railroads
- 2821 2002 Estimated AADT (NYSDOT)
- 1224[a] 1998 Measured AADT (NYSDOT)

AADT = Average Annual Daily Traffic

Hudson River PCBs SUPERFUND SITE

Figure 3.5.2-1
Traffic Count Information
Georgia Pacific / New York State Canal Corporation

2,000 1,000 0 2,000 4,000 Feet

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volume of traffic on this road relative to County Road 113. These included the section just before the end of the U.S. Highway 4/State Route 32 overlap, from the end of the U.S. Highway 4/State Route 32 overlap to the Washington County line and from the Washington County line to Fort Edward. The AADT for U.S. Highway 4 before and after the end of the U.S. Highway 4/State Route 32 overlap indicated an overall decrease in traffic volume of approximately 1,000 vehicles, from 3,886 to 2,821 (see Figure 3.5.2-1). The AADT for the section of U.S. Highway 4 from the Washington County line to Fort Edward was estimated to be 2,720 vehicles in 2002. This section of road is designated as a minor rural arterial.

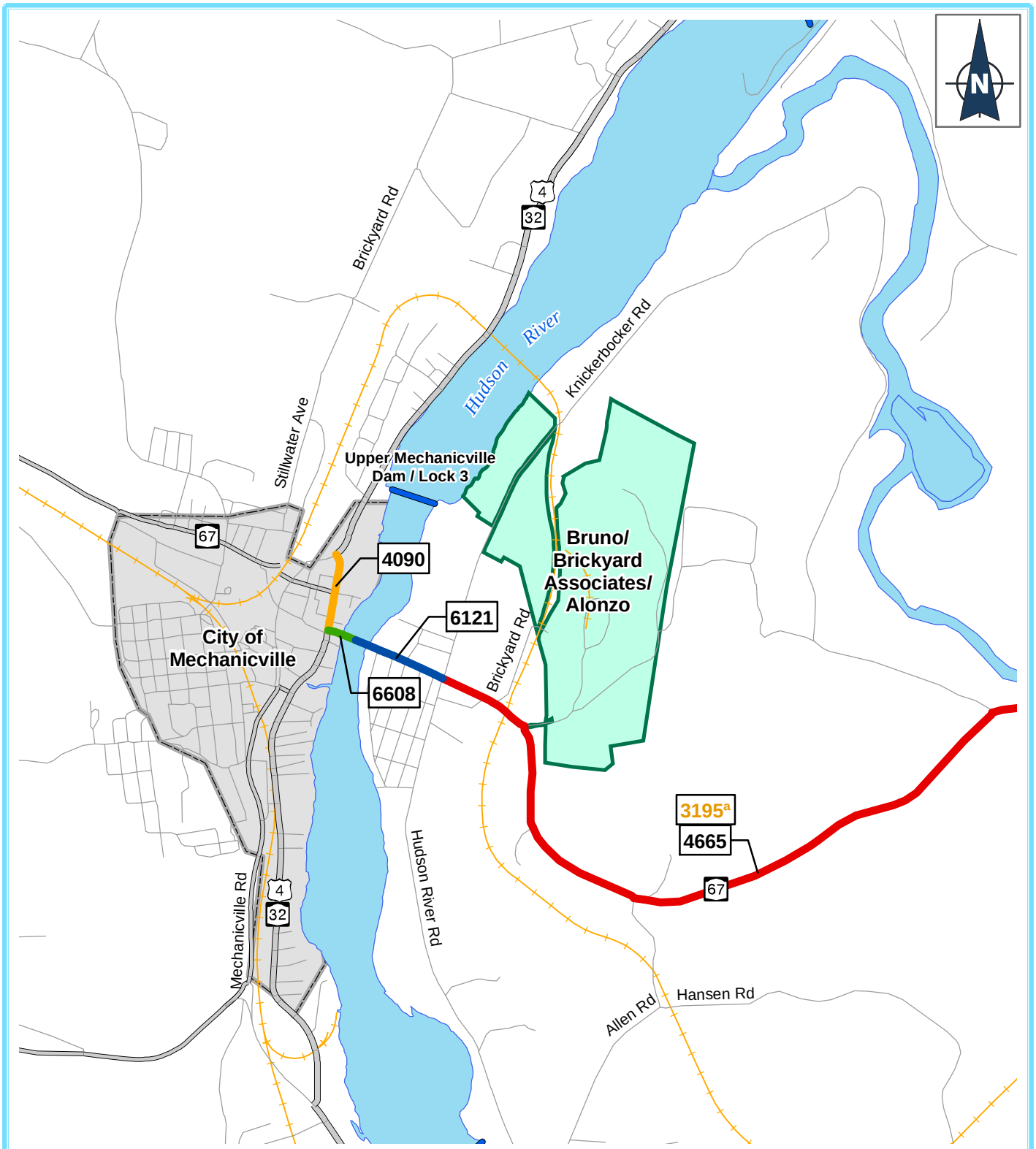
Although specific traffic composition data was not available for County Road 113, the majority of traffic is expected to be personal automobiles and light trucks. Observations during field visits suggest only limited, infrequent use by large trucks or tractor-trailers. Given the small amount of traffic, relative to U.S. Highway 4, any facility traffic is not expected to cause a major disruption of traffic flow and safety. The RD Team has indicated this site may not be feasible for operating a rail facility and without rail most operations would be on the western or riverside parcel, minimizing traffic issues with County Road 113. However, facility design will need to account for minimizing disruptions to through traffic and maintaining high standards of traffic safety.

3.5.2.2 Bruno/Brickyard Associates/Alonzo

Knickerbocker Road separates the shoreline parcel from the inland parcels of the site. The road is a two-lane road with little or no shoulder. The road is narrow and does not appear to receive heavy traffic volume. It is expected that the primary source of traffic is local. The road forms a loop, connecting at its western and eastern ends to Route 67. No major businesses are located on the road, with land use being primarily residential and recreational. A golf course is located adjacent to and south of the site, on both the eastern and western sides of Knickerbocker Road. An access road to Lock 3 and upper Mechanicville Dam is located near the site, on the west side of the road. The access road is used by New York State Electric & Gas.

No traffic count data was available for Knickerbocker Road. However, the data for Route 67 was available for the section between the Saratoga County line and Hudson River Road (west of Knickerbocker Road) and the section between Hudson River Road and the Route 40 overlap (east of Knickerbocker Road). Route 67 is classified as a minor urban arterial in the vicinity of Knickerbocker Road. Based on the 2002 AADT estimates, the section of Route 67 in the vicinity of Knickerbocker Road receives approximately 1,500 fewer vehicles (6,121 to 4,665) than the section immediately to the west (Figure 3.5.2-2). It is assumed that this traffic is diverting south on Hudson River Road. Most of the traffic along Route 67 in the vicinity of the site is composed of passenger cars and 2-axle, 4-tire pickups, vans, and motor homes (including those hauling trailers). Approximately 11% of the traffic is larger vehicles. The AADT for this section of

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Potential Site Boundary
- Railroads
- 4665 2002 Estimated AADT (NYSDOT)
- 3195[a] 2003 Measured AADT (NYSDOT)

AADT = Average Annual Daily Traffic

Hudson River PCBs SUPERFUND SITE

Figure 3.5.2-2
Traffic Count Information
Bruno / Brickyard Associates / Alonzo

2,000 1,000 0 2,000 4,000 Feet

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road in 2003 was 3,195. Peak traffic occurred during the hours of 8 a.m. (232 vehicles) and 6 p.m. (291 vehicles). Traffic on this section of road doubled between 1995 and 1998 but has decreased from an estimated 4,665 in 2000 to a measured 3,195 in 2003.

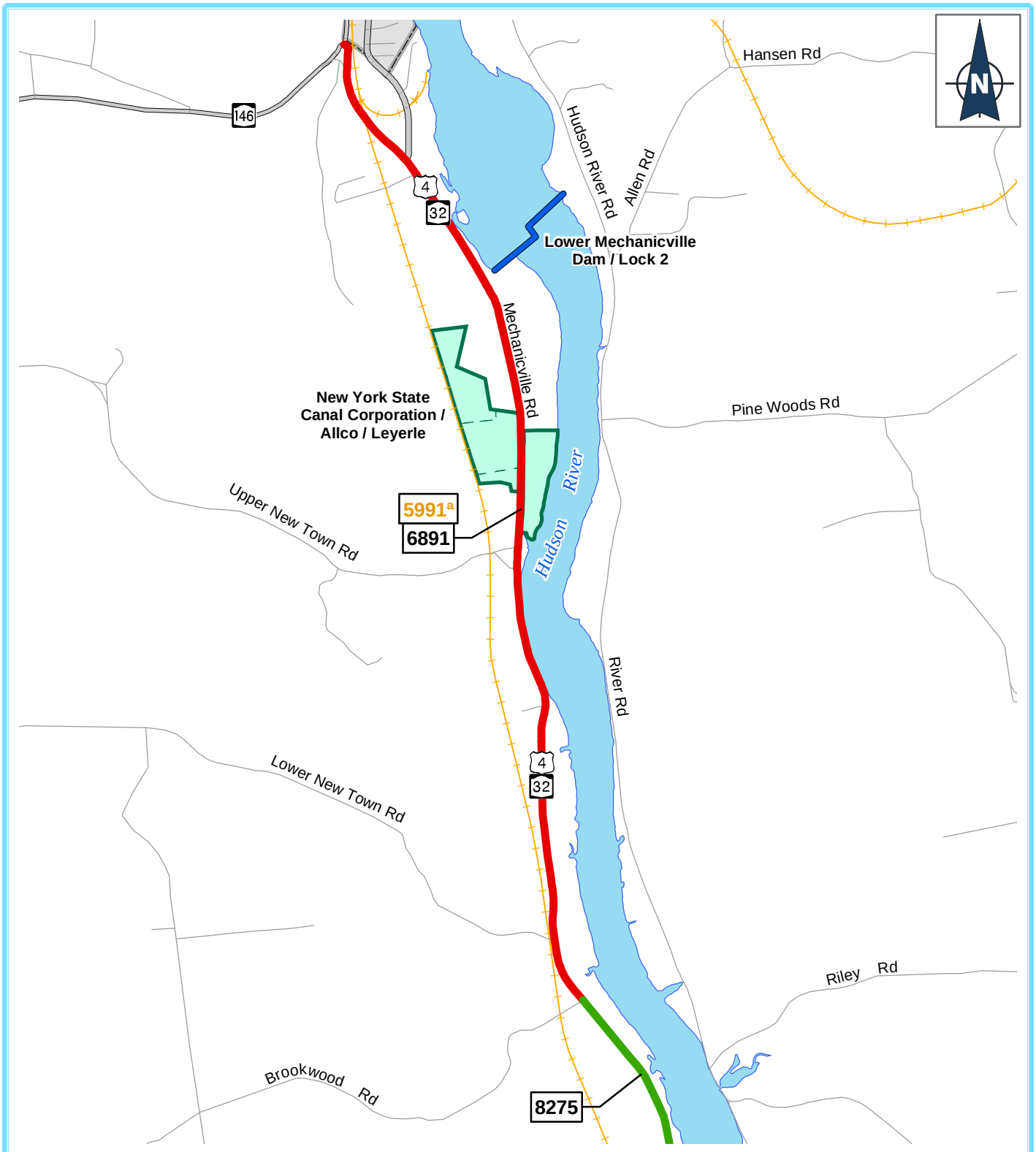
Assuming that the majority of traffic on Knickerbocker Road is local in nature and low in volume, it is expected that crossings could be designed and operated in such a way as to minimize disruptions to local traffic. This will, in part, be dependent upon the frequencies and durations of crossings required for a given period of time. The RD Team has indicated that processed material would need to be transported over or under this roadway and will evaluate this during design.

3.5.2.3 NYSCC/Allco/Leyerle

U.S. Highway 4/State Route 32 separates the shoreline parcel from the inland parcels on this site. In the vicinity of the site the road consists of two lanes with shoulders on both sides. Traffic data from NYSDOT classifies the section of U.S. Highway 4/State Route 32 between Brookwood Road and the Route 146 junction as a rural principal arterial-expressway/other (Figure 3.5.2-3). The measured AADT for this section in 2003 was 5,991. The majority of vehicle traffic along this section includes passenger cars and 2-axle, 4-tire pickup trucks, vans, and motor homes (including those hauling trailers). Approximately 8.9% of the traffic was classified as larger than the 2-axle, 4-tire class. The largest vehicle noted was a 6-axle tractor-trailer unit, of which six were counted. Peak hourly traffic counts occurred at 8 a.m. (502 vehicles) and 6 p.m. (535 vehicles). Estimated AADT for 2002 indicated that approximately 1,400 more vehicles (from 6,891 to 8,275) used the section of U.S. Highway 4/State Route 32 immediately to the south, between the U.S. Highway 4 and State Route 32 overlap and Brookwood Road. This indicates a reduction in traffic (traveling from south to north) before the point where the road bisects the site. This may be due to the General Electric Silicones facility south of the site, which is likely a destination point along the road in the vicinity of the FCS. In general the AADT for the road section that crosses the site had slightly increased between 1993 and 2002. However, data for 2003 indicated the AADT had decreased by approximately 900 vehicles between the estimated value for 2002 and the measured value in 2003. This decrease was from an estimated AADT of 6,891 in 2002 to a measured AADT of 5,991 in 2003.

The relatively high traffic volumes on this road could pose a challenge to site design. During peak traffic flow hours (8 a.m. and 6 p.m.) and based upon peak traffic volume measurements (not a number provided by NYSDOT), an average of eight vehicles per minute may pass the site. The RD Team indicated the facility operations will require an extensive covered conveyor, and processed sediment would need to be transported either over or under U.S. Highway 4/State Route 32. Facility design will need to minimize disruptions to through traffic and maintain high standards of traffic safety.

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Potential Site Boundary
- Railroads
- 6891 2002 Estimated AADT (NYSDOT)
- 5991[a] 2003 Measured AADT (NYSDOT)

AADT = Average Annual Daily Traffic

Hudson River
PCBs SUPERFUND SITE

Figure 3.5.2-3
Traffic Count Information
New York State Canal Corporation / Allco / Leyerle

2,000 1,000 0 2,000 4,000 6,000 Feet

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3.5.3 Summary

Three of the FCSs are crossed by public roads, which may create potential design limitations or design considerations. It is expected that these will be addressed in the design phase.