Assessment of Sapsucker Woods
CEE 5021: Restoration of Wetlands and Streams
October 21, 2019

SIGNATURES

Student Name	Signature	Date
Nicholas Gill	_____	10.21.19
Haowen Jin	_____	10.21.19
Mary McGuinn	_____	10.21.19
Wenduo Nie	_____	10.21.19
Jessie Powell	_____	10.21.19
Eirini Sarri	_____	10.21.19
Hannah Si	_____	10.21.19
Ariana Wetzel	_____	10.21.19
Ke Xu	_____	10.21.19

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I. VICINITY MAP

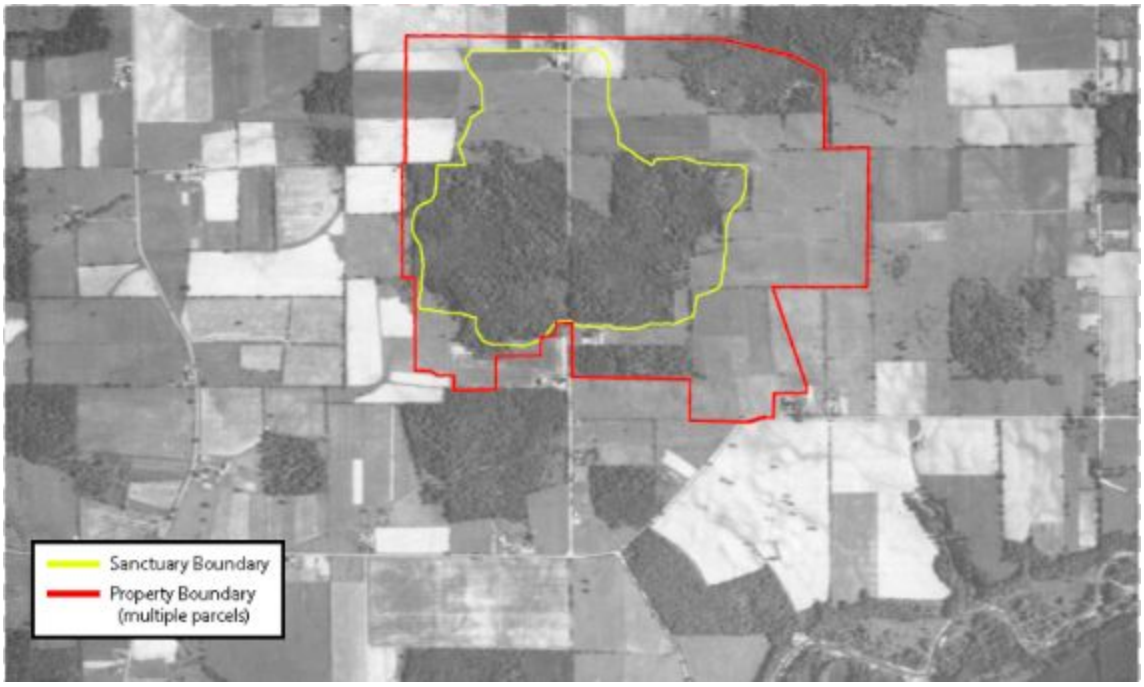
Scale 1" = 2,000'

Figure 1: Vicinity Map[1]

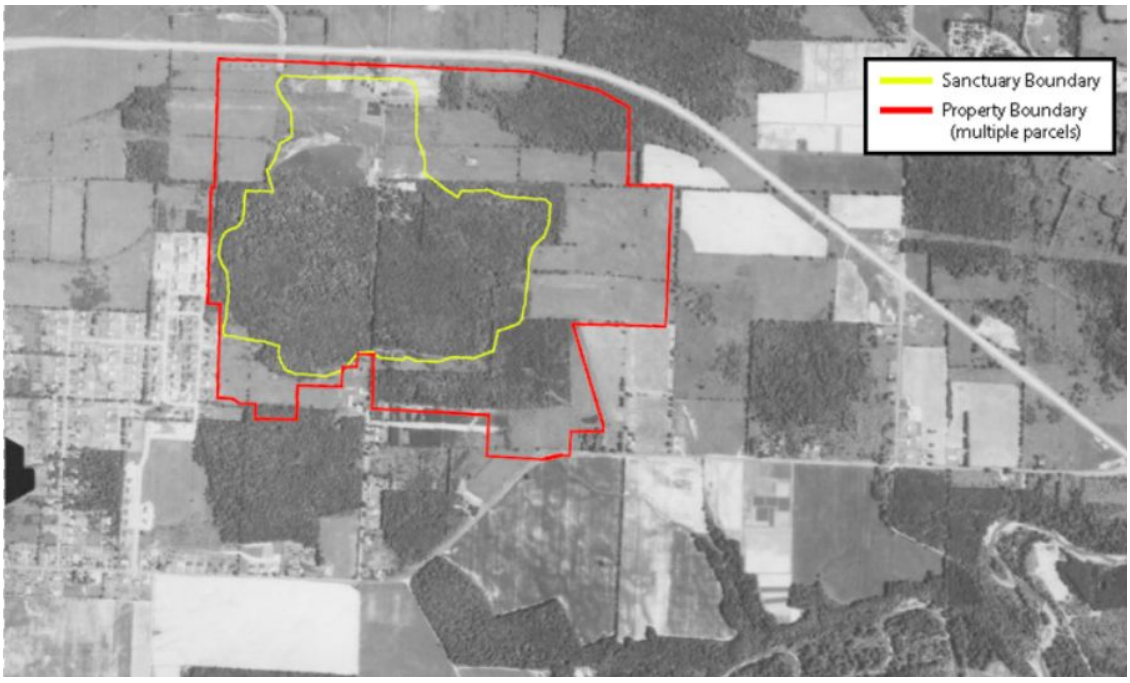
The Site is located in the Town of Ithaca, as well as the village of Lansing, and Town of Dryden, Tompkins County, NY. It is located approximately 1,400 feet southeast of the intersection of Routes 13 and 124 (HUC 041402011103)[2]. The Property that encompasses the Sapsucker Woods Bird Sanctuary (Site) is approximately 350 acres[3], whereas the Site is 158 acres.

1. My Map. (n.d.). Retrieved from https://www.arcgis.com/home/webmap/viewer.html
2. Watershed Boundaries - 12 Digit HUC, Watershed Boundaries - 12 Digit HUC (n.d.).
3. Tompkins County Property Viewer Mobile. (n.d.). Retrieved September 29, 2019, from https://geo2.tompkins-co.org/html/?viewer=tcpropmo.

II. AERIAL PHOTOGRAPHS



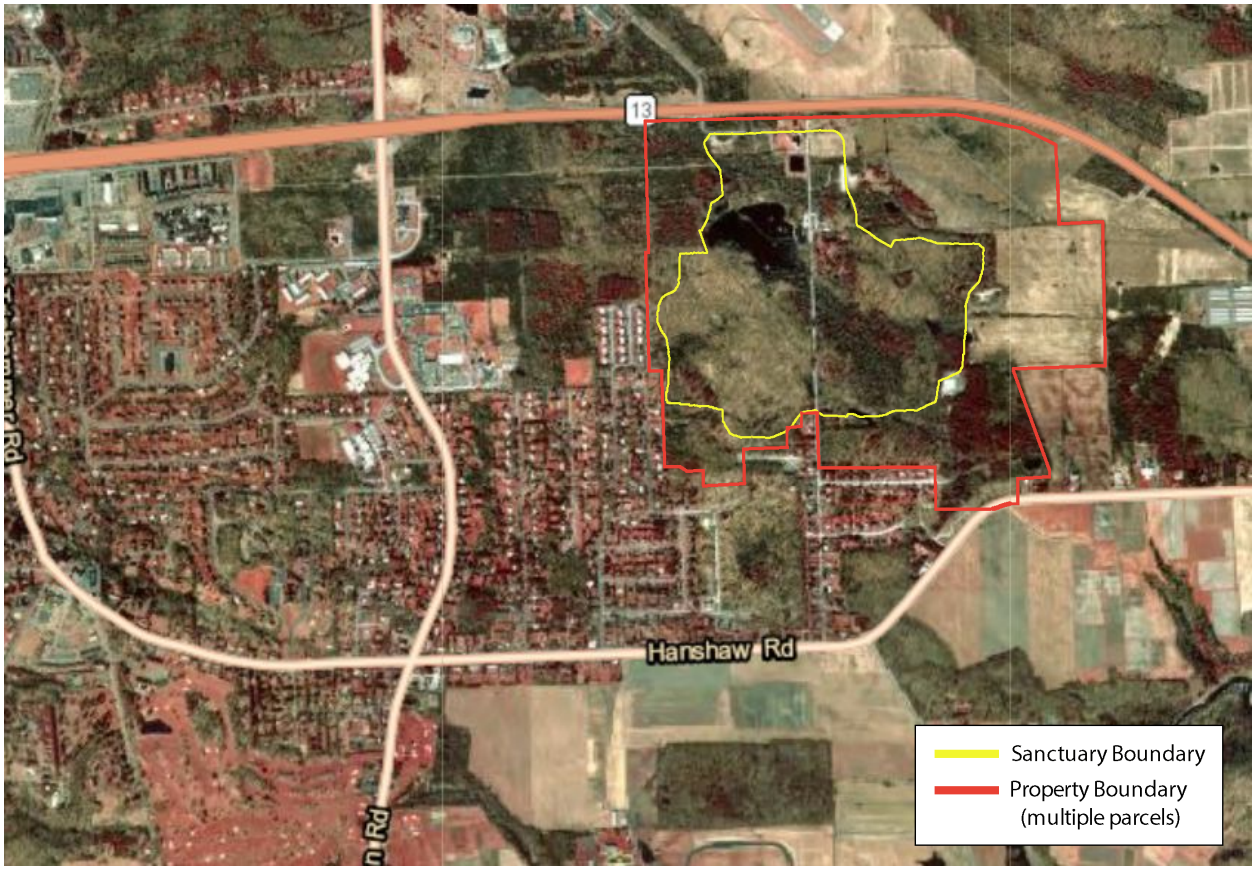
June 16, 1938



July 1, 1965

Figure 2: Aerial photographs of the Site from 1938 and 1965[1]

The aerial photographs were stored in the Cornell Institute for Resource Information Systems (IRIS). From the photos, it appears that the Site has remained relatively undeveloped since the 1930's. The surrounding area was farmland. NY-13, a local highway bordering the Site, was developed at some point between 1938 and 1965. Because it appears that the Site was mostly forested as of 1965, it is likely that the large pond found today was constructed later.



Scale 1" = 2,000'
Figure 3: Near-infrared imaging, 1994[2]

The near-infrared aerial imaging of the site shows various patches of foliage, defined by the darker red colors, near the center of the left hand side of the Site. Because it is unknown what time during the year this image was taken, it is difficult to know what season and amounts of foliage to expect.

1. Cornell University Library. (n.d.). Collection: New York State Aerial Photographs - Cornell University Library Digital Collections Search Results. Retrieved September 29, 2019, from https://digital.library.cornell.edu/?f[collection_tesim][]=New+York+State+Aerial+Photographs.
2. Discover GIS Data NY. (1994). Retrieved September 29, 2019, from https://orthos.dhses.ny.gov/#.

III. HISTORIC MAPS

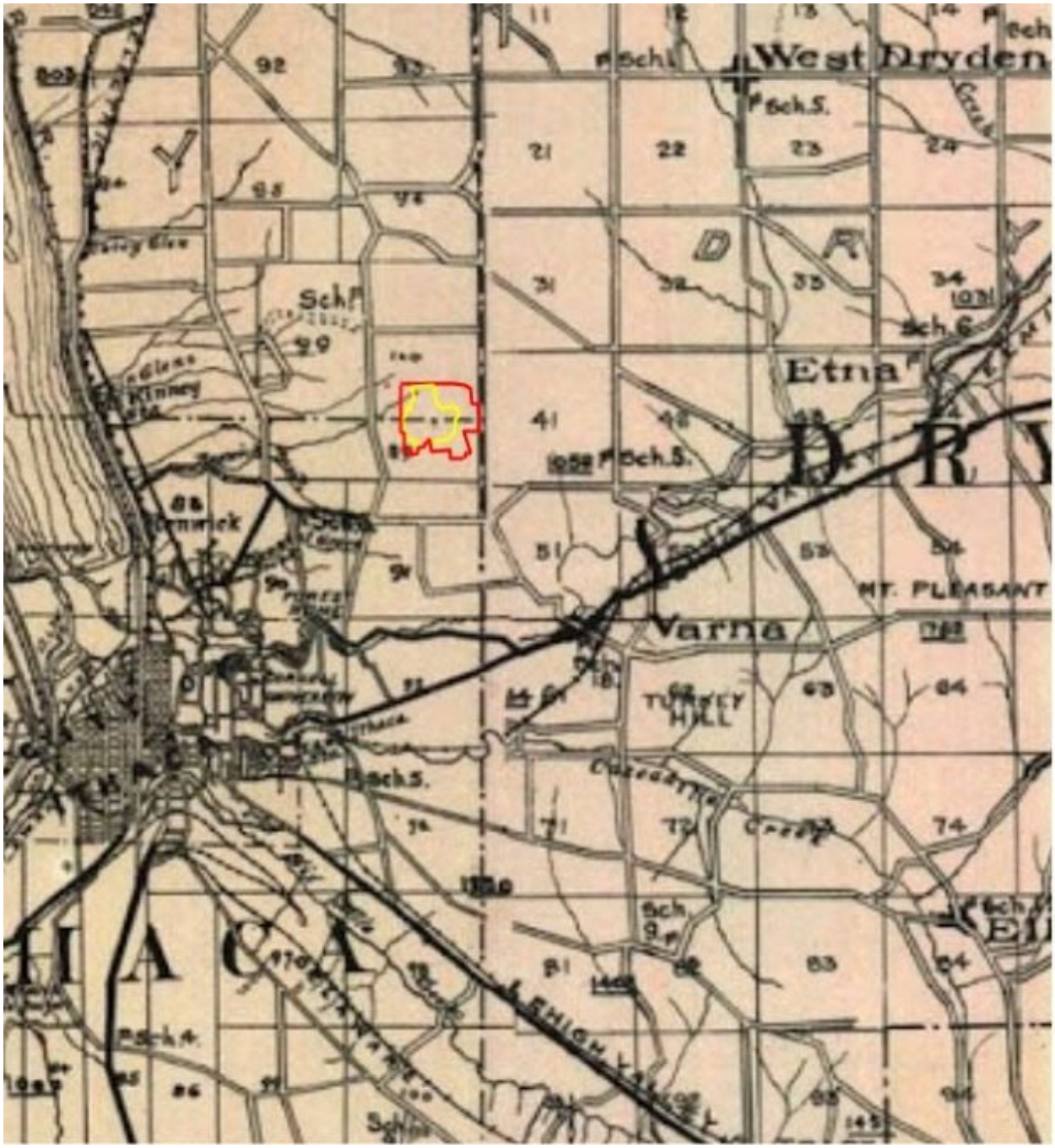


Figure 4: Map of Tompkins County, published for Ithaca Realty Company (1905)[1].

1. Maps-Library Historic! (2019). Retrieved September 29, 2019, from http://tompkinscountyny.gov/gis/maps/historic.

IV. ZONING

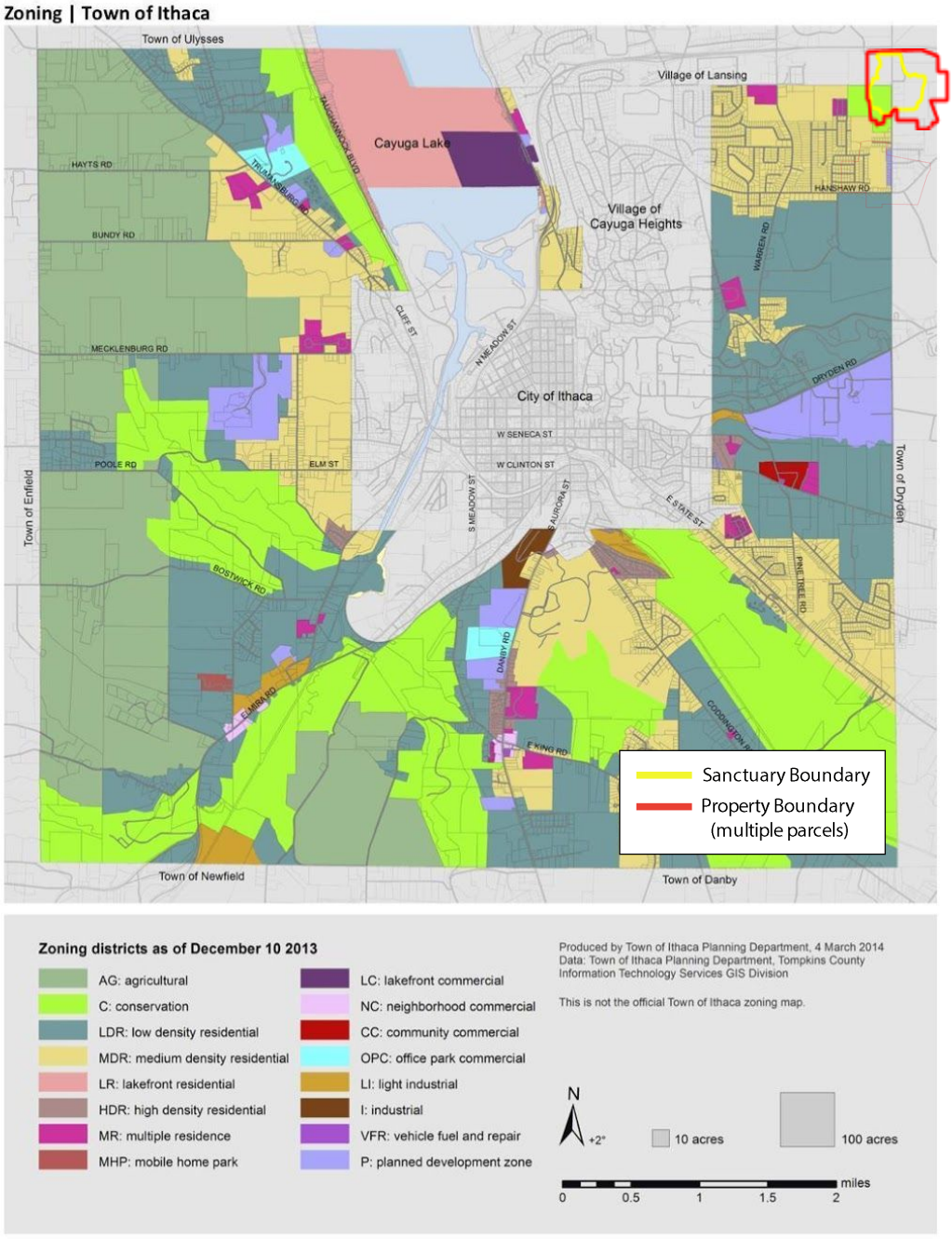


Figure 5. Town of Ithaca Zoning map (2014)[1]

The site is identified as a conservation area and is located in the north-eastern corner of the town of Ithaca.

The Town of Ithaca 2014 Comprehensive Plan defines Conservation areas as “natural areas that should be protected from inappropriate development.” This means that the area does not have a specific density and that the suitability of development will need to be evaluated on a case-by-case basis.

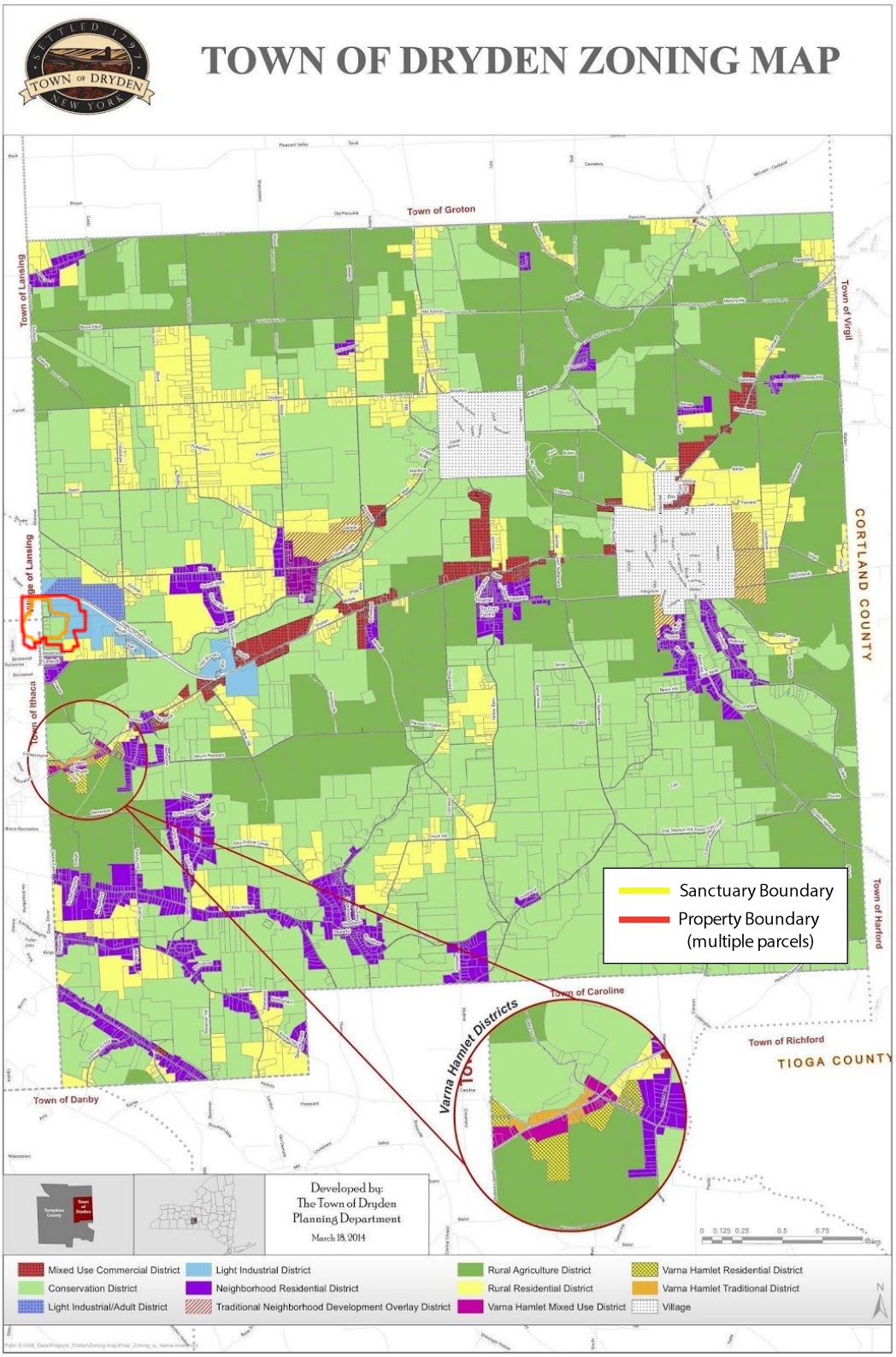


Figure 6. Town of Dryden Zoning map (2005)[2]

In Dryden, the Site area is zoned as a conservation area and the surrounding area is primarily residential including a rural residential district and a light industrial district.

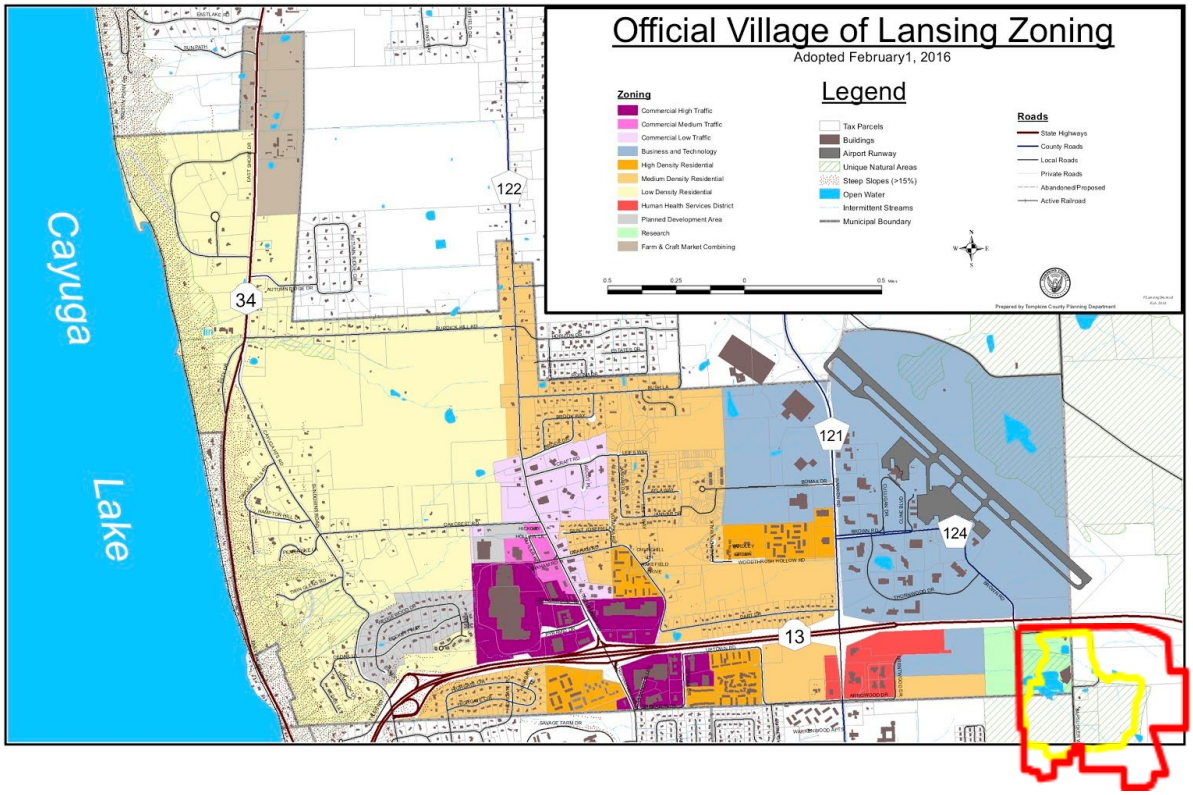


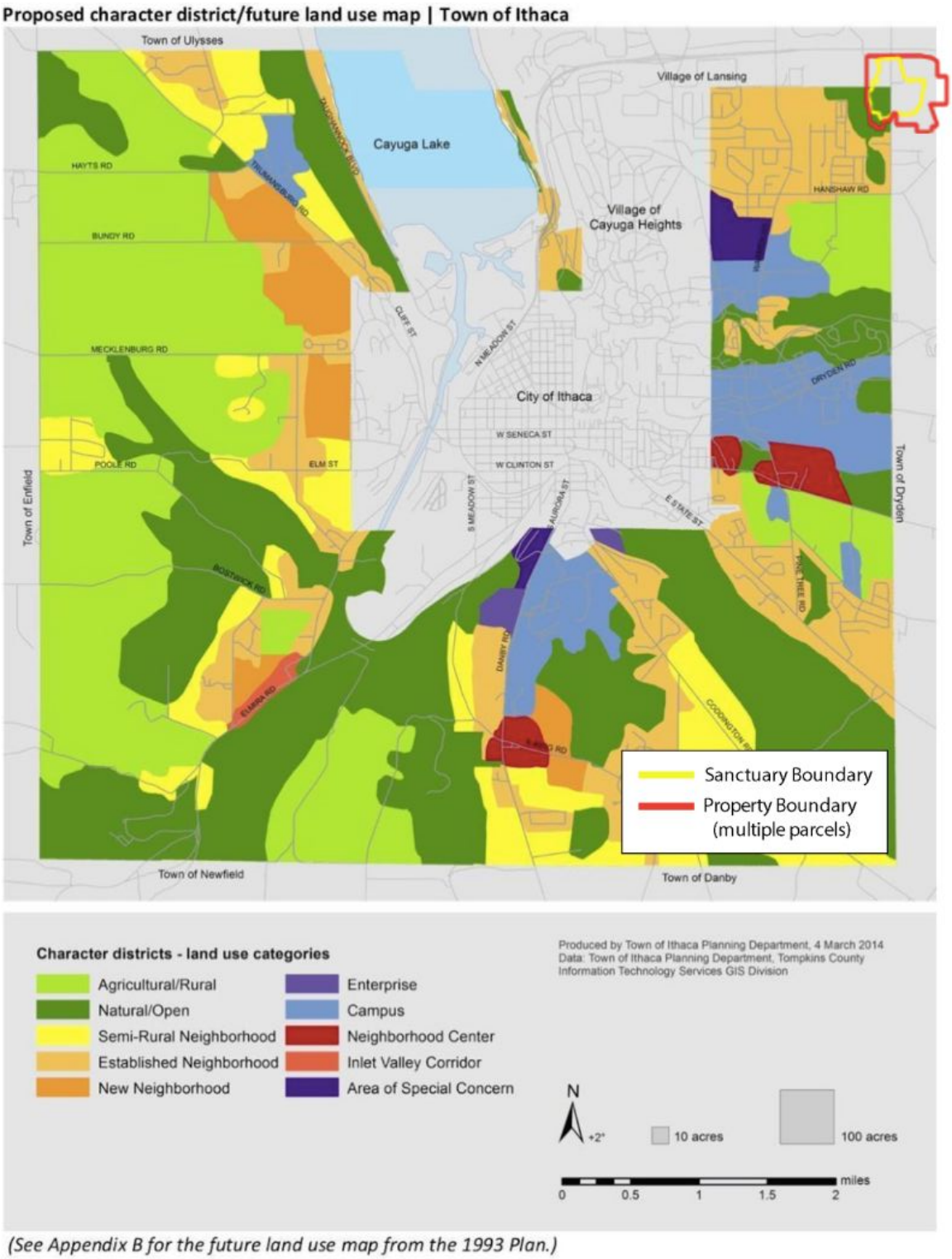
Figure 7. Official Village of Lansing Zoning map (2016)[3]

The Site is on the Research District and open water in the village of Lansing.

The Village of Lansing Comprehensive Plan 2015-2025 defines Research District as an area "where research and other specialized uses of a similar educational nature are appropriate."

1. Town of Ithaca 2014 Comprehensive Plan. (Mar. 10 2014). Town of Ithaca. Retrieved from http://www.town.ithaca.ny.us/comprehensive-plan
2. Town of Dryden Comprehensive Plan. (Dec. 8 2005). Town of Dryden
3. Village of Lansing Comprehensive Plan 2015-2025. (Dec. 7 2015). Village of Lansing

V. FUTURE LAND USE



(See Appendix B for the future land use map from the 1993 Plan.)

Figure 8. Future land use map for Town of Ithaca (2014)[1]

Table 1. Table for Character districts and proposed residential density[1]

Character districts and proposed residential density			
Character district	Density: average	Density: range	Open space
Natural / Open	≤1 unit/15 acres	Not specified	Not specified
Rural / Agricultural	≤1 unit/12 acres, higher if clustered	Not specified	Not specified
Semi-Rural Neighborhood	1.5 units/acre, higher if near utilities, transit, employment centers	Not specified	≥50% of development site
Established Neighborhood	2-4 units/acre	1-10 units/acre	≥10% of neighborhood or development site
New Neighborhood	5-8 units/acre	2-14 units/acre	10%-25% of neighborhood or development site, more on case-by case basis
Enterprise	n/a	n/a	Not specified
Campus	Based on approved campus plan	Based on approved campus plan	Not specified
Neighborhood Center	8-16 units/acre	6-30 units/acre	10%-20% of neighborhood or development site, more on case-by case basis
Inlet Valley Corridor	n/a	n/a	Not specified
Emerson Center	Based on redevelopment plan	Based on redevelopment plan	Not specified
Country Club	If site is redeveloped: 4-6 units/acre	If site is redeveloped: 2-12 units/acre	≥50% of development site
Density is gross for a site, and includes open and civic space. Density does not include accessory units or bonuses for affordable housing.			

Even though the property is on both the Natural / Open District and the Established Neighborhood District, the Site lies completely within the Natural / Open District. Therefore, according to Table 1 above, the proposed residential density for the Site is less than 1 housing unit per 15 acres.

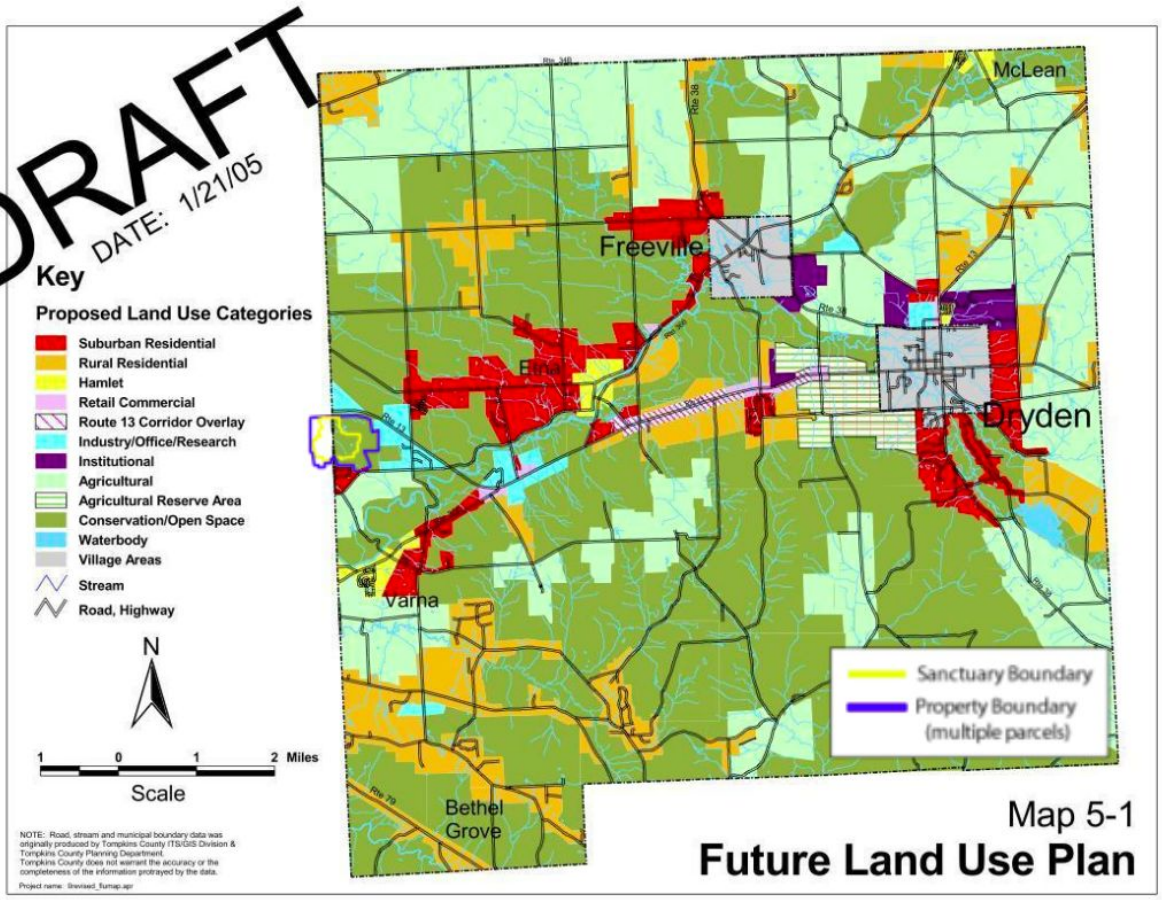


Figure 9. Future Land Use Plan for the Town of Dryden (2005)[3]

The site is in a Conservation / Open Space area, according to the Town of Dryden, New York Natural Resources Conservation Plan[6]. Sapsucker Woods Sanctuary (Eastern half) is one of the important preserves in the town. The Conservation Plan suggests that "wherever possible maintain intact hilltops, steep slopes, and tree canopy lines, particularly in viewshed areas."

Figure 10. Greenway from Arrowwood Drive to Sapsucker Woods (2018)[5,7]

Figure 10 shows both the existing and planned greenway on and near the Site. From the Town of Dryden, Greenway Plan[5], the definition of a greenway is "Green space comprises land that is partially or completely covered with grass. Trees. Shrubs, gardens, or other natural or planted vegetation." From the Village of Lansing Comprehensive Plan[4], the community is "promoting the development of publicly accessible parks, trails, and greenspaces." Therefore, it is clear that there is an emphasis on the development and maintenance of publicly accessible green open spaces from the local government.

Figure 11. Development Focus Areas in Tompkins County (2017)[2]

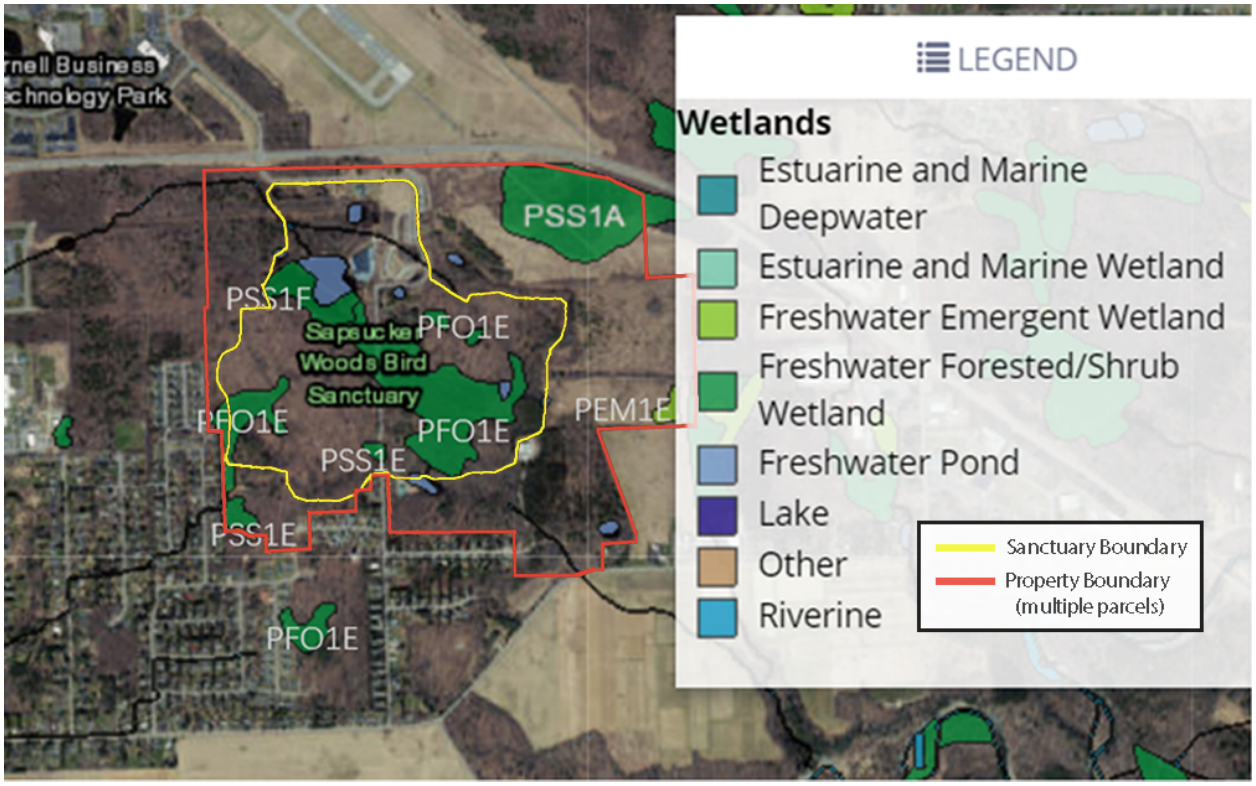
For legend in Figure 11 from Tompkins County Housing Strategy[2], (units measure of households)

- *The urban center contains at least 350 units annually (not including student beds)*
- *The established and emerging nodes contains 50-100 units annually*
- *The other locations, including suburban Lansing contains 100-150 units annually*

From the Tompkins County Housing Strategy as shown in Figure 11, the Site is located next to the urban center area. In this case, there may be a higher potential for more residential area in future plans with the expansion of the urban area.

1. Town of Ithaca 2014 Comprehensive Plan. (Mar. 10 2014). Town of Ithaca. Retrieved from http://www.town.ithaca.ny.us/comprehensive-plan
2. Tompkins County Comprehensive Plan. (Mar. 3, 2015). Tompkins County. Retrieve from http://tompkinscountyny.gov/files2/planning/ComprehensivePlan/FINAL-March%2012-low%20res.pdf
3. Town of Dryden Comprehensive Plan. (Dece. 8 2005). Town of Dryden
4. Village of Lansing Comprehensive Plan 2015-2025. (Dece. 7 2015). Village of Lansing
5. Village of Lansing Greenway Plan. (Aug 2 2018). Village of Lansing
6. Town of Dryden, New York Natural Resources Conservation Plan. (Nove. 2017). Town of Dryden Conservation Board. Retrieve from http://dryden.ny.us/wp-content/uploads/2018/03/Dryden-NRCP-Final-11-16-2017.pdf
7. Arrowwood Dr. to Supsucker wood Dr. (n.d) Google map. Retrieve from https://www.google.com/maps/search/greenway+Arrowwood+Drive+to+Sapsucker+Woods/@42.4771387,-76.4665255,15z/data=!3m1!4b1

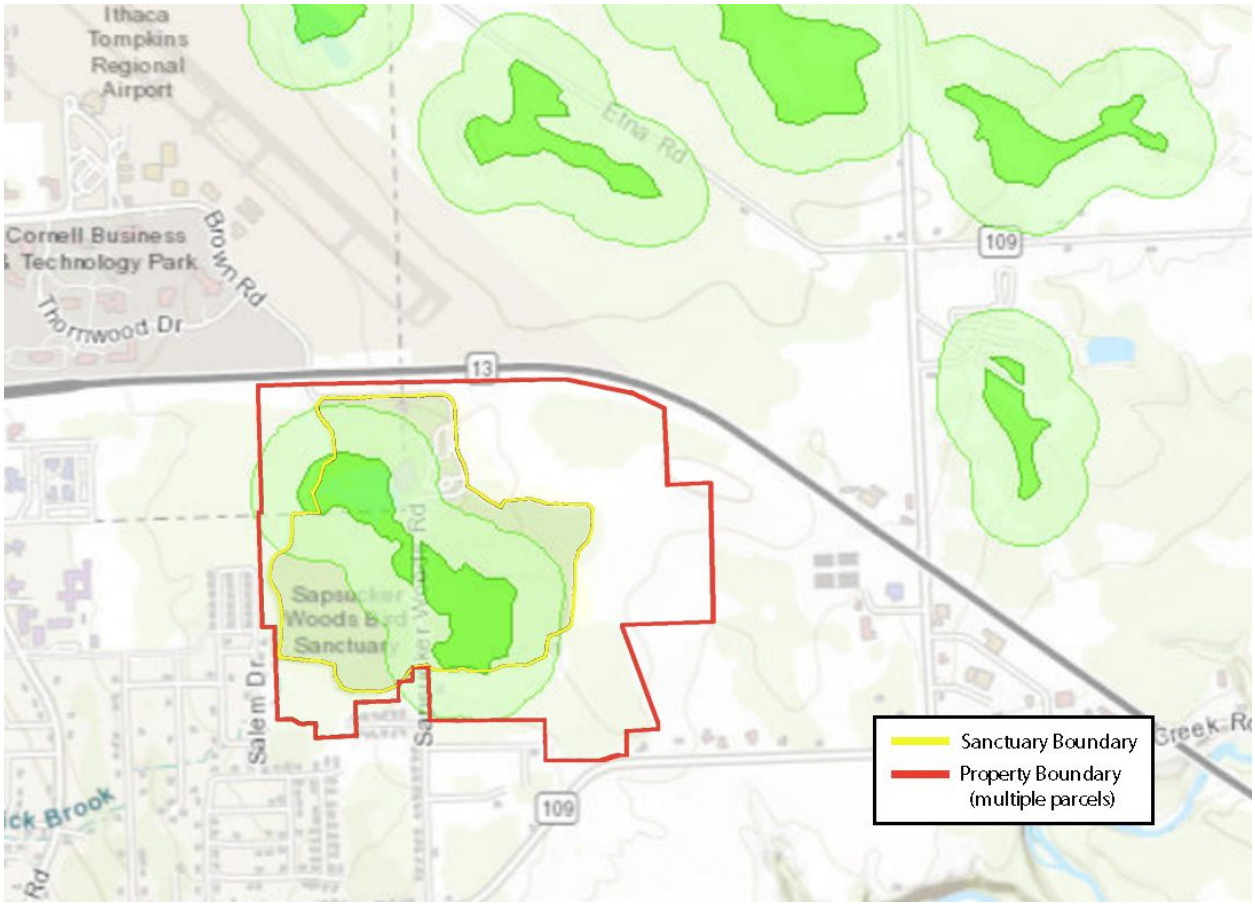
VI. WETLANDS



Scale 1" = 3,000'

Figure 12: National Wetlands Inventory Map[1]

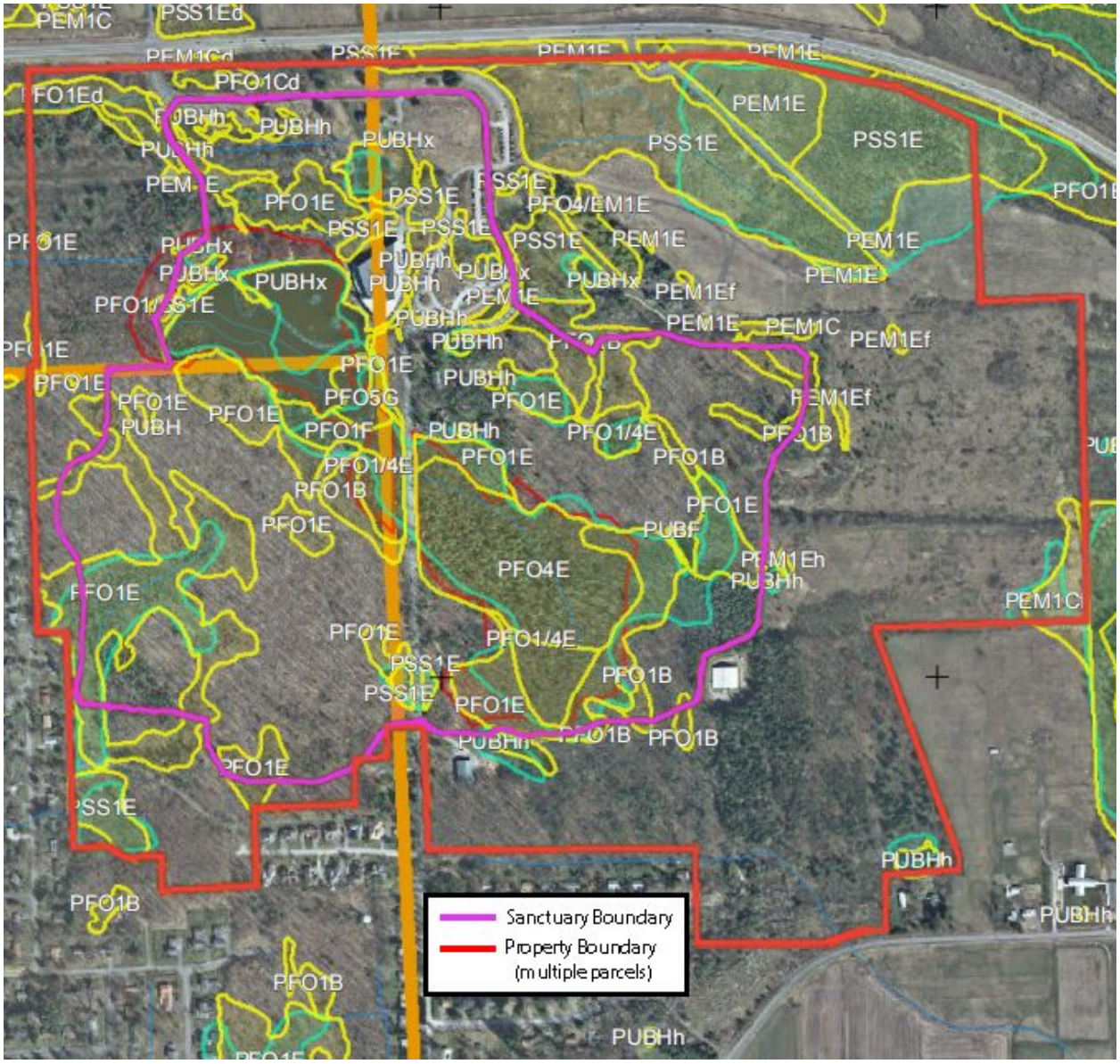
According to the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) map, the Site includes several different types of wetlands. The map indicates that all the wetlands in this site are Freshwater Forested/Shrub Wetland habitats and are separately classified as PFO1E, PSS1F and PSS1E based on Cowardin classification. This classification indicates that it is the Palustrine System. This map shows 33.95 acres of PFO1E, 5.99 acres of PSS1F, and 2.43 acres of PSS1E in the site.



Scale 1" = 3,000'

Figure 13: New York State Wetlands Map[2]

The New York State Department of Environmental Conservation (NYSDEC) wetlands database shows various wetlands in the Site. The green area to the west of the Site is a State Regulated Freshwater Wetland, and only shows the approximate location of the actual wetland boundary. The lighter green area surrounding the wetland is the "check zone", shows an area around the mapped wetland in which the actual wetland may occur[2]. "Check zones" set by drawing 500 foot zones around wetland polygons and 200 foot zones around linear wetlands and should not be confused with the regulated adjacent area (usually 100 feet, but sometimes more) surrounding a wetland. Due to the approximate nature of the mapped wetland boundaries, NYSDEC recommends that if you are planning a project within the check zone, you should check with NYSDEC to determine if a wetlands permit is required[3].



Scale 1" = 10,000"

Figure 14: Tompkins County Wetlands Map[4]

The Tompkins County Wetlands Map includes the wetland images from Tompkins County 2012 wetlands (thin yellow line), USFWS NWI wetlands (thin blue line) and NYSDEC Freshwater Wetlands (thin red line), so, it is the most specific database when considering the wetland distribution in the site. There are numerous wetlands within the site boundary. These wetlands are separately classified as PF01/SS1E, PFO1E, PFO4E, PFO1/4E, PFO1B, PFO1F, PSS1E, PUBF, PUBH, PUBHx, PUBHh, PEM1E, PEM1Eh, PEM1Ef, PEM1C.

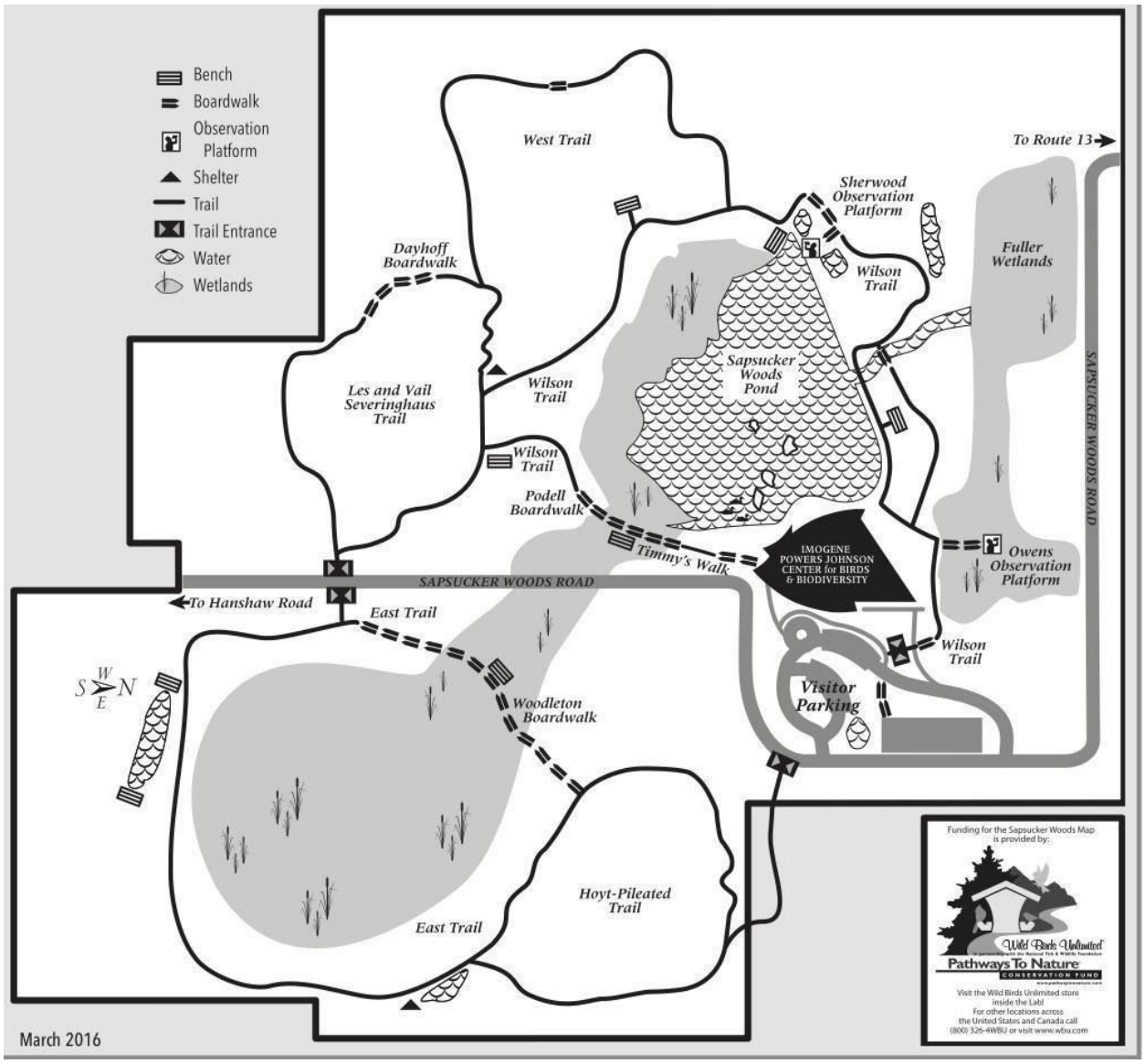
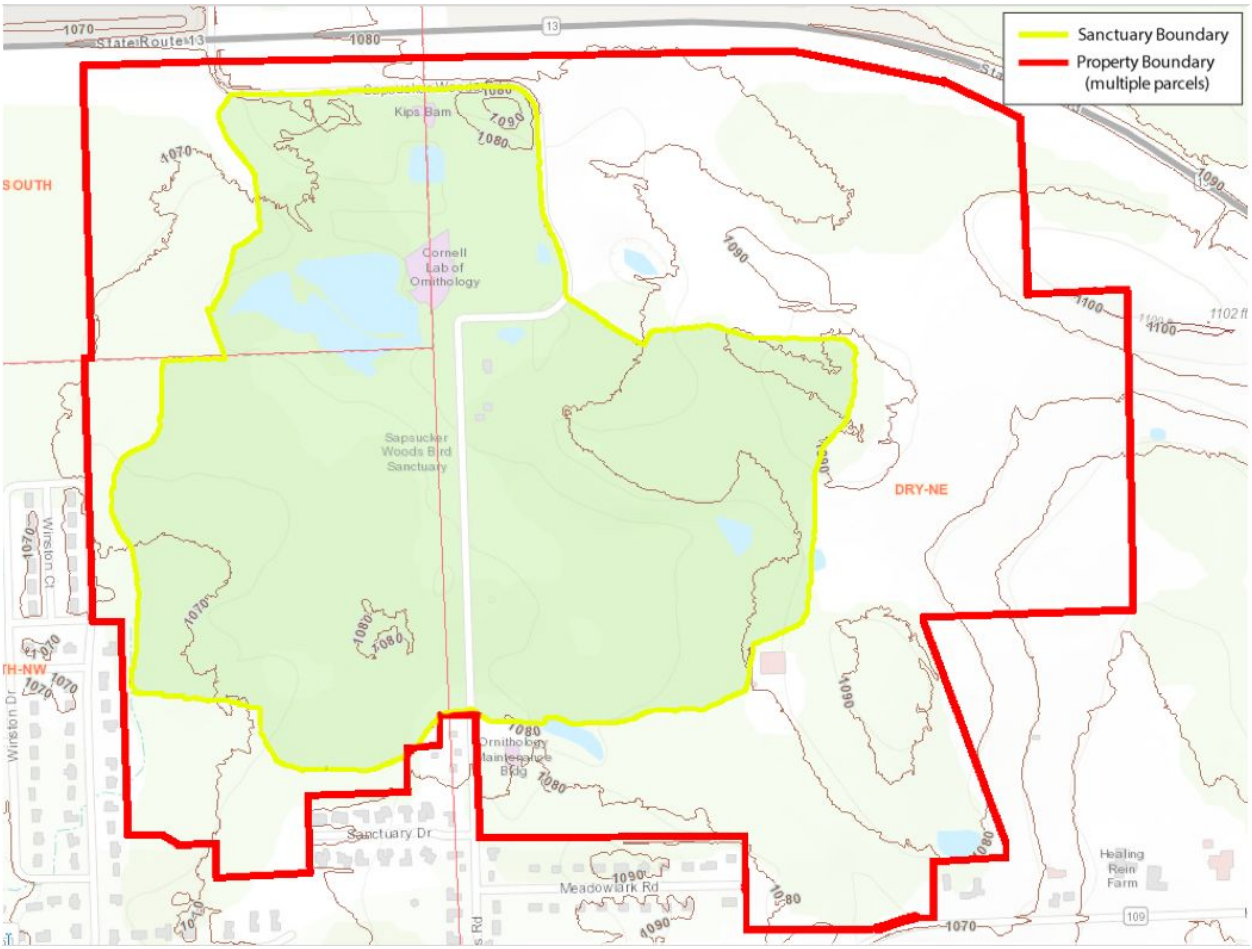


Figure 15. Sapsucker Woods Sanctuary Trail and Wetland Map[5]

This map uses the trails and roads in the area as the boundaries of the map, showing the main part (places we can visit) of the Site. Based on these boundaries, the sanctuary has a wetland which spreads from the southeast to the northwest as well as smaller wetlands located in the northern part of the Site. A pond connects the two wetlands. There are also six smaller ponds located throughout the site.

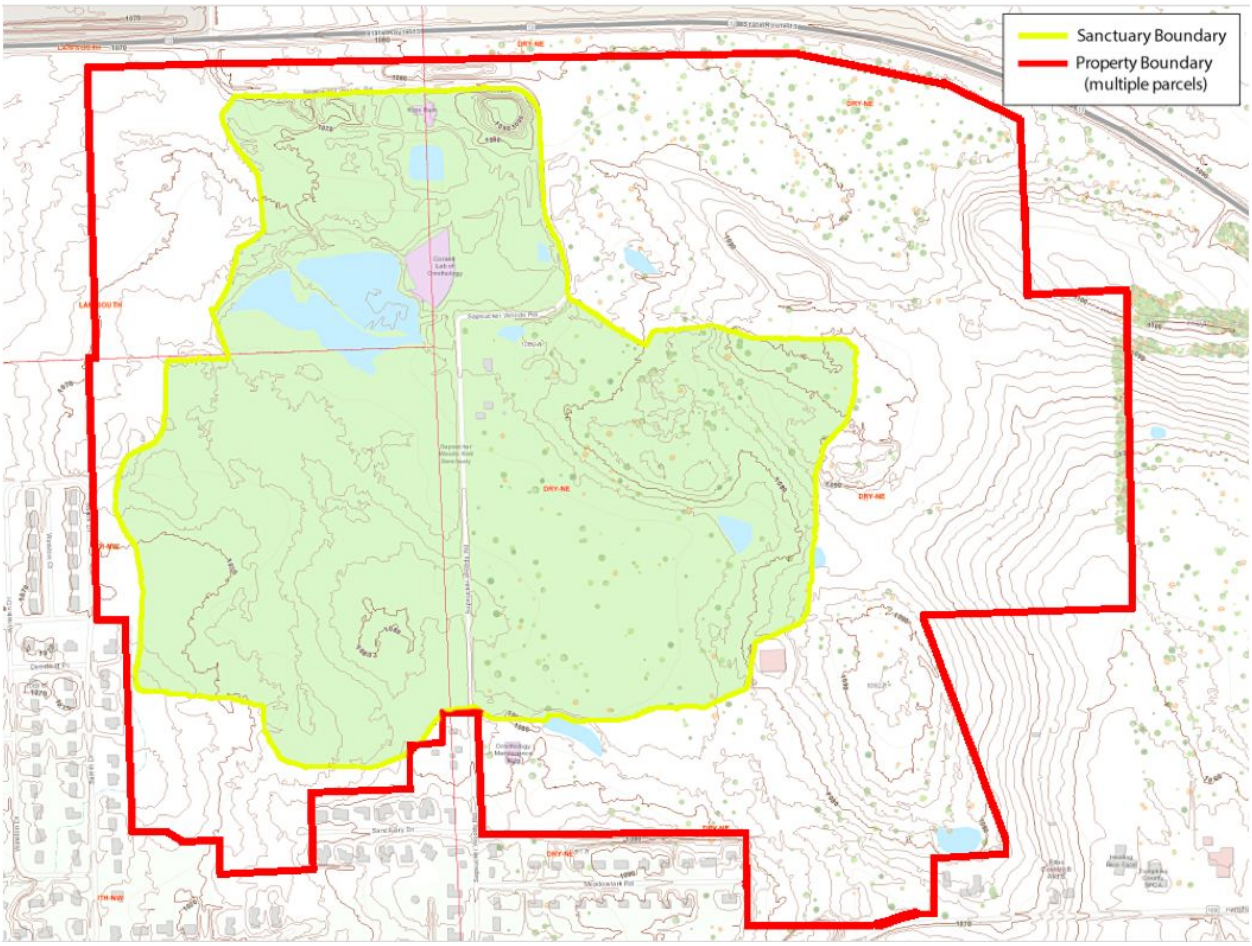
1. Wildlife Service, & National Standards and Support Team. (n.d.). Wetlands Mapper. Retrieved from https://www.fws.gov/wetlands/data/mapper.html
2. Environmental Resource Mapper. (n.d.). Retrieved from http://www.dec.ny.gov/gis/erm/
3. Wetlands DEC - Checkzones. (n.d.). Retrieved from https://geodata-cc-ny.opendata.arcgis.com/datasets/58520cc0e12c4cca91dce88b0ccb8a1d_0.
4. Hollingshead, N. (n.d.). *Tompkins County 2012 Wetland Map*. *Tompkins County 2012 Wetland Map* (pp. 3–3). Retrieved from https://www.dropbox.com/sh/hqtnn9wx2a5pboh/AACM6LQrQOiab7g9A70GQP-Na/Tompkins County Wetland Mapping 2015/Maps?dl=0&preview=Tompkins Wetlands 2012 Map Book with DEC and NWI Wetlands.pdf&subfolder_nav_tracking=1
5. Sapsucker Woods Sanctuary. (2010). The Cornell lab of Ornithology. Retrieved from http://www.birds.cornell.edu/bbimages/clo/pdf/visit/trailmap2010.pdf

VII. TOPOGRAPHY



Scale 1” = 870’

Figure 16: 10-ft contours from Tompkins County GIS maps[1]



Scale 1” = 870’

Figure 17: 2-ft contours from Tompkins County GIS maps[1]

Tompkins County GIS maps provide 10- and 2-feet contour maps of the Site, as shown above[1]. Topography varies through the site, with hills in the northeast and south and a band of relatively flat ground spanning from the northwest to southeast. The land generally slopes downward toward the southwest.

VIII. DRAINAGE AREA

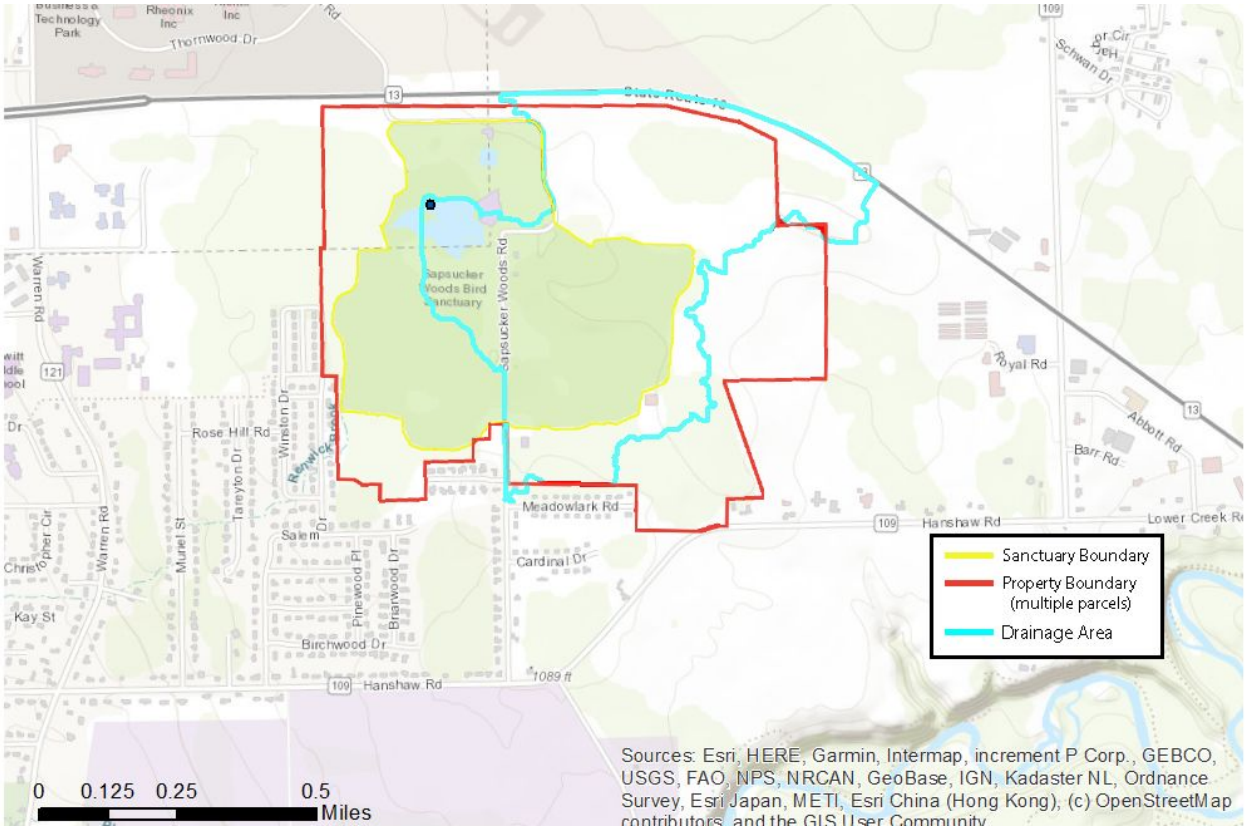
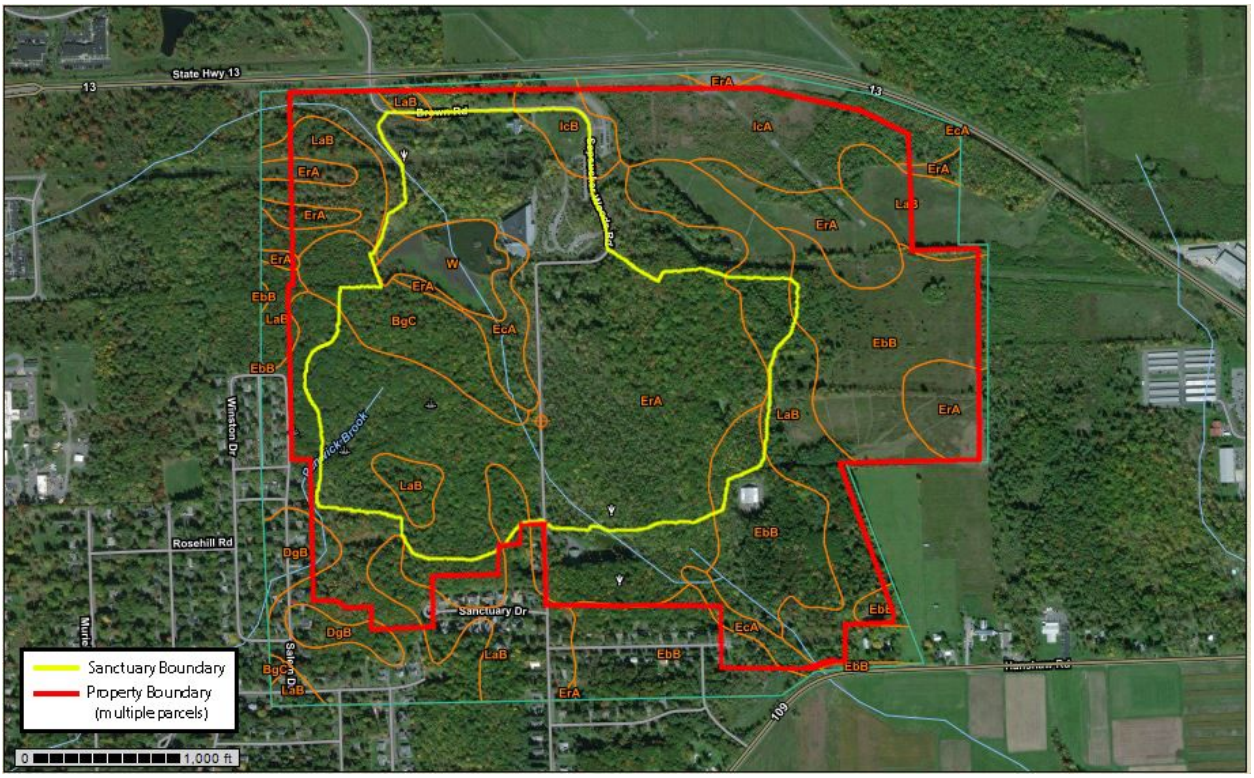


Figure 18: Drainage Area for Outlet Structure in Sapsucker Woods Pond

The constructed pond in front of the Cornell Lab of Ornithology flows into an outlet structure in the northern bank of the pond. Assuming 42.480028˚, -76.453139˚ as the location of the outlet, the drainage area for the outlet structure was delineated using ArcGIS, giving a total area of 203.1 acres. Measurements may need to be taken to assess whether the roads are true boundaries of the drainage area.

1. Tompkins County GIS. *Environmental Health*. Tompkins County, NY. Retrieved from https://geo2.tompkins-co.org/html/?viewer=ehmob

IX. SOILS



Scale 1" = 1200'

Figure 19: Soil Map of Sapsucker Woods[1]

According to the soil map from Web Soil Survey, the Site is composed of Bath and Valois soils (BgC), Darien gravelly silt loam (DgB), Erie channery silt loam (EbB), Chippewa and Alden soils (EcA), Erie-Chippewa channery silt loams (ErA), Ilion silty clay loam (IcA), Ilion silty clay loam (IcB) and Langford channery silt loam (LaB)[1]. Among the above soils, EcA, IcA and IcB are rated highly as hydric soils according to Web Soil Survey Hydric rating. ErA is rated 35 out of 100 for hydric soil rating. BgC, DgB, EbB and LaB are not rated as hydric soils.

Table 2: Soil Series Description[1]

Bath	*Parent materials:* loamy till derived mainly from gray and brown siltstone, sandstone, and shale. Capacity of the most limiting layer to transmit water (Ksat): very low to moderately low (0.00 to 0.14 in/hr). Depth to water table: about 24 to 36 inches.
Valois	*Parent materials*: loamy till derived mainly from sandstone, siltstone, and shale. Capacity of the most limiting layer to transmit water (Ksat): moderately low to moderately high (0.06 to 0.20 in/hr). Depth to water table: about 24 to 35 inches.
Darien	*Parent material:* loamy till derived predominantly from calcareous gray shale. Capacity of the most limiting layer to transmit water (Ksat): moderately low to moderately high (0.06 to 0.20 in/hr). Depth to water table: about 6 to 15 inches.
Erie	*Parent material*: till. Capacity of the most limiting layer to transmit water (Ksat): moderately low (0.01 to 0.14 in/hr). Depth to water table: about 7 to 14 inches.
Chippewa	*Parent material*: loamy till dominated by siltstone, sandstone, and shale fragments. Capacity of the most limiting layer to transmit water (Ksat): very low to moderately low (0.00 to 0.14 in/hr). Depth to water table: about 0 to 6 inches.
Ilion	*Parent material:* loamy till derived from calcareous dark shale. Capacity of the most limiting layer to transmit water (Ksat): moderately low to moderately high (0.06 to 0.20 in/hr). Depth to water table: about 0 inches.
Langford	*Parent material*: till. Capacity of the most limiting layer to transmit water (Ksat): moderately low (0.01 to 0.14 in/hr). Depth to water table: about 14 to 24 inches.

For other soil characteristics, please refer to the table below.

Table 3: Summary of Soil characteristics[1]

	BgC	**DgB**	**EbB**	**EcA**	**ErA**	**IcA**	**IcB**	**LaB**
Percent of area of interest (AOI)	3.8%	2.0%	15.9%	2.0%	47.5%	6.8%	1.6%	18.6%
Acres in AOI	16.7	8.8	70.9	8.8	47.5	30.3	6.9	82.8
Slopes	5-15 %	2-8%	3-8%	0-8%	0-3%	0-2%	2-6%	2-8%
Hydrologic soil group	C	C/D	D	D	D	C/D	C/D	D
Hydric soil rating (out of 100)	0	10	5	90	35	85	85	0
Hydric soil type	non-hydric	hydric-inclusion	non-hydric	hydric	hydric-inclusion	hydric	hydric	Non-hydric
Drained	Well	Somewhat Poorly	Some what poorly	Poorly	Poorly	Poorly	Poorly	Moderately well
Frequency of flooding	None	None	None	None	None	None	None	None
Frequency of ponding	None	None	None	None	None	Frequent	Frequent	None
Available water storage in profile	Low	Moderate	Very low	Low	Low	Moderate	Moderate	Low

For more details on the soil properties, please check the appendix.

Scale 1" = 1200'

Figure 20: Hydric Soil Rating for Sapsucker Woods[1]

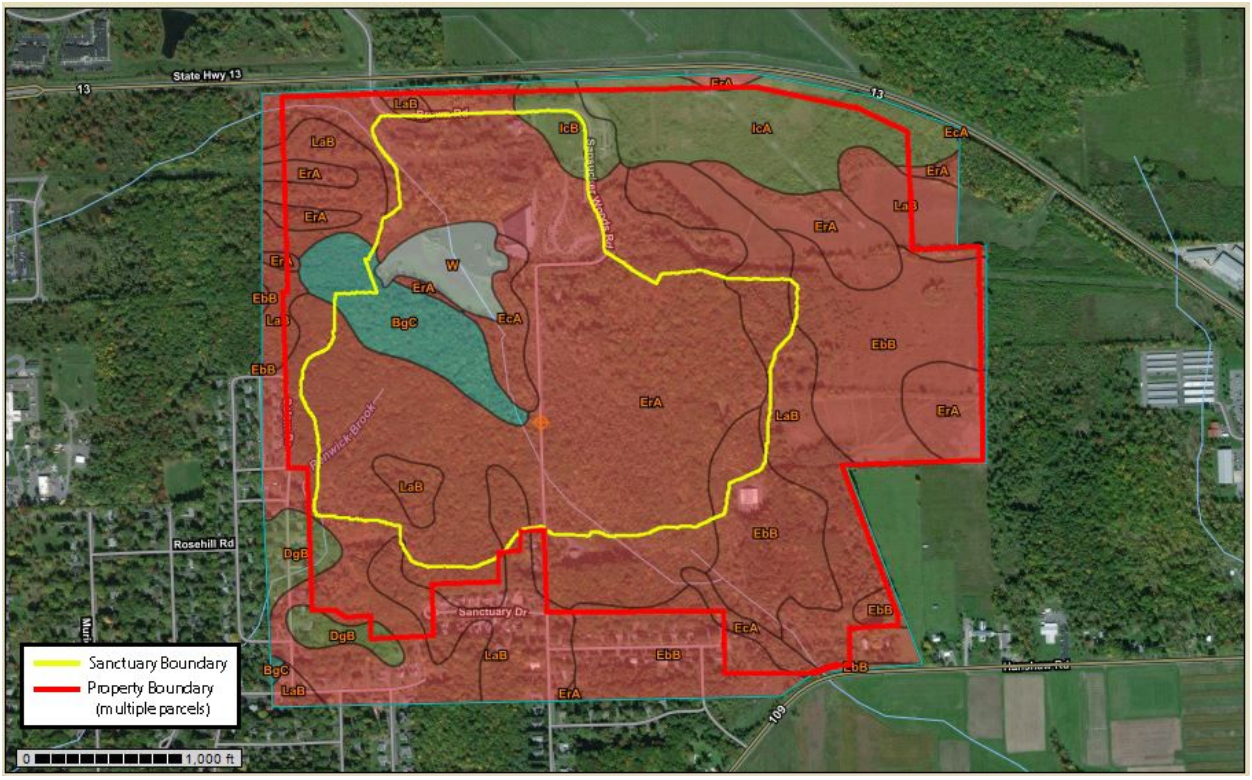
Table 4: Hydric Rating by Map Units[1]

Tables — Hydric Rating by Map Unit — Summary By Map Unit

Summary by Map Unit — Tompkins County, New York (NY109)

Summary by Map Unit — Tompkins County, New York (NY109)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BgC	Bath and Valois soils, 5 to 15 percent slopes	0	16.7	3.8%
DgB	Darien gravelly silt loam, 2 to 8 percent slopes	10	8.8	2.0%
EbB	Erie channery silt loam, 3 to 8 percent slopes	5	70.9	15.9%
EcA	Chippewa and Alden soils, 0 to 8 percent slopes	90	8.8	2.0%
ErA	Erie-Chippewa channery silt loams, 0 to 3 percent slopes	35	210.8	47.5%
IcA	Ilion silty clay loam, 0 to 2 percent slopes	85	30.3	6.8%
IcB	Ilion silty clay loam, 2 to 6 percent slopes	85	6.9	1.6%
LaB	Langford channery silt loam, 2 to 8 percent slopes	0	82.8	18.6%
W	Water	0	8.3	1.9%
Totals for Area of Interest			**444.3**	**100.0%**



Scale 1" = 1200'

Figure 21: Hydrologic soil group map[1]

Table 5: Hydrologic Soil Group[1]

Tables — Hydrologic Soil Group — Summary By Map Unit

Summary by Map Unit — Tompkins County, New York (NY109)

Summary by Map Unit — Tompkins County, New York (NY109)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BgC	Bath and Valois soils, 5 to 15 percent slopes	C	16.7	3.8%
DgB	Darien gravelly silt loam, 2 to 8 percent slopes	C/D	8.8	2.0%
EbB	Erie channery silt loam, 3 to 8 percent slopes	D	70.9	15.9%
EcA	Chippewa and Alden soils, 0 to 8 percent slopes	D	8.8	2.0%
ErA	Erie-Chippewa channery silt loams, 0 to 3 percent slopes	D	210.8	47.5%
IcA	Ilion silty clay loam, 0 to 2 percent slopes	C/D	30.3	6.8%
IcB	Ilion silty clay loam, 2 to 6 percent slopes	C/D	6.9	1.6%
LaB	Langford channery silt loam, 2 to 8 percent slopes	D	82.8	18.6%
W	Water		8.3	1.9%
Totals for Area of Interest			**444.3**	**100.0%**

1. Web Soil Survey. (n.d.). *Soil map for Sapsucker woods, Ithaca, NY.* Retrieved on Sep. 27, 2019 from https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

X. GEOLOGY

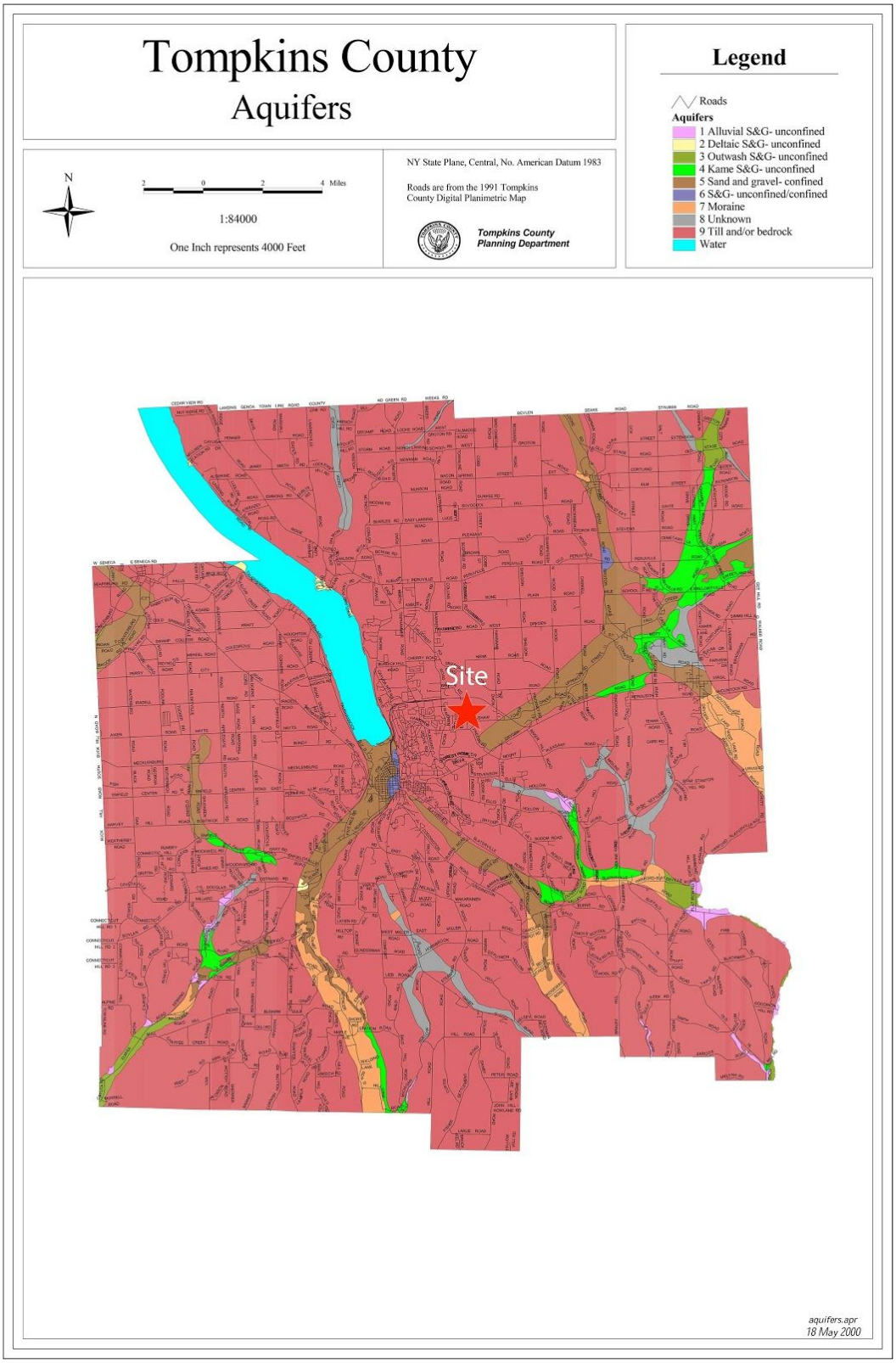


Figure 22: Surficial Aquifers of Tompkins County[1]

Maps from the Tompkins County Planning Department indicate that the Site resides on till and bedrock aquifers[1]. Till, an unsorted material deposited by glacial ice, contains grains of varying sizes that together have relatively low porosity. Bedrock aquifers are generally more voluminous than surficial aquifers, allowing them to contain more water[2]. Like till aquifers, however, they have low porosity and permeability to water. From this data, we can infer that the geology beneath the Site is not conducive to high groundwater flow.

1. Tompkins County Planning Department. *Tompkins County Aquifers* [map]. 1:84000. Tompkins County, NY: May 2000.
2. Earle, Steven. "14.1 Groundwater and Aquifers." *Physical Geology*, Pressbooks.com, 1 Sept. 2015, opentextbc.ca/geology/chapter/14-1-groundwater-and-aquifers/.

XI. WATERSHED

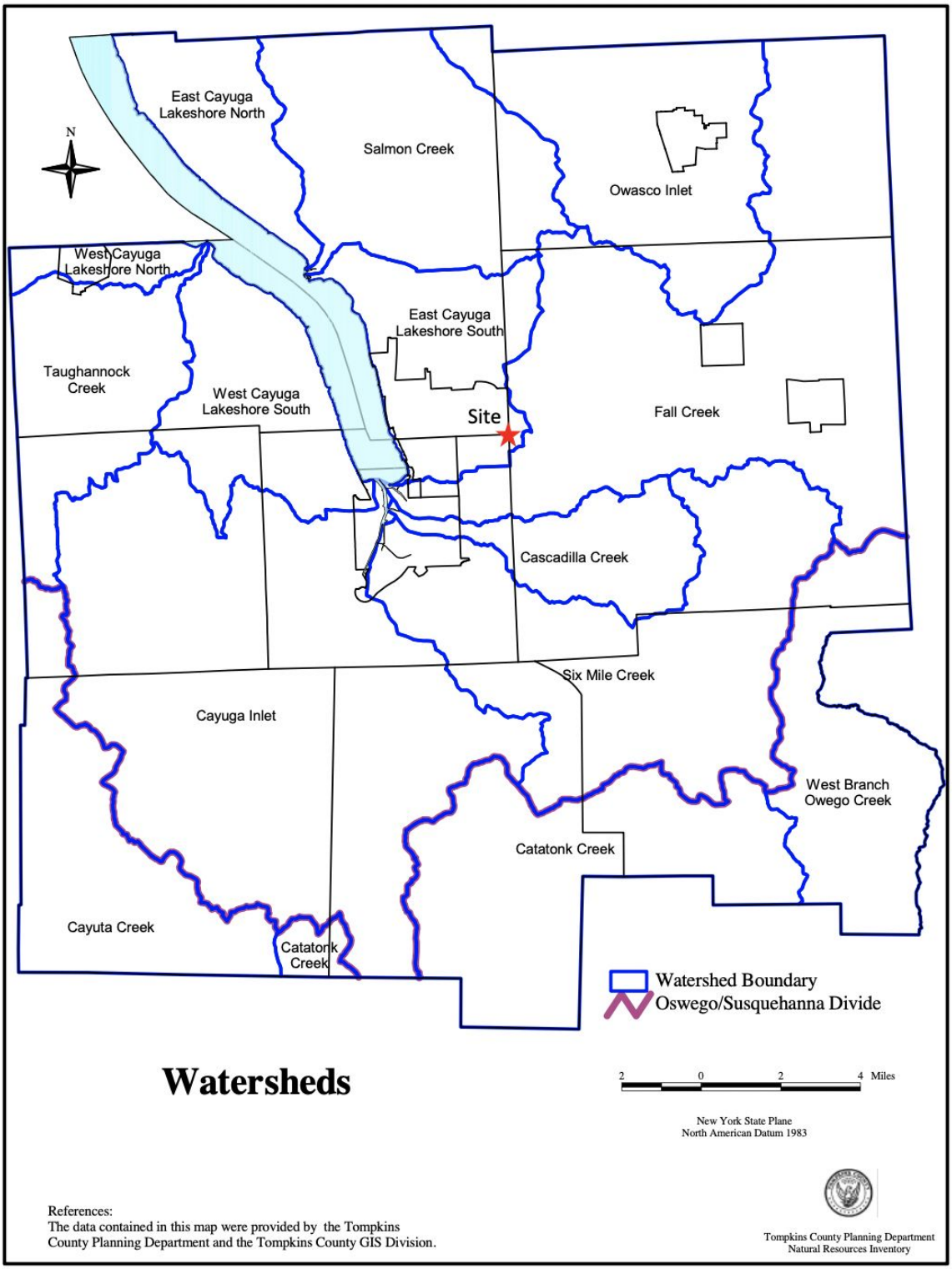


Figure 23: Watersheds of Tompkins County[1]

The Site is within the East Cayuga Lakeshore South Watershed, located in Tompkins County[1]. The mean annual precipitation in the watershed is 37.3 inches[2]. Precipitation from the watershed ultimately drains into Cayuga Lake.

1. Tompkins County Planning Department. *Watersheds* [map]. 1:84000. Tompkins County, NY: May 2000.
2. The Ithaca Climate Page. Northeast Regional Climate Center. (2019, September 24). Retrieved from http://www.nrcc.cornell.edu/wxstation/ithaca/normal.html

XII. FLOOD MAPS

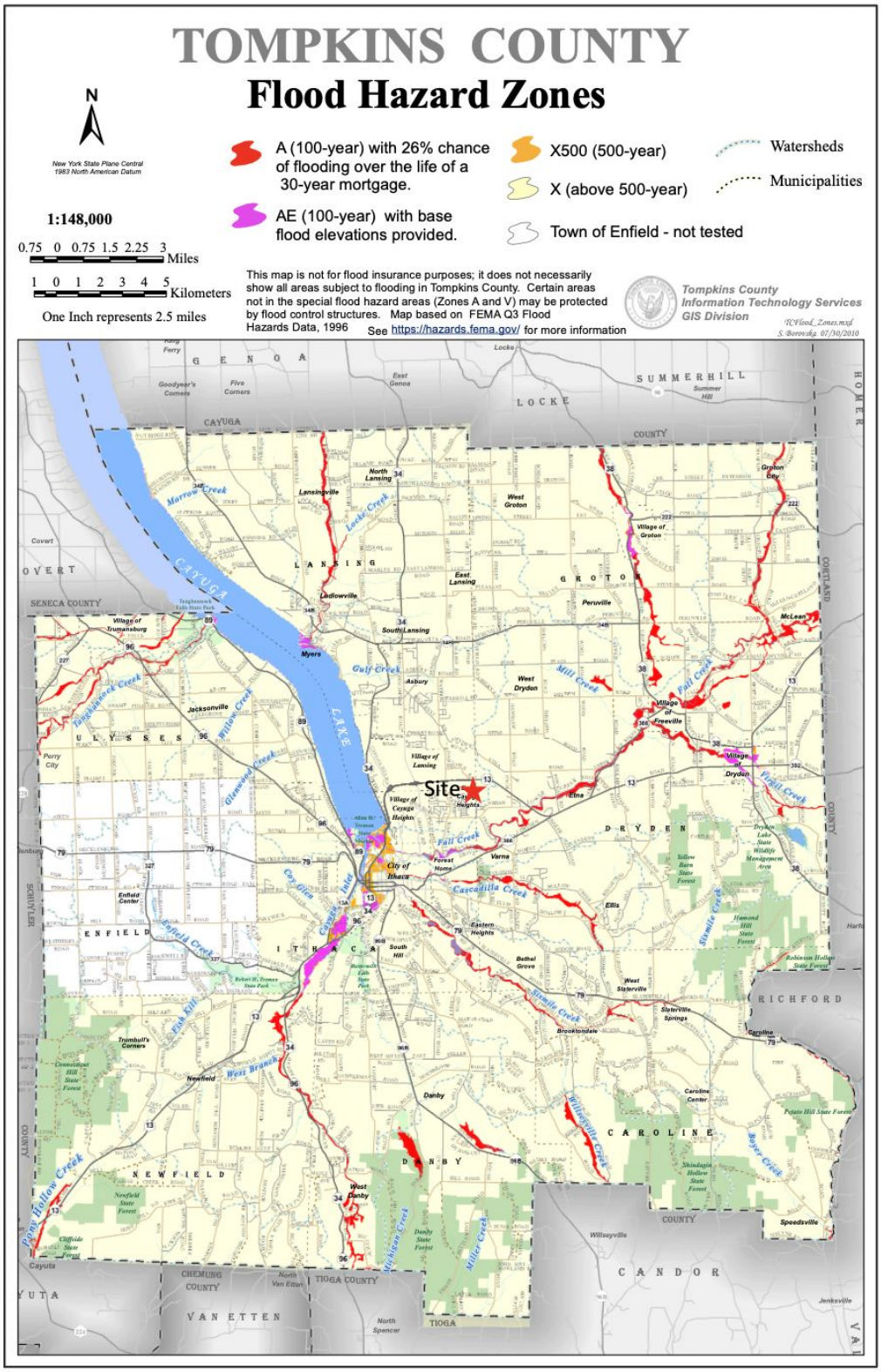


Figure 24: Flood Zones of Tompkins County[1]

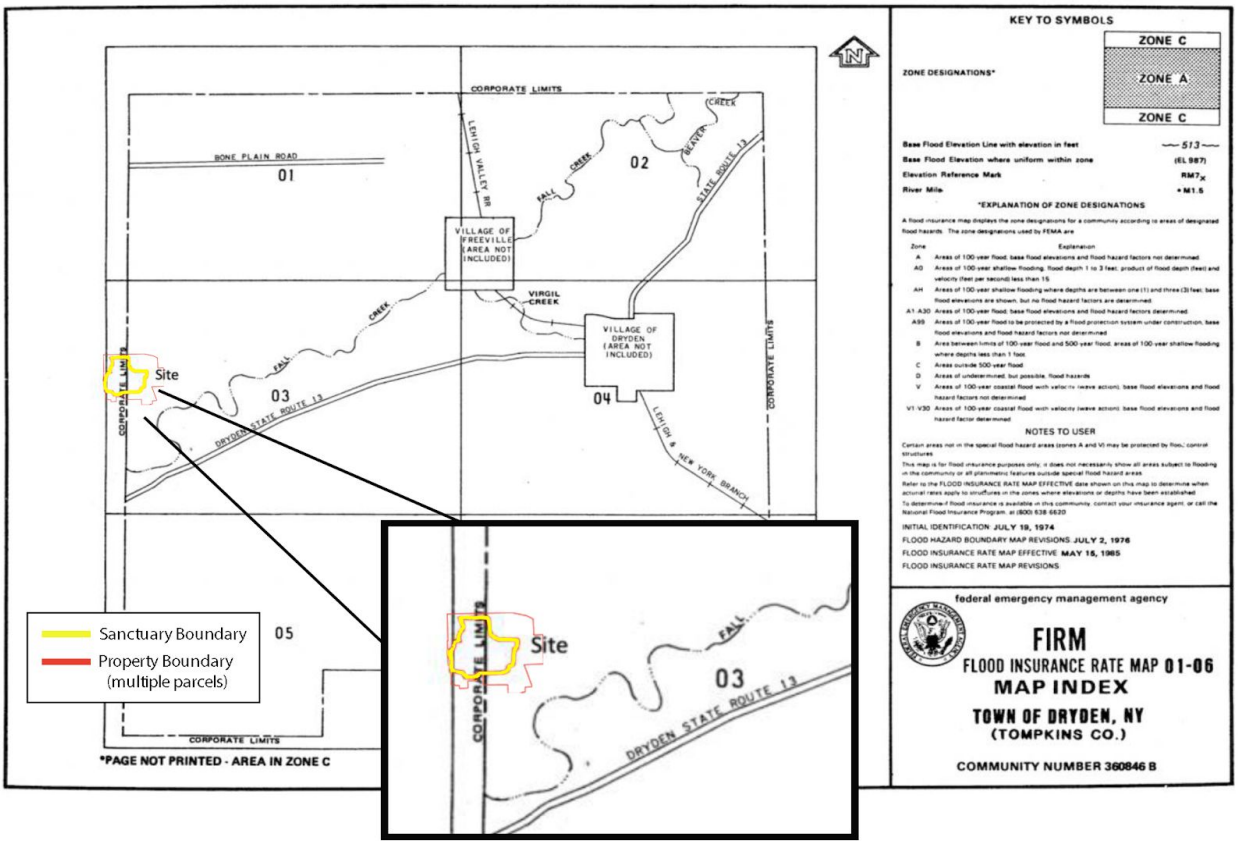


Figure 25: FEMA FIRM[2]

According to the Tompkins County Flood Hazard Zones map, the Site is located in an "above 500-year" flood zone[1]. The country flood map is based on Q3 Flood Data derived from the Flood Insurance Rate Maps (FIRMS) published by the Federal Emergency Management Agency (FEMA). Based on this data, the Site is in an area of minimal flood hazard. A digital FIRM from the FEMA Flood Map Service Center is available for only the east side of the Site. The digital FIRM shows the site zoned as "Zone C", an area above the 500-year flood but with local ponding and drainage problems[2].

1. Tompkins County Flood Hazard Zones. Tompkins County Information Technology Services GIS Division. Retrieved from http://tompkinscountyny.gov/files2/gis/maps/pdfs/TCFlood_Zones.pdf
2. FEMA Flood Map Service Center. (1985, May 15). FIRM Panel 360846B. Federal Emergency Management Agency. Retrieved from https://msc.fema.gov/portal/home

XIII. ECOLOGICAL RESOURCES

BIRDS

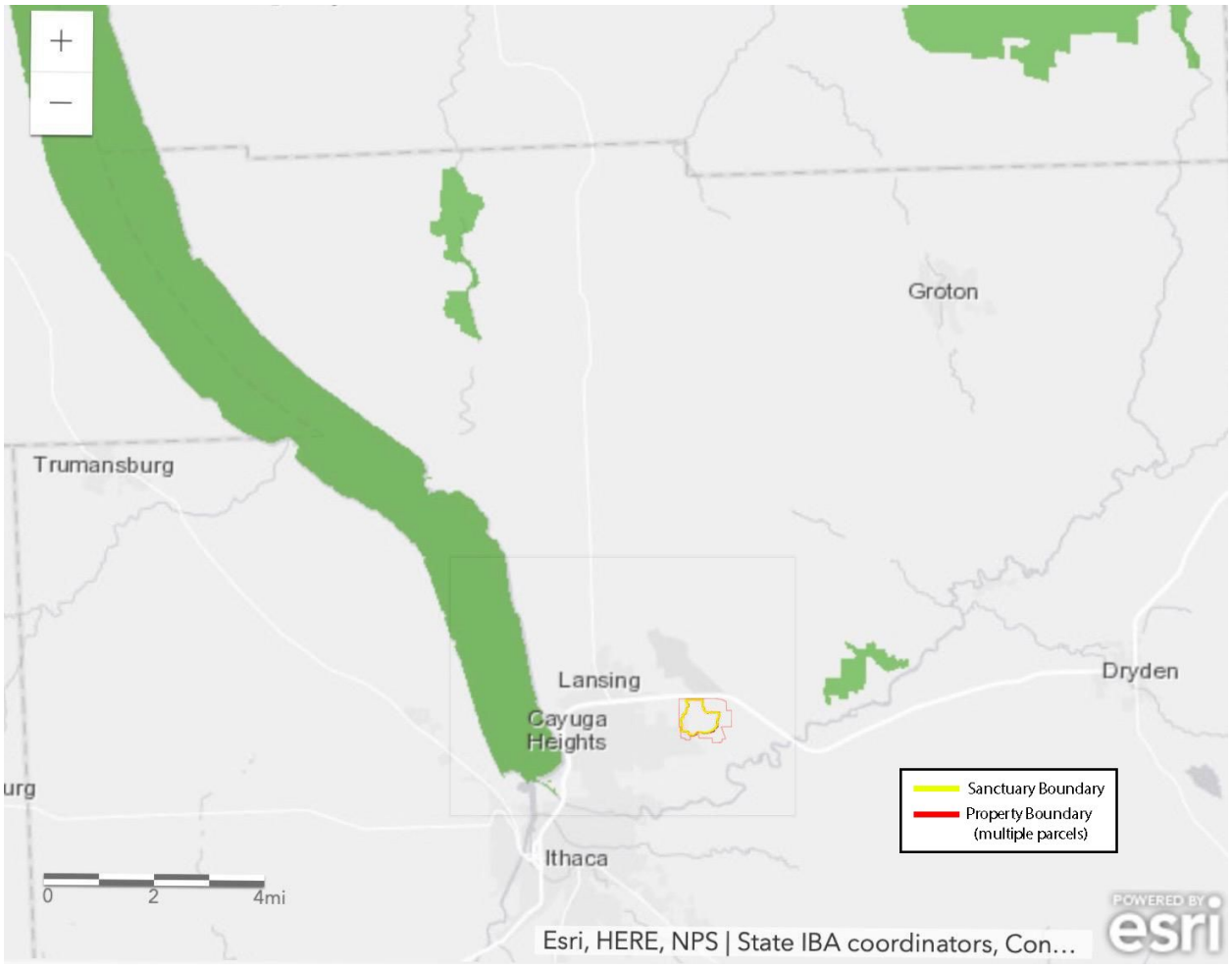


Figure 26: Important Bird Areas[1]

The site is located near an Important Bird Area (IBA). By definition of the National Audubon Society, an IBA satisfies one of the following criterias:

- A site which contains a concentration of birds in significant numbers when breeding, wintering, or migrating.
- A site which supports a population of species that is endangered, threatened, or of special concern.
- A site which contains species characteristic of a rare, threatened, or unique habitat.
- A site where long-term avian research or monitoring occurs.[1]

The IBAs closest to the site are Cayuga Lake 2.7 miles to the west and Caswell Road Grassland Complex 3.9 miles to the east. Although the site does not fall within the boundaries of either IBA[1], it is important to be considerate of any at-risk migratory and breeding birds. For example, one use of the area is for research, including but not limited to the Sapsucker Woods Acoustic Monitoring Project (SWAMP)[2].

The migratory birds of concern are listed below[3].

Table 6: Migratory Birds in Sapsucker Woods

Common Name	Scientific Name	Breeding Season
American Golden-plover	Pluvialis dominica	Elsewhere
Bald Eagle	Haliaeetus leucocephalus	December 1 - August 31
Black-billed Cuckoo	Coccyzus erythropthalmus	May 15 - October 10
Bobolink	Dolichonyx oryzivorus	May 20 - July 31
Canada Warbler	Cardellina canadensis	May 20 - August 10
Cerulean Warbler	Cardellina canadensis	April 20 - July 20
Dunlin	Calidris alpina arcticola	Elsewhere
Eastern Whip-poor-will	Antrostomus vociferus	May 1 - August 20
Golden Eagle	Aquila chrysaetos	January 1 - August 31
Golden-winged Warbler	Vermivora chrysoptera	May 1 - July 20
Lesser Yellowlegs	Tringa flavipes	Elsewhere
Long-eared Owl	Asio otus	May 1 - July 15
Prairie Warbler	Dendroica discolor	May 1 - July 31
Red-headed Woodpecker	Melanerpes erythrocephalus	May 10 - September 10
Ruddy Turnstone	Arenaria interpres morinella	May 1 - July 31
Semipalmated Sandpiper	Calidris pusilla	Elsewhere

Common Name	Scientific Name	Breeding Season
Short-billed Dowitcher	Limnodromus griseus	Elsewhere
Snowy Owl	Bubo scandiacus	Elsewhere
Wood Thrush	Hylocichla mustelina	May 10 -August 31

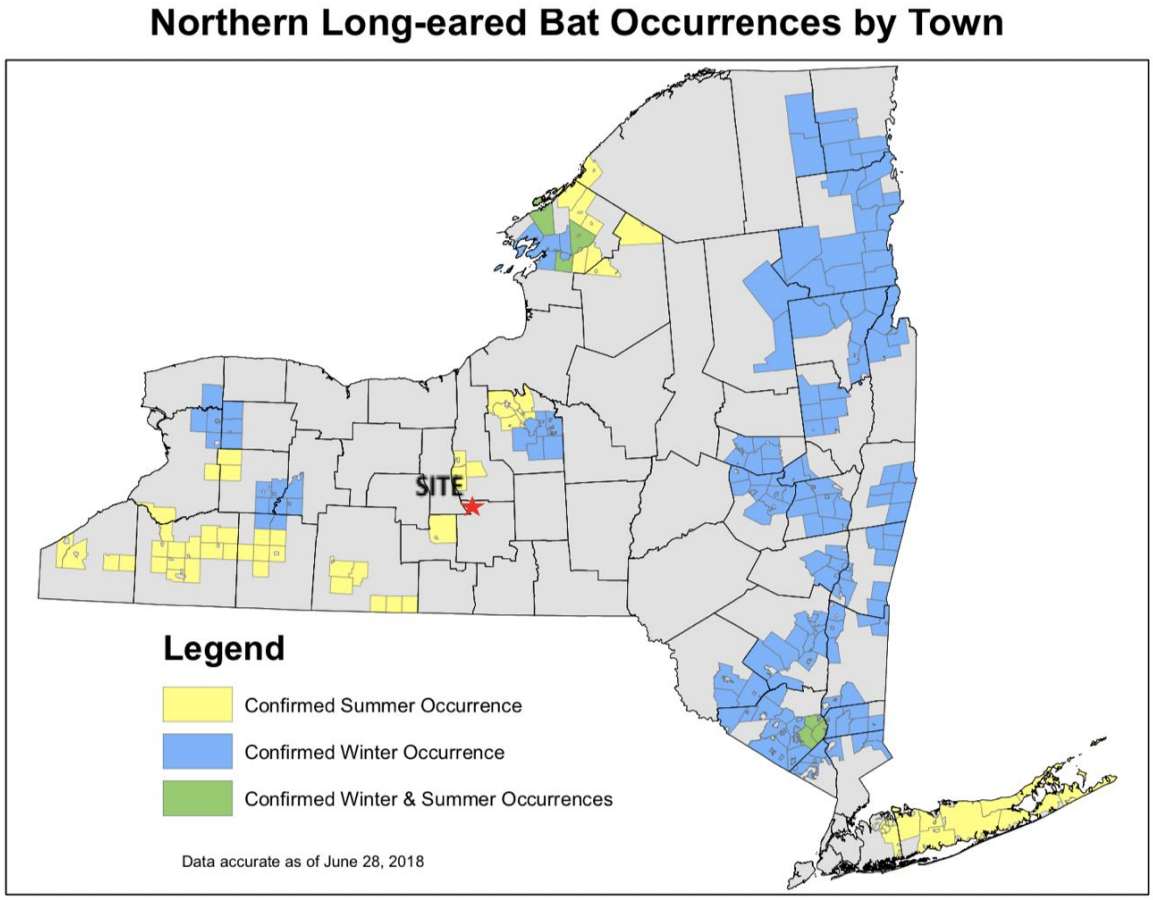


Figure 27: Northern long-eared bat occurrences by town in New York[4]

The Northern Long-eared Bat is not found in the site[4]. The New York State Department of Environmental Conservation does not define any other species as concerned or endangered[5].

1. Tompkins County natural resources inventory. (2019, February 9). Retrieved from https://www.worldcat.org/title/tompkins-county-natural-resources-inventory/oclc/58839462
2. Sapsucker Woods Acoustic Monitoring Project (SWAMP). (n.d.). Retrieved from https://ebird.org/science/swamp.
3. IPaC: Information for Planning and Consultation. (n.d.). Retrieved from https://ecos.fws.gov/ipac/location/WW77S7RVP5DQ7FNLFC452P3IZI/resourcesmigratory-birds
4. Northern long-eared bat occurrences by town - dec.ny.gov. (n.d.). Retrieved from https://www.dec.ny.gov/docs/wildlife_pdf/nlebtowns.pdf
5. Endangered Species. (n.d.). Retrieved from https://www.dec.ny.gov/animals/7181.html

XIV. UNIQUE NATURAL AREAS

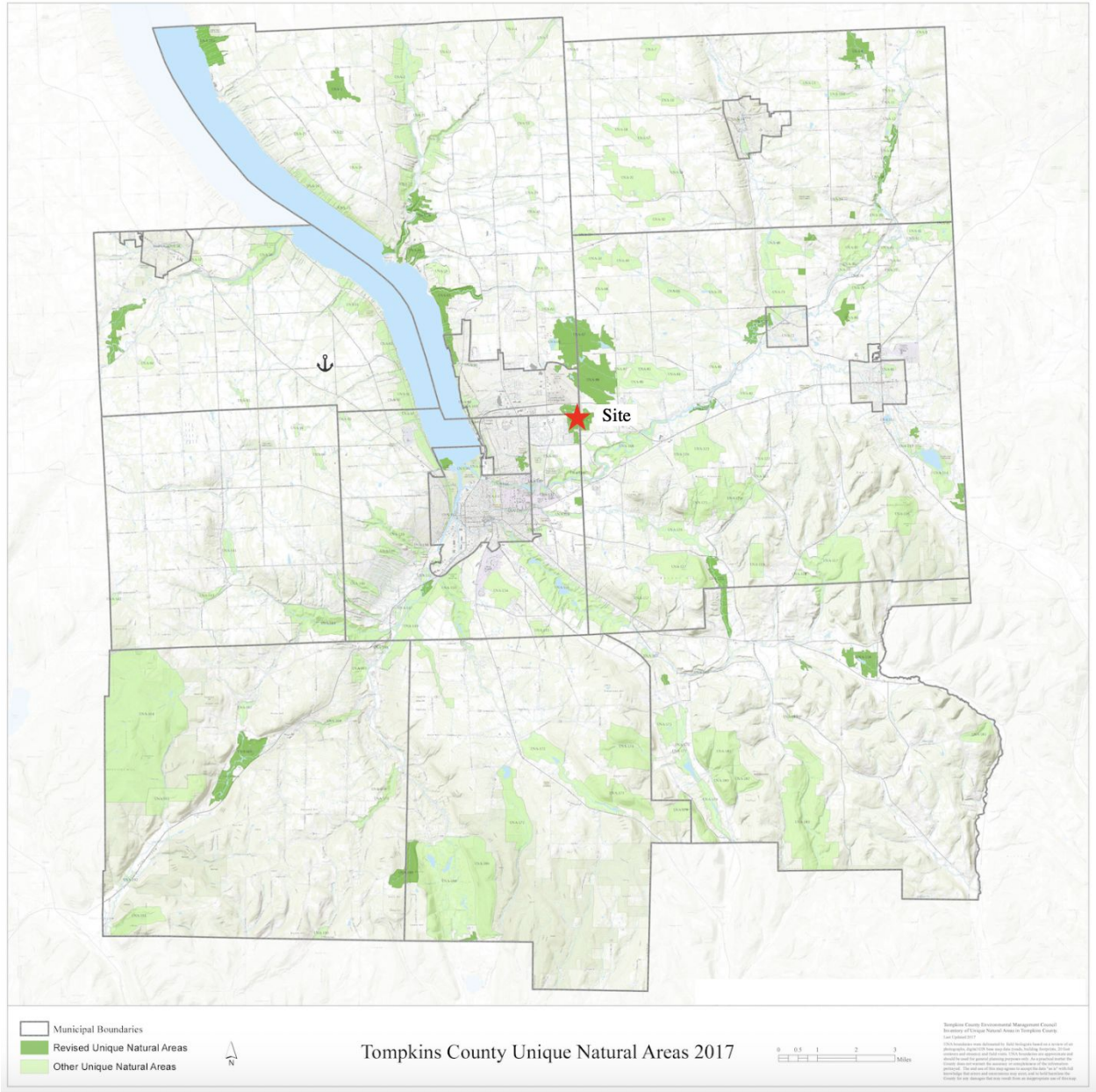


Figure 28: Tompkins County Unique Natural Areas[1]

The Site is located within a Unique Natural Area (UNA) according to the Tompkins County UNA inventory[1]. Characteristics of a UNA include one or more of the following:

- Important natural communities (state-designated wetlands, old forests, diverse plant and animal populations)
- Quality of example (best representatives of natural communities or resources in the county)
- Rare or scarce plants or animals (identified at the global, state, or local level)

- Geological importance (unique formation or paleontological site)
- Cultural significance (outstanding scenic beauty, recreational values, historic or archeological significance).

The Site is classified as UNA-106, primarily for quality of the ecological communities, presence of rare and scarce plants and animals, and the diversity of plant and animal life[2].

1. Tompkins County Unique Natural Areas 2017. Tompkins County Environmental Management Council, Inventory of Unique Natural Areas in Tompkins County. (2017). Retrieved from http://tompkinscountyny.gov/files2/emc/educationalmaterial/TCUNA2017.pdf
2. Tompkins County Environmental Management Council. (2007, July 11). Resolution 03 - 2007: Recommending the Protection of Sapsucker Woods UNA-106. Retrieved from http://tompkinscountyny.gov/emc/documents/resolutions.

XV. NEW YORK PROTECTED AREAS

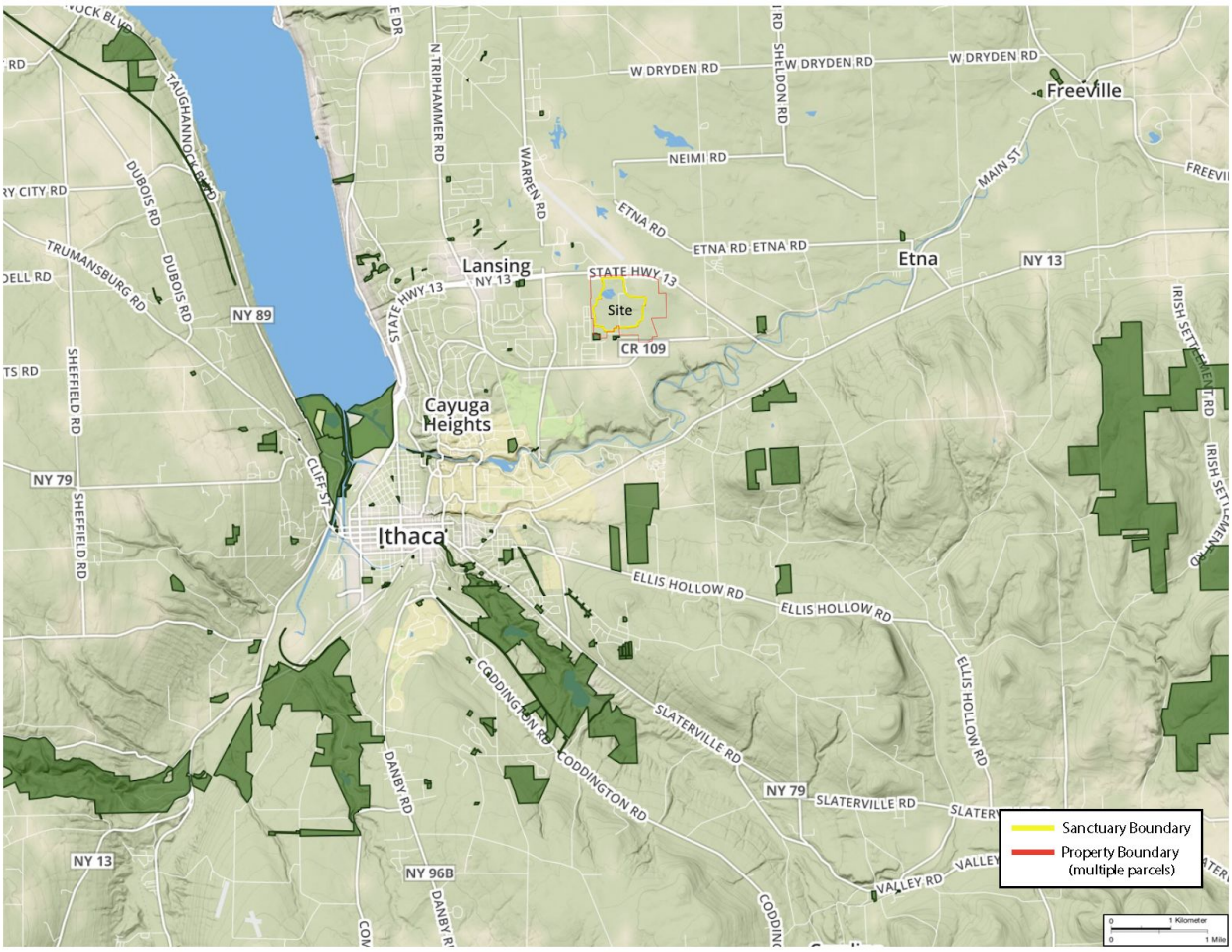


Figure 29: New York Protected Area Database

The Site is not located within a New York Protected Area[1]. The New York Protected Areas Database (NYPAD) is a spatial database of lands protected, designated, or functioning as open space, natural areas, conservation lands, or recreational areas. There are two areas directly south of the Site that are registered as protected areas for water resources and recreation use.

1. New York Protected Areas Database (NYPAD). New York Natural Heritage Program. Retrieved from http://nypad.org/.

XVI. HISTORIC RESOURCES

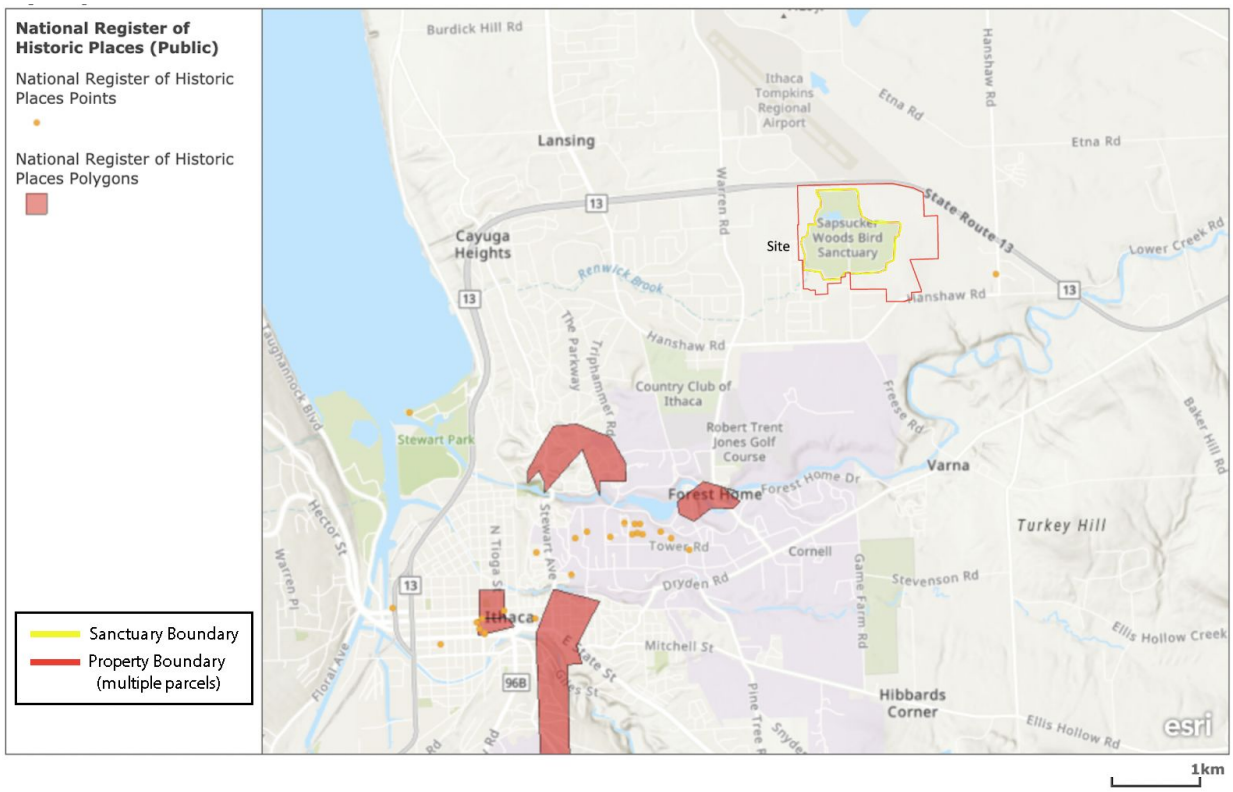


Figure 30: National Register of Historic Places[1]

The Site is not listed in the National Register of Historic Places[1]. The official list is maintained by the National Parks Service and includes places worthy of preservation as defined in the National Historic Preservation Act of 1966. The places listed in the National Register of Historic Place have significance in American history, architecture, art, archeology, engineering, and culture. The Historic Places closest to the Site are the Forest Home Historic District and Cornell Heights Historic District.

1. National Register of Historic Places. The National Park Service (2014, April). Retrieved from https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466