McFarland Johnson
Innovative Solutions / Sustainable Results

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TECHNICAL MEMORANDUM

May 19, 2021

To: File

From: Thomas Wirickx, CE, PWS, QAWB, Senior Environmental Scientist
Corinne Steinmuller, Environmental Analyst

RE: Port of Albany Expansion Project
Supplemental Rare Plant Species Investigation

The purpose of this technical memorandum is to summarize McFarland Johnson, Inc.'s (MJ) supplemental investigation into rare plant species reported to have the potential to occur on lands to be included in the Port of Albany Expansion Project, located in the Town of Bethlehem, Albany County, New York.

The initial study area included 94.75 acres located north and south of where the Normans Kill enters the Hudson River. The New York Natural Heritage Program (NYNHP) was queried and responded that three (3) state-listed plant species with potential to occur were located in close proximity to the project site; two New York State (NYS) endangered species: side-oats grama (*Bouteloua curtipendula var. curtipendula*) and violet wood sorrel (*Oxalis violacea*), and the NYS threatened Small's knotweed (*Polygonum buxiforme*) (Attachment A).

MJ contracted with Terrestrial Environmental Specialists, Inc. (TES) to screen the initial study area (94.75 acres) for these species in May 2019. Results of this effort are provided in the original June 2019 letter report from TES. A copy of that report has been included with this technical memorandum as Attachment B. Since this initial screening, an additional 18.22 acres of land has been identified adjacent and to the west of the initial study area that may be impacted by the project (Attachment C). As a result, additional field screenings were conducted by MJ in April 2021. General site photographs collected during the field screenings have been included with this technical memorandum as Attachment D.

Background Information and Natural History

The supplemental study area is generally bounded by the Normanskill to the north, the Bethlehem Energy Center to the south, a rail corridor to the west, and a forested area and portions of the initial study area to the east. The site generally consists of an overhead power and underground natural gas line corridor, the gas line receive periodic mowing and woody vegetation management. The soils within the study area primarily consist of historic bottom ash, fly ash, brick, and miscellaneous debris fill. The ecological community is best described as an intermediate between a mowed roadside/pathway and successional old field community, with an inclusion of common reed marsh. The vegetation within mowed roadside/pathway communities may be dominated by grasses, sedges, and rushes; or it may be dominated by forbs, vines, and low

shrubs that can tolerate infrequent mowing, while old field communities are generally dominated by forbs and grasses on sites that have been previously maintained. Common reed marshes are wetlands dominated by common reed (*Phragmites australis*) that were created or formed in anthropogenically disturbed areas and are common along highways and railroads (Edinger et al, 2014).

Side-oats grama

Side-oats grama is widely spread west of New York, however only eight (8) populations are currently known to exist in New York, with 10 historical population likely extirpated. Current populations are primarily located along active or historic railroad lines and are threatened by habitat succession and prevalence of invasive species such as common reed. This species is typically found in dry limestone soils and open areas of disturbance such as abandoned sandpits, pastures, railroads, and powerlines. Some associated species include green milkweed (*Asclepias viridiflora*), Morrow's honeysuckle (*Lonicera morrowii*), hop hornbeam (*Ostrya virginiana*), and poison ivy (*Toxicodendron radicans*). Side-oats grama has a distinctive overall form and is best identified while flowering or fruiting (mid-July through fall), but the recognizable growth form and flower stalks are often identifiable throughout the year, including winter (NYNHP, 2021a).

Violet wood sorrel

Violet wood sorrel is currently known to occur in the Hudson Valley from Columbia County south as well as on Long Island. One of the largest threats to this rare plant is the range expansions of invasive species, predominantly garlic mustard (*Alliaria petiolata*). They are also sensitive to trampling. This species is predominantly found on steep rocky slopes with rocky, rich soils. Surrounding forest is often oak-hickory. Some associated species include silver maple (*Acer saccharinum*), garlic mustard, and sweet vernal grass (*Anthoxanthum odoratum*). The best time to see this species is during flowering from May to mid-June with fruits lasting through mid-July (NYNHP, 2021b)..

Small's knotweed

Small's knotweed is limited to five (5) known existing populations. Most populations are restricted to rocky beach areas in eastern Long Island with scattered upstate records around roadsides and railroad yards. Small's knotweed occurs in sandy soils and beaches as well as disturbed areas such as railroad yards and old roads. Associated species include American searocket (*Cakile edentula*), seaside spurge (*Chamaesyce polygonifolia*), field horsetail (*Equisetum arvense*), alfalfa (*Medicago sativa*), and common plantain (*Plantago major*). Small's knotweed is best identified while flowering, beginning in mid-July through mid-October (NYNHP, 2021c).

Field Study

A field investigation took place on April 28 and 29, 2021. As no species are expected to be flowering at this time, two MJ field biologists transected the property two (2) meters apart and examined flora over the 18.22-acre site, noting the general species composition of the plant community while searching for the target rare plant species.

Approximately 7.1 acres of the site consisted of predominately palustrine emergent wetland dominated by common reed. Other facultative or wetter species included purple loosestrife (*Lythrum salicaria*), path rush (*Juncus tenuis*), spotted touch-me-not (*Impatiens capensis*), and reed canary grass (*Phalaris arundinacea*).

Upland herbaceous species recorded at the site included: Kentucky bluegrass (*Poa pratensis*), Canada goldenrod (Solidago canadensis), rough goldenrod (*Solidago rugosa*), garlic mustard, spotted knapweed (*Centaurea steobe*), common thistle (*Cirsium vulgare*), ditch stonecrop (*Penthorum sedoides*), birdsfoot trefoil (*Lotus corniculatus*), bedstraw spp. (*Galium* spp.), cow vetch (*Vicia cracca*), henbit (*Lamium amplexicaule*), common teasel (*Dipsacus fullonum*), wild strawberry (*Fragaria vesca*), clover spp. (*Trifolium* spp.), Queen Anne's lace (*Daucus carota*), field horsetail (*Equisetum arvense*), common dandelion (*Taraxacum officinale*), common mullein (*Verbascum thapsus*), and willowherb (*Epilobium* spp.).

Shrub species included Morrow's honeysuckle (*Lonicera morrowii*) and raspberry (*Rubus idaeus*).

Additionally, MJ biologists visited an area of the previous study area where polygonum species resembling Small's knotweed were identified by TES. MJ verified the presence of polygonum species in an active growth state but were unable to confirm species level identification. Based on the site conditions, MJ concurs with TES's opinion that this species is likely the more common and widespread common doorweed (*Polygonum aviculare*).

Side-oats grama

MJ identified the area of railroad ballast adjacent to the site area as unsuitable for this species due to lack of soils. The toe of slope did not exhibit open areas or sandy soils necessary for the propagation of this species. No grass species were identified within the supplemental study area that demonstrated the distinctive growth form, vegetative characteristics, or semi-persistent stalks of side-oats grama. The majority of the site is dominated by common reed, which has been identified one of the largest threats to this species in New York State.

Violet wood sorrel

No forested areas exist within the supplemental study area; the majority of the supplemental study area consists of emergent wetland and upland disturbed areas dominated by common reed. The adjacent forest area does not represent the typical oak-hickory forest this species prefers. Additionally, prevalence of garlic mustard is a negative indicator of the viability of this species on site.

Small's knotweed

Similar to side-oats grama, this species prefers open habitat with sandy soils, which were not identified on site. The upland area consisted of common field and weedy species as well as invasive species such as common reed and garlic mustard.

Conclusions

MJ conducted a field investigation to determine the potential for two New York State listed endangered species: side-oats grama and Small's knotweed, and one state threatened species: violet wood sorrel occur within the supplemental study area for the Port of Albany Expansion project located in the Town of Bethlehem, Albany County, New York.

Based on our investigation, there was no potential for violet wood sorrel or side-oats grama on the site due to lack of habitat as the site was largely dominated by emergent wetland and invasive weed species. No polygonum species were identified within the supplemental review area.

ATTACHMENTS:

Attachment A- NYNHP Database Report

Attachment B- TES Rare Plant Report

Attachment C- Supplemental Rare Plant Investigation Location Map

Attachment D- Photograph Log

LITERATURE CITED:

Edinger, G. J., D. J. Evans, S. Gebauer, T. G. Howard, D. M. Hunt, and A. M. Olivero (editors). 2014. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. New York Natural Heritage Program, New York State Department of Environmental Conservation, Albany, New York.

New York Natural Heritage Program. 2021a. Online Conservation Guide for Bouteloua curtipendula var. curtipendula. Available from: https://guides.nynhp.org/side-oats-grama/. Accessed May 11, 2021.

New York Natural Heritage Program. 2021b. Online Conservation Guide for Oxalis violacea. Available from: https://guides.nynhp.org/violet-wood-sorrel/. Accessed May 11, 2021.

New York Natural Heritage Program. 2021c. Online Conservation Guide for Polygonum buxiforme. Available from: https://guides.nynhp.org/smalls-knotweed/. Accessed May 11, 2021.

Attachment A

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

February 11, 2019

Thomas Wirickx
McFarland Johnson, Inc.
49 Court Street, P.O. Box 1980
Binghamton, NY 13902

Re: Port of Albany Development Project
County: Albany Town/City: Bethlehem

Dear Mr. Wirickx:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur in the vicinity of the project site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

Our database is continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Region 4 Office, Division of Environmental Permits at dep.r4@dec.ny.gov, 518-357-2449.

Sincerely,

Heidi Krahling
Environmental Review Specialist
New York Natural Heritage Program

The following state-listed animals have been documented at or in the vicinity of the project site.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed or are candidates for federal listing.

For information about any permit considerations for your project, please contact the Permits staff at the NYSDEC Region 4 Office at dep.r4@dec.ny.gov, 518-357-2449.

The following species has been documented at the project site.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
Birds				
Bald Eagle *Breeding*	*Haliaeetus leucocephalus*	Threatened		13817

The following species has been documented in the Hudson River and so could occur near the project site.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
Fish				
Shortnose Sturgeon	*Acipenser brevirostrum*	Endangered	Endangered	1091

This report only includes records from the NY Natural Heritage database.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NYSDEC at www.dec.ny.gov/animals/7494.html.

The following rare plants and rare animals have been documented at the project site, or in its vicinity.

We recommend that potential impacts of the proposed project on these species or communities be addressed as part of any environmental assessment or review conducted as part of the planning, permitting and approval process, such as reviews conducted under SEQR. Field surveys of the project site may be necessary to determine the status of a species at the site, particularly for sites that are currently undeveloped and may still contain suitable habitat. Final requirements of the project to avoid, minimize, or mitigate potential impacts are determined by the lead permitting agency or the government body approving the project.

The following animals, while not listed by New York State as Endangered or Threatened, are rare in New York and are of conservation concern.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*
Dragonflies and Damselflies			
Cobra Clubtail	*Gomphurus vastus*	Unlisted	Critically Imperiled in NYS

Documented at the project site where the Norman's Kill meets Island Creek. 2008-07-03. 13447

Umber Shadowdragon	*Neurocordulia obsoleta*	Unlisted	Critically Imperiled in NYS

Documented at the project site where the Norman's Kill meets Island Creek. 2008-07-03. 14511

Freshwater Mussels			
Alewife Floater	*Anodonta implicata*	Unlisted	Critically Imperiled in NYS

Documented in the Hudson River from Troy to Albany and so could occur near the project site. Autumn 1984. 9713

The following plants are listed as Endangered or Threatened by New York State, and/or are rare in New York State, and so are a vulnerable natural resource of conservation concern.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*
Vascular Plants			
Side-oats Grama	*Bouteloua curtipendula var. curtipendula*	Endangered	Imperiled in NYS

Documented within 80 yards west of the southern section of the project site. 1996-09-12: The plants are on the lower slope of a red cedar rocky summit along an old road and railroad cut. 11033

Violet Wood Sorrel	*Oxalis violacea*	Threatened	Imperiled in NYS

Documented within 0.25 mile southwest of the project site. 2004-06-03: The plants are in Appalachian Oak Hickory Forest along the trail. 3602

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, from NatureServe Explorer at www.natureserve.org/explorer, and from USDA's Plants Database at http://plants.usda.gov/index.html (for plants).

The following rare plant has historical records in the vicinity of the project site.

The following rare plant was documented in the vicinity of the project site at one time, but has not been documented there since 1979 or earlier, and/or there is uncertainty regarding its continued presence. There is no recent information on this plant in the vicinity of the project site and its current status there is unknown. In most cases the precise location of the plant in this vicinity at the time it was last documented is also unknown.

If suitable habitat for this plant is present in the vicinity of the project site, it is possible that it may still occur there. We recommend that any field surveys to the site include a search for this species, particularly at sites that are currently undeveloped and may still contain suitable habitat.

COMMON NAME	*SCIENTIFIC NAME*	*NYS LISTING*	*HERITAGE CONSERVATION STATUS*
Vascular Plants			
Small's Knotweed	*Polygonum buxiforme*	Endangered	Critically Imperiled in NYS
1974-07-25: Albany Port. Railroad yards.			3838

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, from NatureServe Explorer at www.natureserve.org/explorer, and from USDA's Plants Database at http://plants.usda.gov/index.html (for plants).

Attachment B

Terrestrial Environmental Specialists, Inc.
23 COUNTY ROUTE 6, SUITE A, PHOENIX, NY 13135
(315) 695-7228 fax: (315) 695-3277 www.tesenvironmental.com

June 11, 2019

Mr. Thomas C. Wirickx, CSE, PWS, QAWB
Senior Environmentalist
McFarland Johnson
49 Court Street PO Box 198
Binghamton, New York 13902

RE: Endangered Species Investigation, Port of Albany, Town of Bethlehem, Albany County,NY
TES File No 4441

Dear Mr Wirickx:

Terrestrial Environmental Specialists, Inc. (TES) contracted with McFarland Johnson to conduct an endangered plant survey at the Port of Albany located in the Town of Bethlehem, Albany County, New York. The study area is approximately 94.75 acres and is located in two sections, north and south of where the Normanskill enters the Hudson River (Figure 1). Based on your contact with the New York Natural Heritage program, three state-listed plant species with potential to occur were located in close proximity to the project site. These three plants subject to this investigation are side-oats grama (*Bouteloua curtipendula var. curtipendula*), violet wood sorrel (*Oxalis violacea*), and Small's knotweed (*Polygonum buxiforme*).

TES performed three tasks relative to these species. First, TES reviewed available background information relative to the site and the natural history information for these plant species. Second, two TES botanists conducted a field review on May 10, 2019 to examine the site for the presence of these species and to conduct a habitat evaluation. The third task was for TES to prepare this report documenting our findings.

Background Information and Natural History Information

The project site is approximately 94.75 acres located in the Town of Bethlehem, Albany County, New York (Figure 1) and is divided into a northern and southern section that is separated by the Normanskill. The northern-most portion of the site is bounded by Normanskill Street and industrial uses of the Port of Albany to the east and by the Normanskill to the west and south. The southern portion of the site is bounded by River Road and the rail line to the

west, the Hudson River to the east and the Normanskill to the north. South of the site is the former Albany steam plant. The shoreline of the Hudson River has bulkheads along the entire length of the southern portion of the study area and is subject to tidal fluctuations.

Based on a review of soil information provided by McFarland Johnson, the original soil within the study area is Wayland silt loam, a hydric soil. However much of the site is covered with bottom ash and fly ash of varying depths.

TES reviewed an aerial photograph of the site prior to the field review which indicated that the site was primarily forested with several open areas in the southern portion of the study area (Figure 2).

Side-oats grama (*Bouteloua curtipendula var. curtipendula*)

Side-oats grama is listed as endangered in New York State. Side-oats grama is a perennial grass with stems up to 1 meter tall but typically less than 1 meter. The large spikes are well-spaced along a 1-sided raceme. It is most distinct during flowering in mid-summer or fruiting stage from mid-July through the fall, although the stalks may be seen in winter (Gleason & Cronquist 1991). Side-oats grama is a dominant species of the central grasslands of North America and its core range is found west of the Mississippi River and in the southwestern United States (Flora of North America 2003).

Side-oats grama can be found in rich, loamy,and well-drained prairie soils, specifically dry limestone-derived soils (Gleason & Cronquist 1991, Fernald 1951). It is most often found in disturbed areas, as well as open habitats. Habitats include riverside bluffs, shale cliffs and barrens, cedar glades, and limestone pavements, including abandoned sandpits and pastures, railroads, powerlines, dry hills and plains, and dry woods (NYNHP 2009).

Side-oats grama is found primarily scattered from Long Island and the Hudson Valley, as well as alvar and limestone areas in Western New York. It is found throughout most of the U.S. (NYNHP, 2009). Transport on rail car is thought to be the dispersal mechanism that introduced this species into the Port of Albany (S. Young NY Heritage botanist personal communication).

Violet wood sorrel (*Oxalis violacea*)

Violet wood sorrel is listed as threatened in New York State. It has a bulbous base and 3-parted (clover-like), glabrous leaves with purple undersides (Gleason & Cronquist 1991). There are several 5-petaled, purplish (rarely white) flowers per leafless flowering stalk. Flowering occurs from May to mid-June and the fruit persists to mid-July.

Violet wood sorrel is found primarily on steep rocky slopes and open summits, primarily on rich soils. The typical surrounding forest type is Appalachian oak-hickory forest. Many

populations are located along trails, ledges, or other openings. Other habitats where it can be found include dry upland woods, shaded slopes, gravelly banks, and prairies (Gleason & Cronquist 1991, Fernald 1950).

Violet wood sorrel is currently found from the Hudson Valley to Columbia County to the south, but it can also be found on Long Island. Historic records include Cattaraugus, Chemung, and Tioga counties in the western part of the state (NYNHP 2008).

Small's knotweed (*Polygonum buxiforme*)

Small's knotweed is listed as endangered in New York State. Small's knotweed is a bluish or grayish green annual herb. The fruit is dark brown with 3-sided achenes (Mitchell & Dean 1978). It can be identified when it is flowering. However, it can only be reliably separated from other closely related *Polygonums* by the presence of small pouches on the outer tepals. Flowering begins in July and the fruits will persist until the first frost (NYNHP 2012).

Small's knotweed can be found on packed, non-drifting sandy beaches in both maritime and inland habitats (Mitchell & Dean 1978). It can also occur on pebbly and gravelly beaches (Gleason & Cronquist 1991). It is currently found scattered throughout New York State in dry open habitats that can be either natural or human-disturbed. Most are located in rocky beach areas of far eastern Long Island. Many of the upstate locations are on roadsides, fields, and railroad yards. It is widespread across the U.S. (NYNHP, 2012).

Field Review

TES botanists, Bernard Carr and Elizabeth MacEwen conducted a field survey for the three listed plant species on May 10, 2019. TES examined the entire site looking for appropriate habitat for the three-state listed plant species. At the time of this field investigation, only violet wood sorrel would be expected to be in flower. Both side-oats grama and Small's knotweed would be found flowering later in the growing season.

The majority of the study area site consisted of a dense forest similar to a "dredge spoil forest" which is found on highly-disturbed sites along the Hudson River in Albany and Rensselaer County. This forest classification is not officially listed in the Ecological Communities of New York State (Edinger 2002). TES also found several wetlands area, a barren area with fly ash and a few open areas within the study area.

Wooded areas in the study area were dominated by Eastern cottonwood (*Populus deltoides*), box elder (*Acer negundo*), and American elm (*Ulmus americana*). Buckthorn (*Rhamnus cathartica*) was a dominant understory tree throughout the site. The study area had extensive stands of common reed grass (*Phragmites australis*), an invasive non-native species.

Other invasive plants such as garlic mustard *(Alliaria petiolata*), oriental bittersweet (*Celastrus orbiculatus*), and Japanese barberry (*Berberis thunbergii*) were dominant and extensive throughout the site.

TES search efforts were concentrated in finding habitat and plant communities that would support violet wood sorrel, side-oats grama, and Small's knotweed.

Violet wood sorrel would be expected to be in leaf or in flower during the time of the field survey. TES concentrated our effort in all of the forested areas on the project site. There was no habitat on the project site which met the requirements of violet wood sorrel. TES did not locate any areas of Appalachian oak-hickory forest (Edinger 2002).

Side-oats grama is a western species that is often found in association with railroad ballast in the eastern United States. This grass prefers to be located in areas of full sun and occasionally can be found in areas of moderate light intensity. TES noted one area in the southwest corner of the southern parcel next to the property fence that had the required open condition (Figure 2). TES found a variety of herbaceous plant species but did not locate side-oats grama. If further field investigations were necessary, this area would be the only portion of the site that would require further review. TES also noted an open area of fly ash in the southern-central portion of the site. This area was almost completely depauperate of all plant species with the exception of the invasive common reed grass. Side-oats grama would not be able to tolerate the soil conditions in this area.

Small's knotweed is a species that is considered state historical as its last sighting was in 1974. This species is most often known in New York State from sandy areas near the coast. TES did notice one small patch of *Polygonum sp*. immediately next to Normanskill Road edge (Figure 2). This was the only area with full sun where this species could occur. While this area could require further investigation, it is most likely that that this species is the common doorweed (*Polgyonum aviculare).*

Summary

McFarland Johnson contracted with TES to assist with a field investigation of an approximately 94.75 acre study area located at the Port of Albany. The study area consisted of two parcels both located west of River Road in the Town of Bethlehem, New York. The primary study area to the south is bounded by the Normanskill to the north, the Hudson River to the east, and a rail line and River Road to the west. South of the site is the former Albany steam plant. The majority of the project site was covered by fly ash and the forested areas have the characteristics of a "dredge spoil forest".

TES conducted a field investigation to determine whether two New York State listed endangered species: side-oats grama and Small's Knotweed and a state threatened species: violet wood sorrel occur on a site at the Port of Albany located in the Town of Bethlehem, Albany County, New York.

Based on our review, there was no potential for Violet wood sorrel on the site because its preferred habitat does not occur. In addition, the dense understory with non-native species does not provide any opportunity for this species to grow. While side-oats grama and Small's knotweed would not be in flower at the time of the field investigation, TES only found two very limited areas with potential for these species to occur. Based on our professional opinion, it is unlikely that side-oats grama or Small's knotweed occur on the site.

Sincerely,
TERRESTRIAL ENVIRONMENTAL SPECIALISTS, INC.

Bernard P. Carr
Principal Environmental Scientist

Literature Cited

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New York Natural Heritage Program. 2012. Small's Knotweed Guide. Available online at: https://guides.nynhp.org/smalls-knotweed/.

New York Natural Heritage Program. 2008. Violet Wood Sorrel Guide. Available online at: https://guides.nynhp.org/violet-wood-sorrel/.

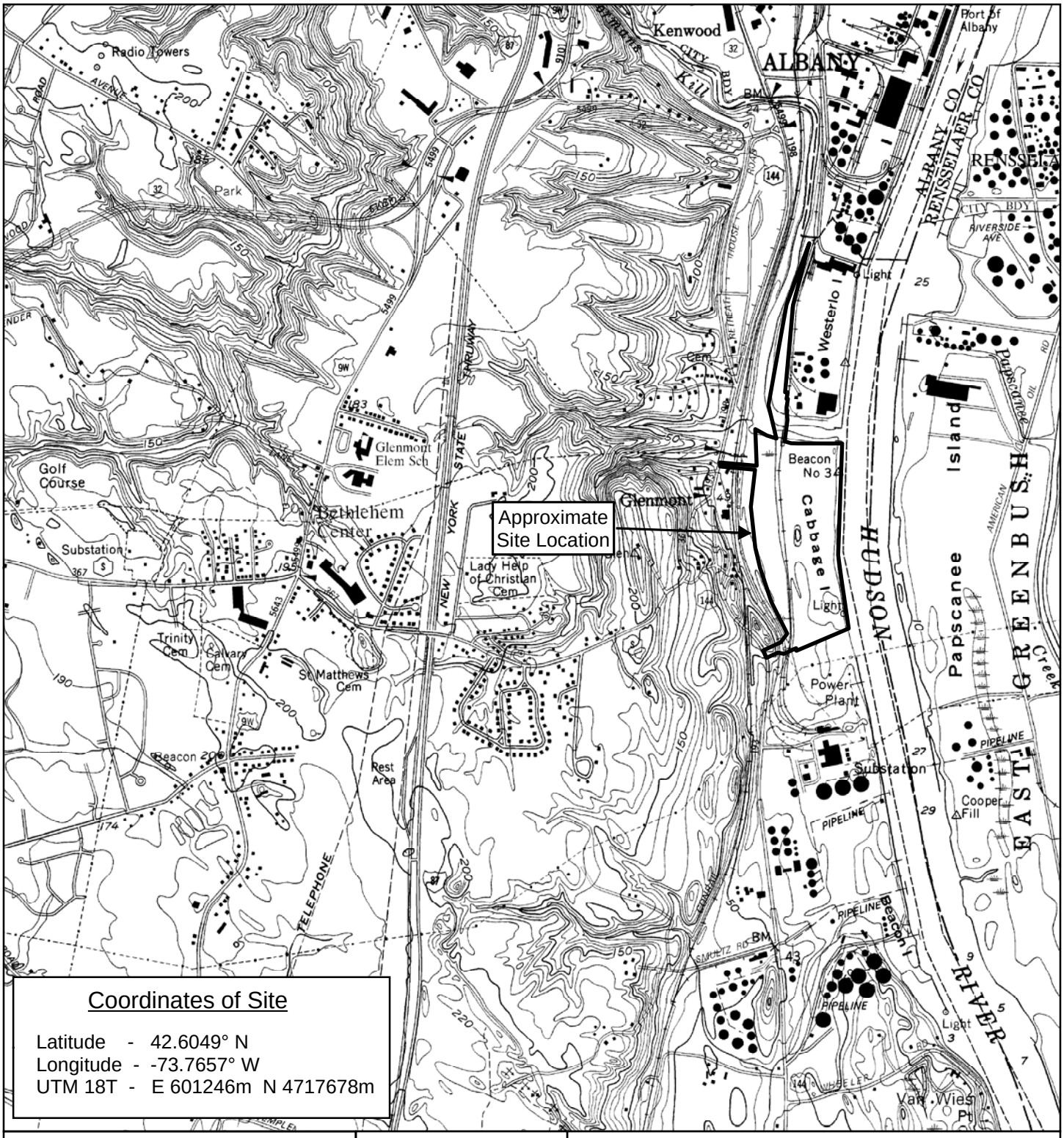


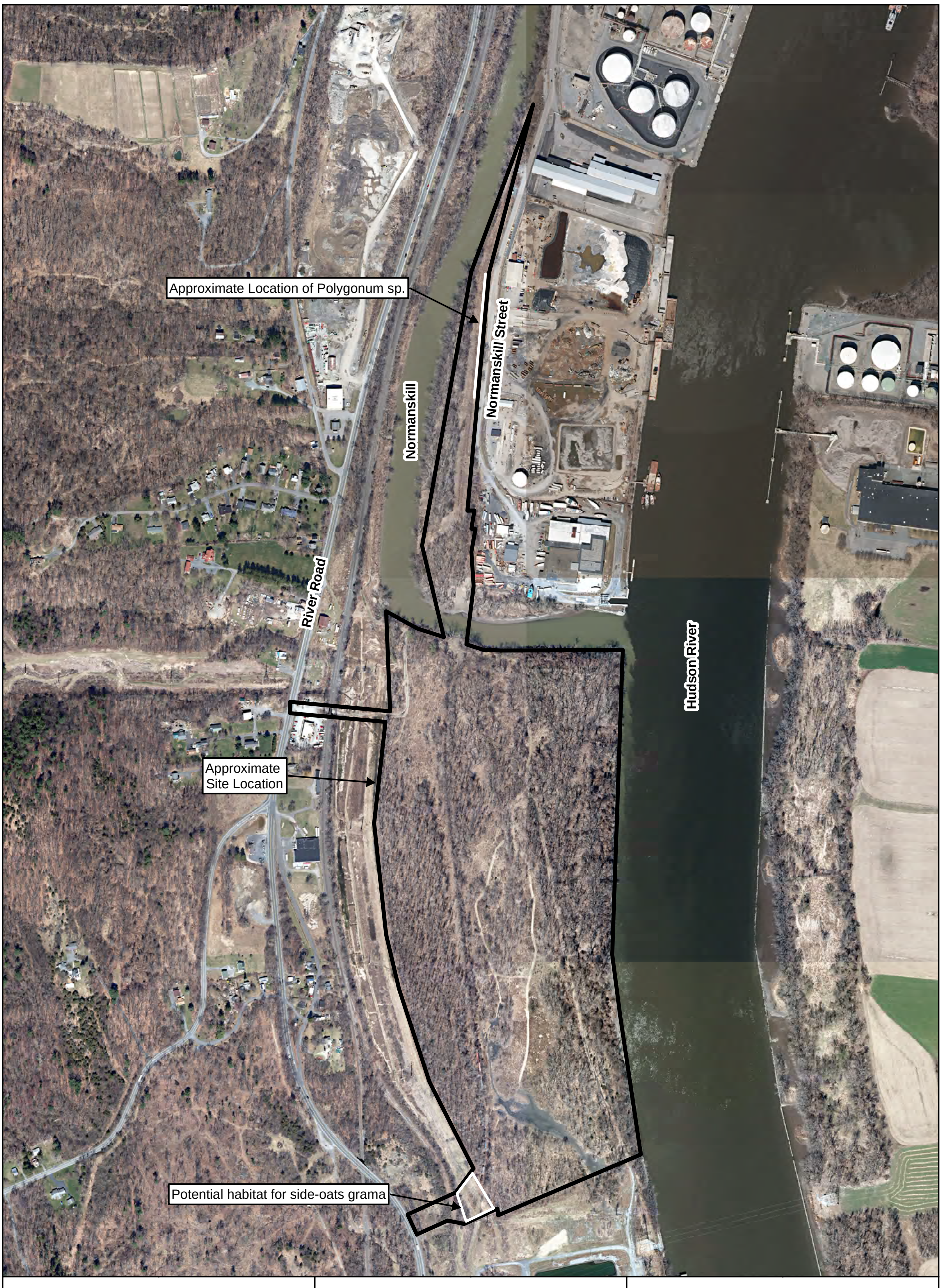
Figure 1. NYS DOT Topographic Map

Site Location

Delmar Quadrangle
1993

Prepared by TERRESTRIAL ENVIRONMENTAL SPECIALISTS, Inc.

TES File: MJI-4441\4441-Fig1.mxd\6-7-2019



N

0 500

Feet

1 inch = 500 feet

Aerial Photograph obtained from NYS GIS Clearinghouse 2017

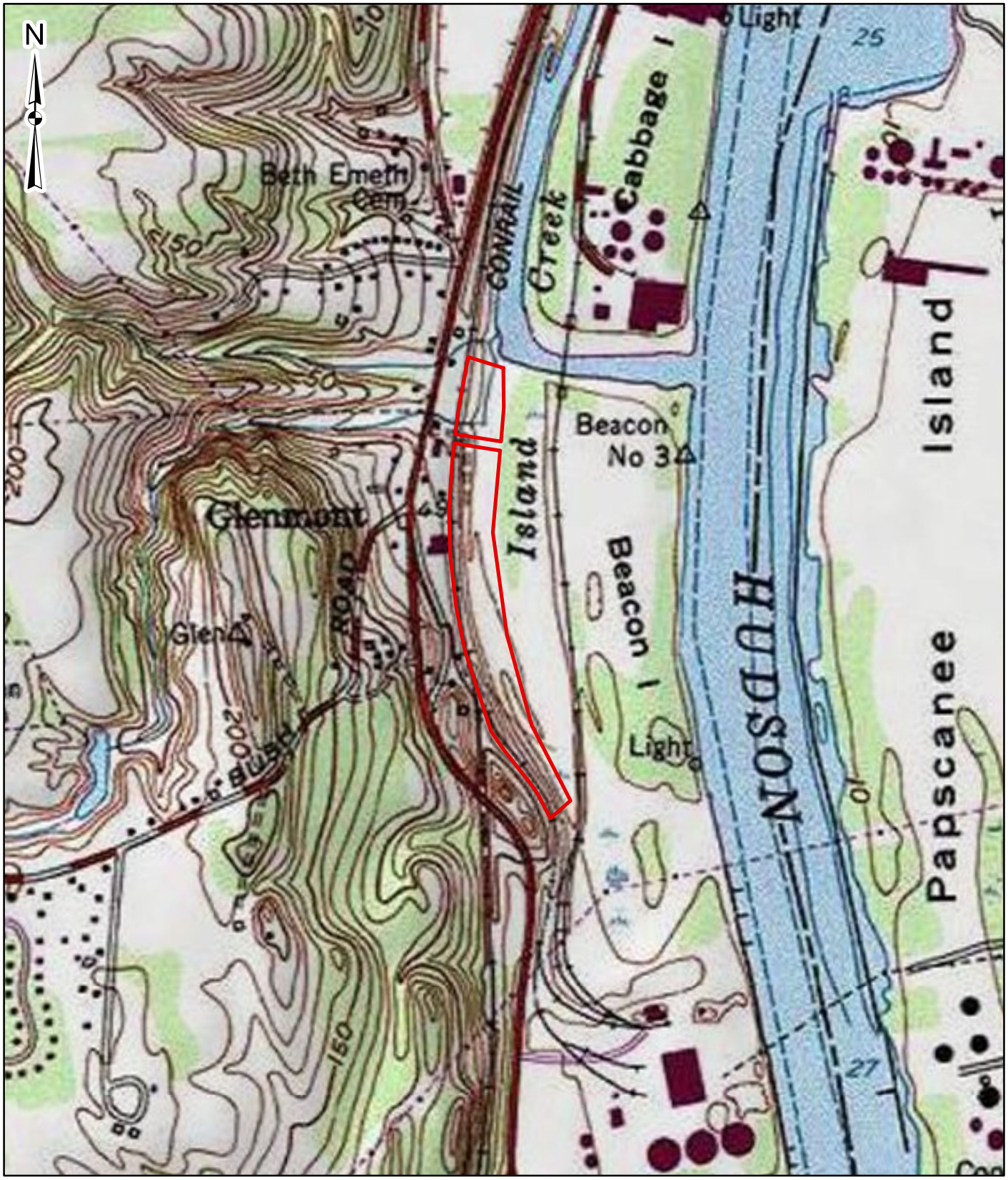
Figure Prepared by Terrestrial Environmental Specialists, Inc.

Figure 2

Aerial Photograph of Site

TES File: MJI-4441\4441-Aerial.mxd\5-12-2019

Attachment C



Legend

Supplemental Review Area

PORT OF ALBANY DEVELOPMENT
TOWN OF BETHLEHEM, ALBANY COUNTY, NEW YORK

USGS TOPOGRAPHIC MAP

SCALE :	DATE :	FIGURE :
AS SHOWN	MAY 2021	1

McFarland Johnson

N:\18641.00 Albany Port Expansion\Draw\GIS\Supplemental Enviro 2021\Figure 1 - USGS Topo-T&E Review Area.mxd

Attachment D

Wetland area at northern limits of supplemental review area.

Wetland area looking south toward Bethlehem Energy Center.

Looking northwest toward forested area from common reed dominated wetland.

Upland field vegetation at southern limits of supplemental review area.

Southern limits of supplemental review area.

Southern limits of supplemental review area.

Area previously identified by TES as containing polygonum spp.

Polygonum spp. identified in previous study area.