

## **APPENDIX D – WETLAND DELINEATION REPORT**



## MEMORANDUM

To: Michelle Carpenter  
*Turning Point Energy*

From: Ashley Payne  
*Kimley-Horn and Associates, Inc.*

Date: July 12, 2023

Subject: *Blackberry Township, Kane County, Illinois – KN216 Level 1 Wetland Delineation Memorandum*

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## INTRODUCTION

Kimley-Horn was contracted by Turning Point Energy to review the KN216 project study area for potential wetlands and waterways. See Figure 1 for project location and Figure 2 for the project study area boundary. The project study area is located in Blackberry Township, Kane County, Illinois. The study area is approximately 82 acres in size and is located in Sections 23 and 14 of Township 39N, Range 7E. Kimley-Horn reviewed available background data to assist in determining if there are any potential wetlands and waterways within the study area.

## AVAILABLE BACKGROUND DATA:

Kimley-Horn reviewed available topographic maps, the National Wetlands Inventory (NWI), the National Hydrography Dataset (NHD), LiDAR, soil survey data, public waters, floodplain data, and aerial photography to identify potential wetlands or surface waters within the study area vicinity.

### *U.S. Geological Survey (USGS) Topographical Map*

A review of the Sugar Grove, Illinois 7.5-minute topographical quadrangle depicts gravel pits on the eastern end of the study area. There is an unimproved road that crosses from the northwestern corner of the study to the middle of the eastern border. An intermittent pond is located on the southern portion of the study area. A building is identified in the southeastern corner of the study area. The study area is primarily undeveloped land. The USGS topographical map is presented as Figure 3.

### *National Wetlands Inventory (NWI)*

Based on a review of the U.S. Fish and Wildlife Service (USFWS) NWI,<sup>1</sup> portions of 4 wetland features are present within the study area. The NWI-mapped features are identified as excavated ponds (PUBGx). The NWI-mapped features are presented on Figure 4.

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<sup>1</sup> USFWS. 2023. National Wetlands Inventory. Vector Digital Data. Published May 1, 2023.

### *USGS National Hydrography Dataset (NHD)*

Based on a review of the USGS NHD,<sup>2</sup> portions of two unnamed flowline segments transect the study area. One unnamed waterbody is present within the study area. The NHD-mapped resources are presented on Figure 4.

### *2-ft LiDAR Contours*

Two-foot contours<sup>3</sup> were reviewed to determine if any wetland areas or drainage swales may be present in the study area. The eastern portion of the study area generally slopes to the east and is drained via swales, some of which approximately align with the NHD-mapped flowline segments. The western portion of the study area has varied topography that drains into the excavated portions of the study area and to the east. The study area ranges in elevation from 732 to 810 feet above sea level. The 2-foot contours are presented on Figure 5.

### *Kane County Soil Survey*

A review of the Kane County soil survey via the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey (WSS) database<sup>4</sup> identified 9 soil types within the study area. The entire study area is mapped with a predominantly non-hydric soils rating at or below 8 percent, or a non-hydric soils rating of 0 percent. Hydric soils rating data are presented on Figure 6.

### *Illinois Department of Natural Resources (IDNR) Public Waters Inventory*

A review of the IDNR Public Waters Inventory<sup>5</sup> was completed. The Fox River is located approximately five miles east of the study area. The IDNR Public Waters feature is presented on Figure 7.

### *FEMA Floodplain*

The Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) Viewer<sup>6</sup> was reviewed to determine if any FEMA 100-year floodplain is located within the project study area. Based on Panel 17089C0310H (effective August 3, 2009), the project study area is located within Zone X which is outside the FEMA 100-year floodplain. The FEMA floodplain data are presented on Figure 8.

### *Previous Study Area Disturbance*

Historic aerials from 1993 to 2021 were reviewed to determine previous land use and disturbance on the study area and are presented in Attachment A. Several potential wetlands were visible on the reviewed historic aerials, see comments in Table 1. The study area has been used for agricultural purposes and gravel pits since at least 1993.

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<sup>2</sup> USGS. 2023. National Hydrography Dataset. Vector Digital Data. Published March 7, 2023.

<sup>3</sup> USGS. 2020. USGS 1 Meter DEM Panels. Published March 30, 2020.

<sup>4</sup> USDA. 2022. USDA. Web Soil Survey. Illinois. Vector Digital Data. Published October, 2022.

<sup>5</sup> IDNR. 2023. Illinois Public Waters. Available online at

<https://idnr.maps.arcgis.com/apps/webappviewer/index.html?id=b64decfb69504164a46badb2841ebb11>

<sup>6</sup> USGS. FEMA National Flood Hazard Layer Viewer. Available online at <https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd>



**Table 1. Project Study Area Historic Aerial Review**

<b>Year (Month, Day)</b>	<b>Land Use</b>	<b>3-month Antecedent Precipitation Conditions</b>	<b>Comments</b>
1993	Agricultural/ Gravel pits	Normal	Study area consists of cropped agricultural field, gravel pits, and forest. Linear features present in northern agricultural area. Saturated soil visible in center of northern agricultural area. Pond visible in the southern central portion of the study area.
1998	Agricultural/ Gravel pits	Wetter than normal	Study area consists of cropped agricultural fields, gravel pits, and forest. Pond visible in the southern central portion of the study area.
2002	Agricultural/ Gravel pits	Normal	Study area consists of cropped agricultural fields, gravel pits, and forest. Pond visible in the southern central portion of the study area. Saturated soil visible in the northern agricultural area.
2005 (March)	Agricultural/ Gravel pits	Normal	Study area consists of cropped agricultural field, gravel pits, and forest. Pond visible in the southern central portion of the study area. No saturation or crop stress is visible.
2005 (June)	Agricultural/ Gravel pits	Drier than normal	Study area consists of cropped agricultural field, gravel pits, and forest. Pond visible in the southern central portion of the study area. Linear drainage feature present in northern agricultural field.
2006	Agricultural/ Gravel pits	Wetter than normal	Study area consists of cropped agricultural field, gravel pits, and forest. Pond visible in the southern central portion of the study area. No saturation or crop stress is visible.
2007 (June)	Agricultural/ Gravel pits	Drier than normal	Same comment as above.
2007 (October)	Agricultural/ Gravel pits	Normal	Same comment as above.
2008	Agricultural/ Gravel pits	Wetter than normal	Same comment as above.
2009	Agricultural/ Gravel pits	Wetter than normal	Study area consists of cropped agricultural field, gravel pits, and forest. Pond visible in the southern central portion of the study area. Uncropped areas visible in northern agricultural area.
2010 (June, 23)	Agricultural/ Gravel pits	Wetter than normal	Study area consists of cropped agricultural field, gravel pits, and forest. Pond visible in the southern central portion of the study area. Saturated areas visible in northern portion of agricultural area.
2010 (June, 30)	Agricultural/ Gravel pits	Wetter than normal	Same comment as above.

Year (Month, Day)	Land Use	3-month Antecedent Precipitation Conditions	Comments
2011	Agricultural/ Gravel pits	Normal	Study area consists of cropped agricultural field, gravel pits, and forest. Pond visible in the southern central portion of the study area. Crop stress is visible in the center of the northern agricultural area.
2012	Agricultural/ Gravel pits	Normal	Study area consists of cropped agricultural field, gravel pits, and forest. Pond visible in the southern central portion of the study area. No saturation or crop stress is visible.
2013	Agricultural/ Gravel pits	Wetter than normal	Study area consists of cropped agricultural field, gravel pits, and forest. Pond visible in the southern central portion of the study area. Saturated area visible in northern portion of the agricultural area.
2015	Agricultural/ Gravel pits	Normal	Same comment as above.
2016	Agricultural/ Gravel pits	Normal	Study area consists of cropped agricultural field, gravel pits, and forest. Pond visible in the southern central portion of the study area. Crop stress visible in the northern portion of the study area. Linear drainage feature present along northern boundary of northern agricultural area.
2017	Agricultural/ Gravel pits	Wetter than normal	Study area consists of cropped agricultural field, gravel pits, and forest. Pond visible in the southern central portion of the study area. Saturated soil and crop stress visible throughout center of the northern agricultural area.
2018 (March)	Agricultural/ Gravel pits	Normal	Study area consists of cropped agricultural field, gravel pits, and forest. Pond appears partially filled in in the southern central portion of the study area. Slight crop stress and saturated soil visible in the northern agricultural area.
2018 (July)	Agricultural/ Gravel pits	Wetter than normal	Study area consists of cropped agricultural field, gravel pits, and forest. Smaller pond visible in the southern central portion of the study area. Crop stress is visible in the northern agricultural area.
2018 (October)	Agricultural/ Gravel pits	Wetter than normal	Same comment as above.
2019	Agricultural/ Gravel pits	Wetter than normal	Study area consists of cropped agricultural field, gravel pits, and forest. Pond visible in the southern central portion of the study area. Saturated soils and crop stress visible in the northern agricultural area.
2021	Agricultural/ Gravel pits	Drier than normal	Same comment as above.

Two areas of continued stunted or stressed vegetation were visible on the reviewed historic aerials. One pond was visible on the reviewed historic aerials.

## **CONCLUSIONS AND RECOMMENDATIONS:**

Based on the Level 1 Wetland Delineation, Kimley-Horn identified two potential agricultural wetlands in the northern portion of the agricultural area and one pond in the southern central portion of the forested study area (see Figure 9). A level 2 (field) wetland delineation is recommended if project infrastructure is located near the two potential agricultural wetlands and one pond in the study area. If the current (as of the date of this report) project extents remain as-is, a field delineation would be needed. If project infrastructure will avoid the potential wetland features, a field delineation would not be needed. The site plan is included as Attachment B.

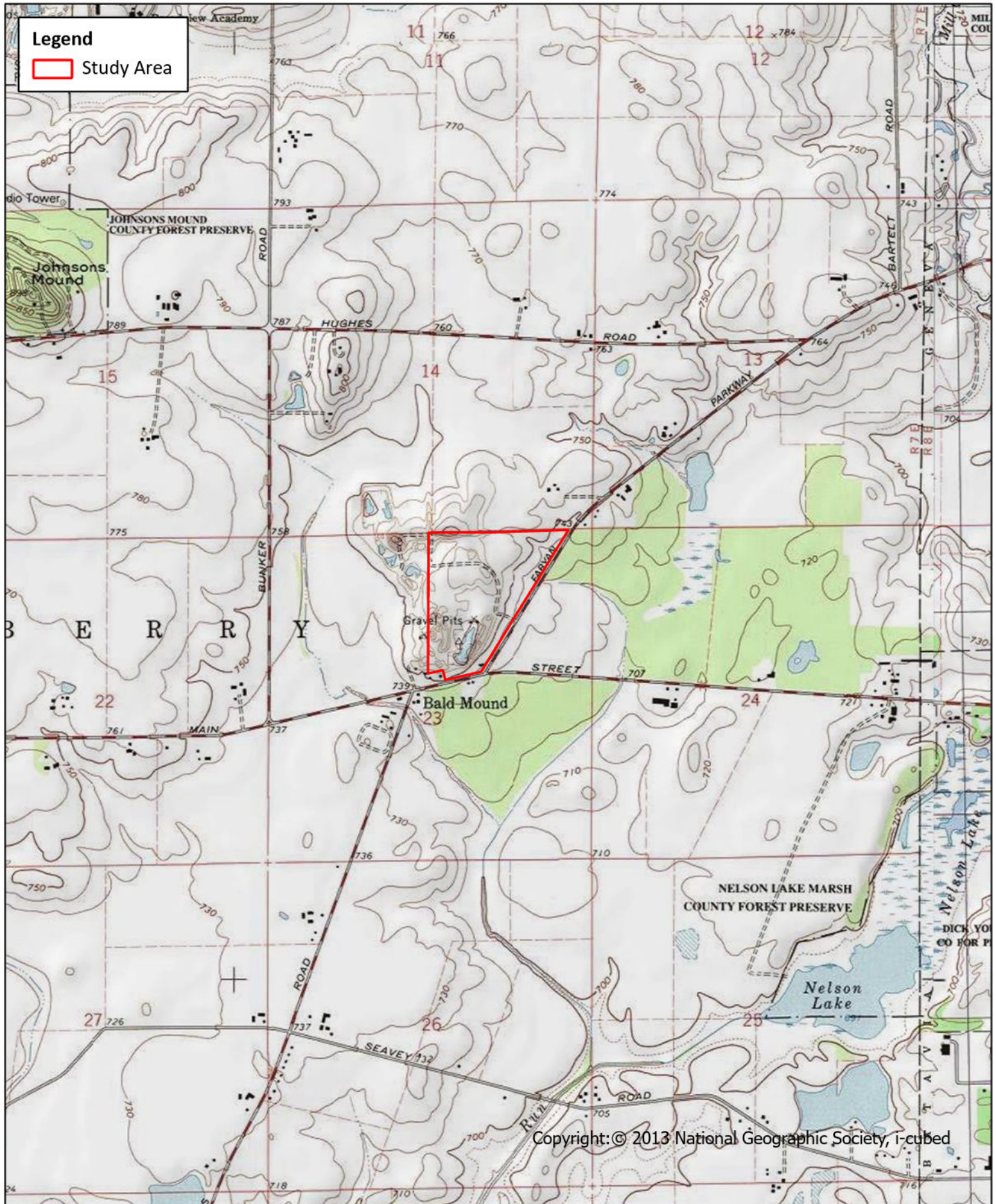
# Figures











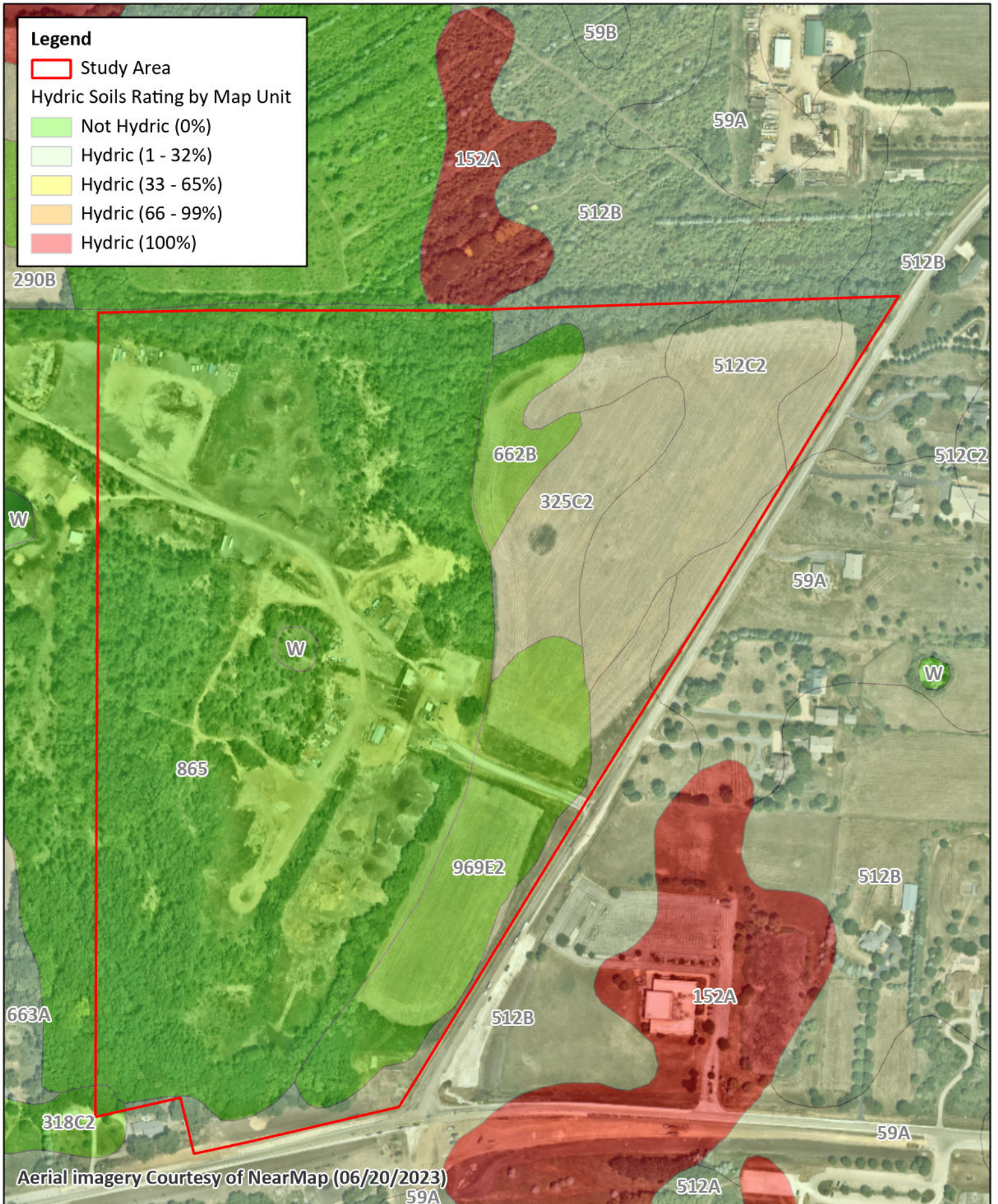












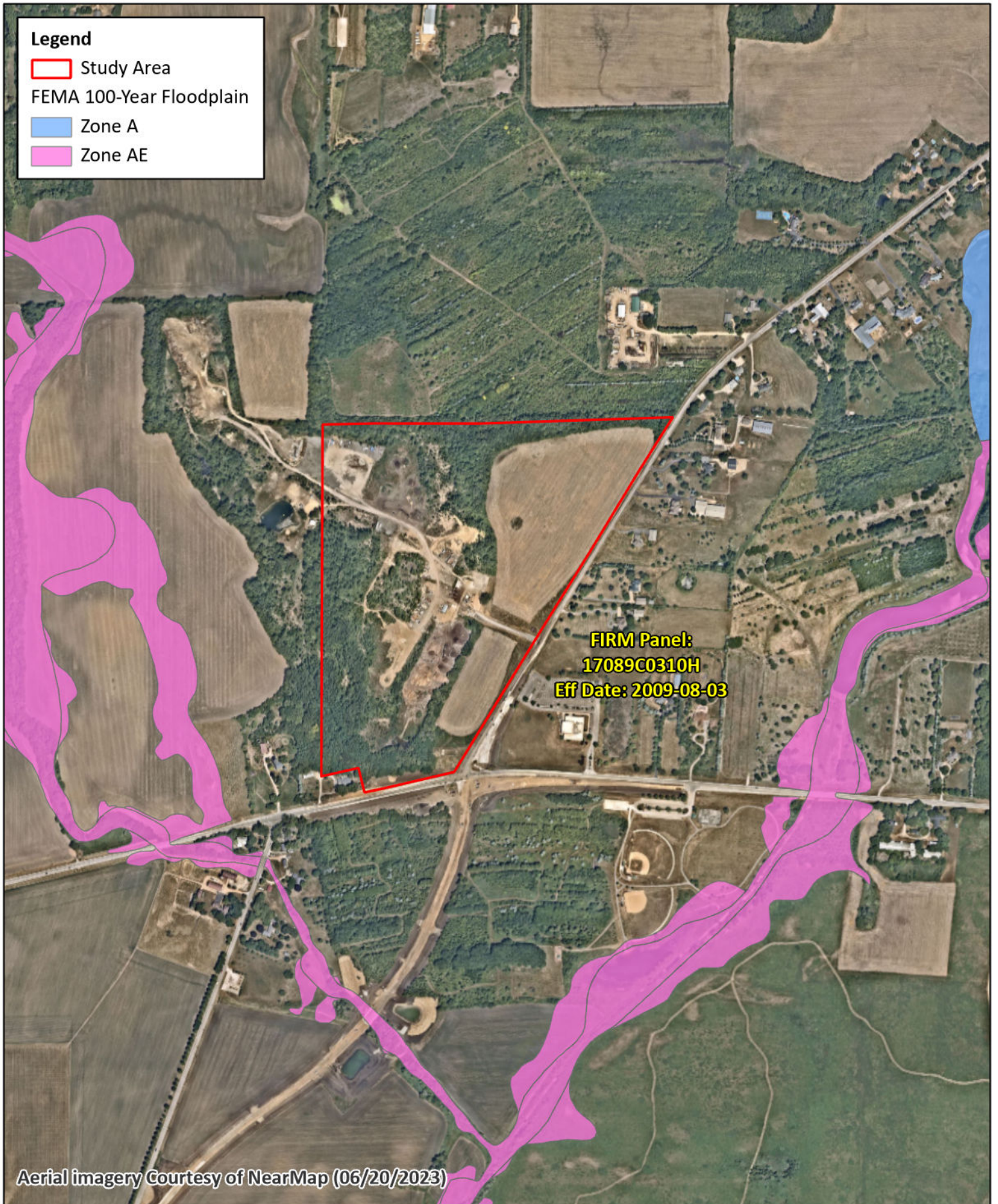
## Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
59A	Lisbon silt loam, 0 to 2 percent slopes	8	1.0	1.2%
318C2	Lorenzo loam, 4 to 6 percent slopes, eroded	0	0.1	0.1%
325C2	Dresden silt loam, 4 to 6 percent slopes, eroded	4	4.5	5.5%
512B	Danabrook silt loam, 2 to 5 percent slopes	8	7.0	8.5%
512C2	Danabrook silt loam, 5 to 10 percent slopes, eroded	8	7.8	9.5%
662B	Barony silt loam, 2 to 5 percent slopes	0	2.5	3.0%
865	Pits, gravel	0	50.6	61.7%
969E2	Casco-Rodman complex, 12 to 20 percent slopes, eroded	0	8.4	10.2%
W	Water	0	0.3	0.3%
<b>Totals for Area of Interest</b>			<b>82.1</b>	<b>100.0%</b>













**Legend**  
Study Area  
Desktop Wetlands

Aerial imagery Courtesy of NearMap (06/20/2023)

**Figure 9. Level 1 Delineated Resources**  
Blackberry Township, Kane County  
Turning Point Energy



# **ATTACHMENT A**

## Historic Aerials

**Legend**

 Study Area



Aerial imagery Courtesy of Google Earth





Legend

 Study Area



Aerial imagery Courtesy of Google Earth





**Legend**

 Study Area



Aerial imagery Courtesy of Google Earth





Legend

 Study Area



Aerial imagery Courtesy of Google Earth





**Legend**

 Study Area



Aerial imagery Courtesy of Google Earth





Legend

 Study Area



Aerial imagery Courtesy of Google Earth





**Legend**

 Study Area



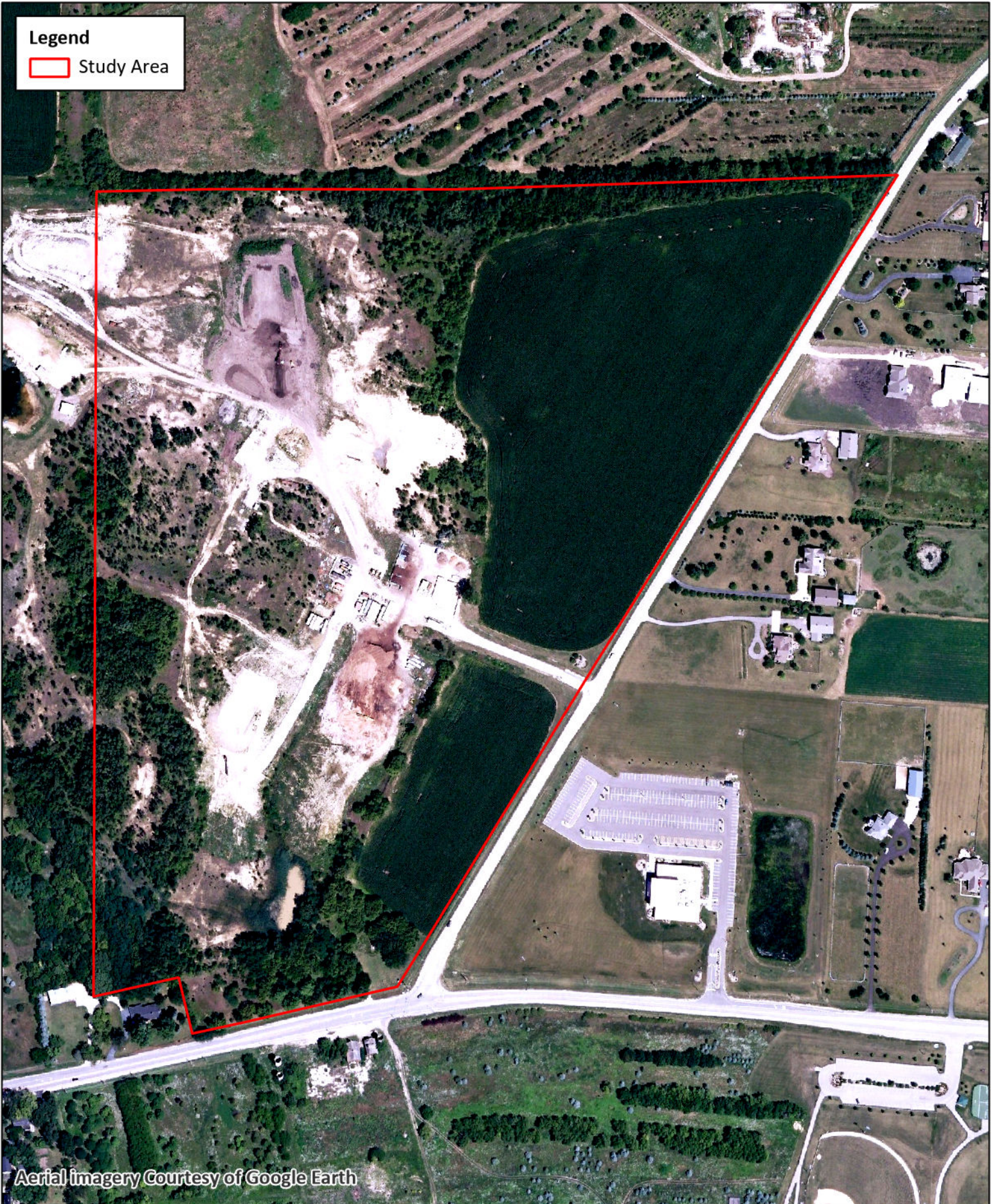
Aerial imagery Courtesy of Google Earth





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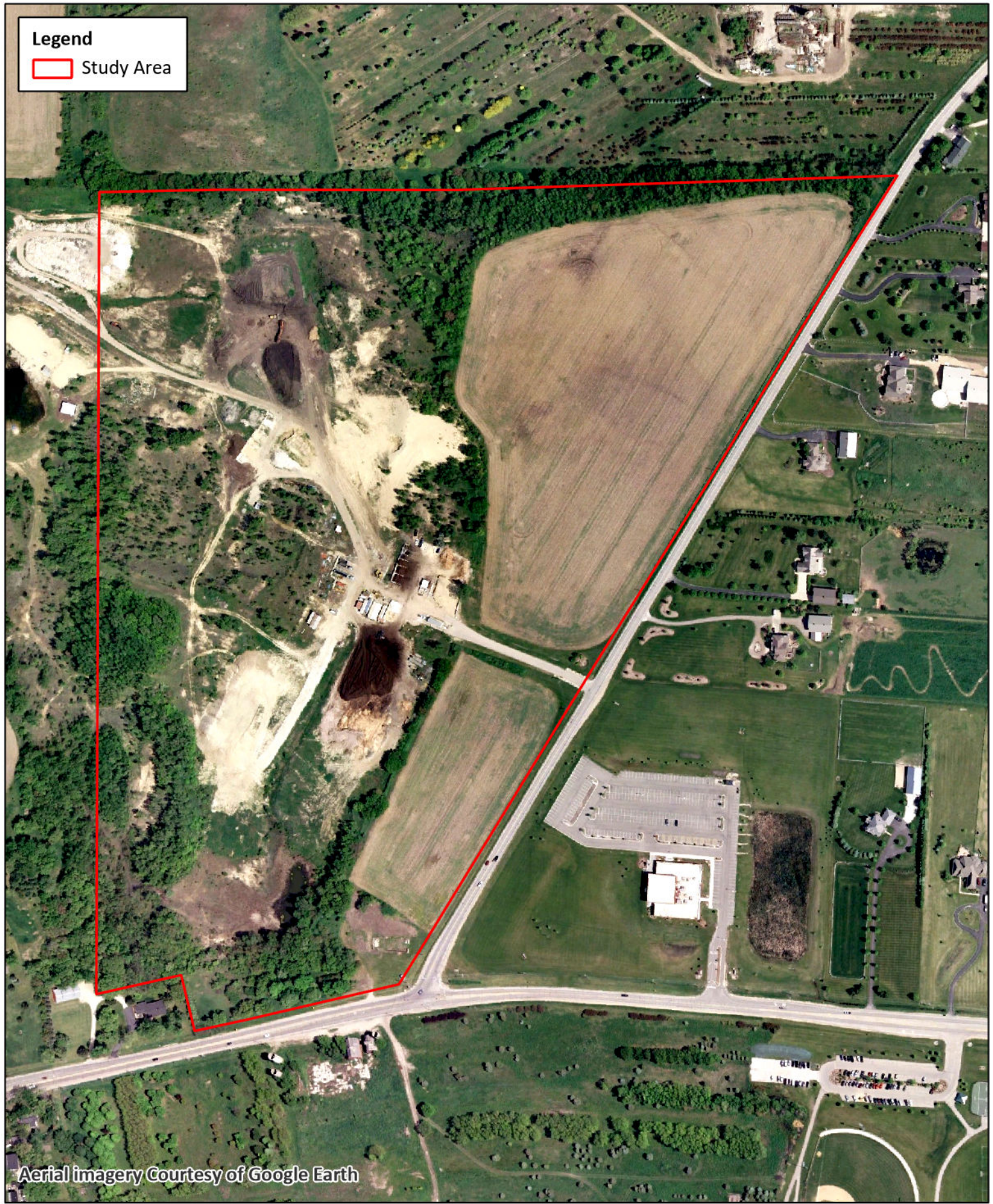
 Study Area



Aerial imagery Courtesy of Google Earth



**Legend**  
[Red Outline] Study Area



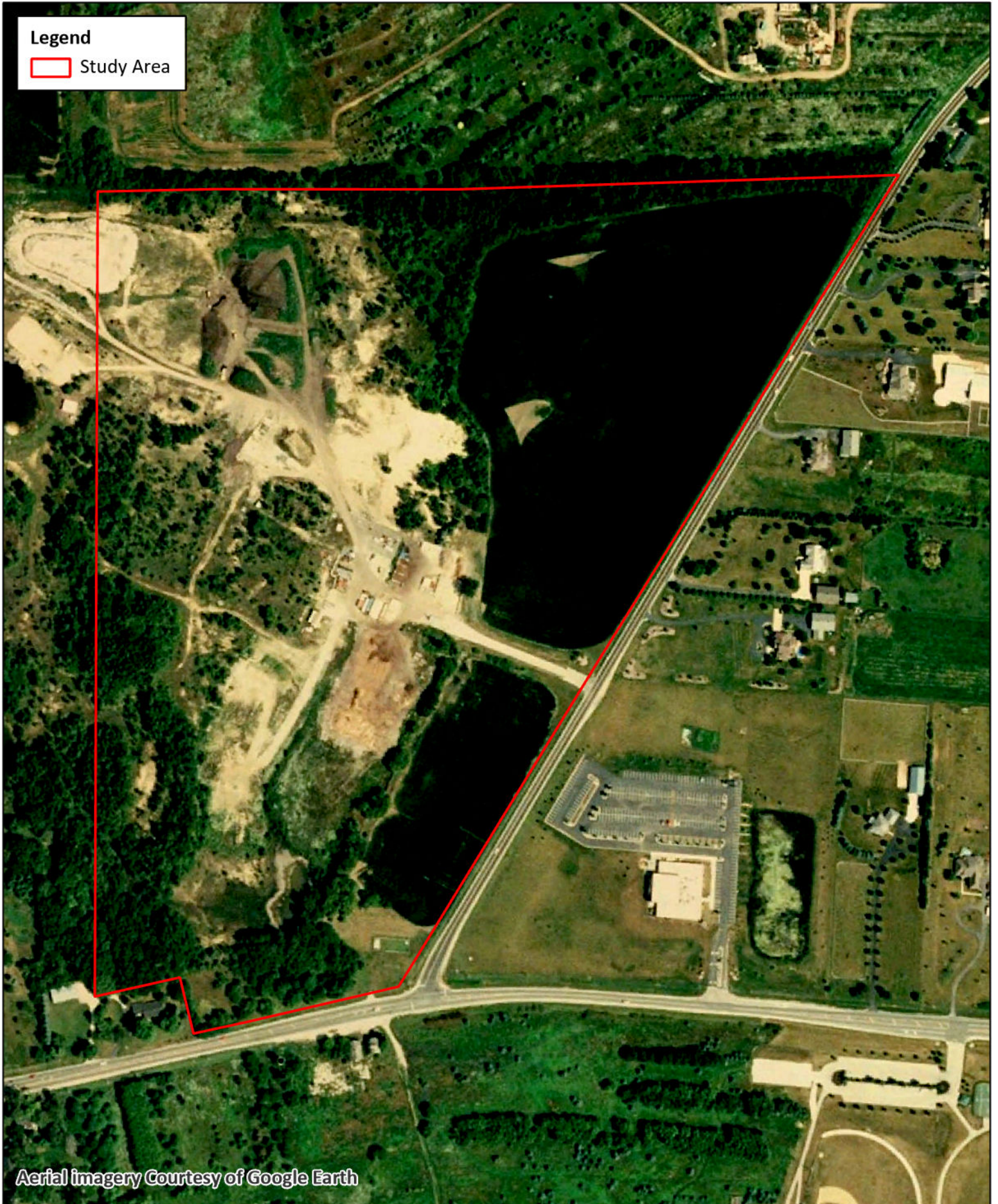
Aerial imagery Courtesy of Google Earth





Legend

 Study Area



Aerial imagery Courtesy of Google Earth





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 Study Area



Aerial imagery Courtesy of Google Earth





Legend

 Study Area

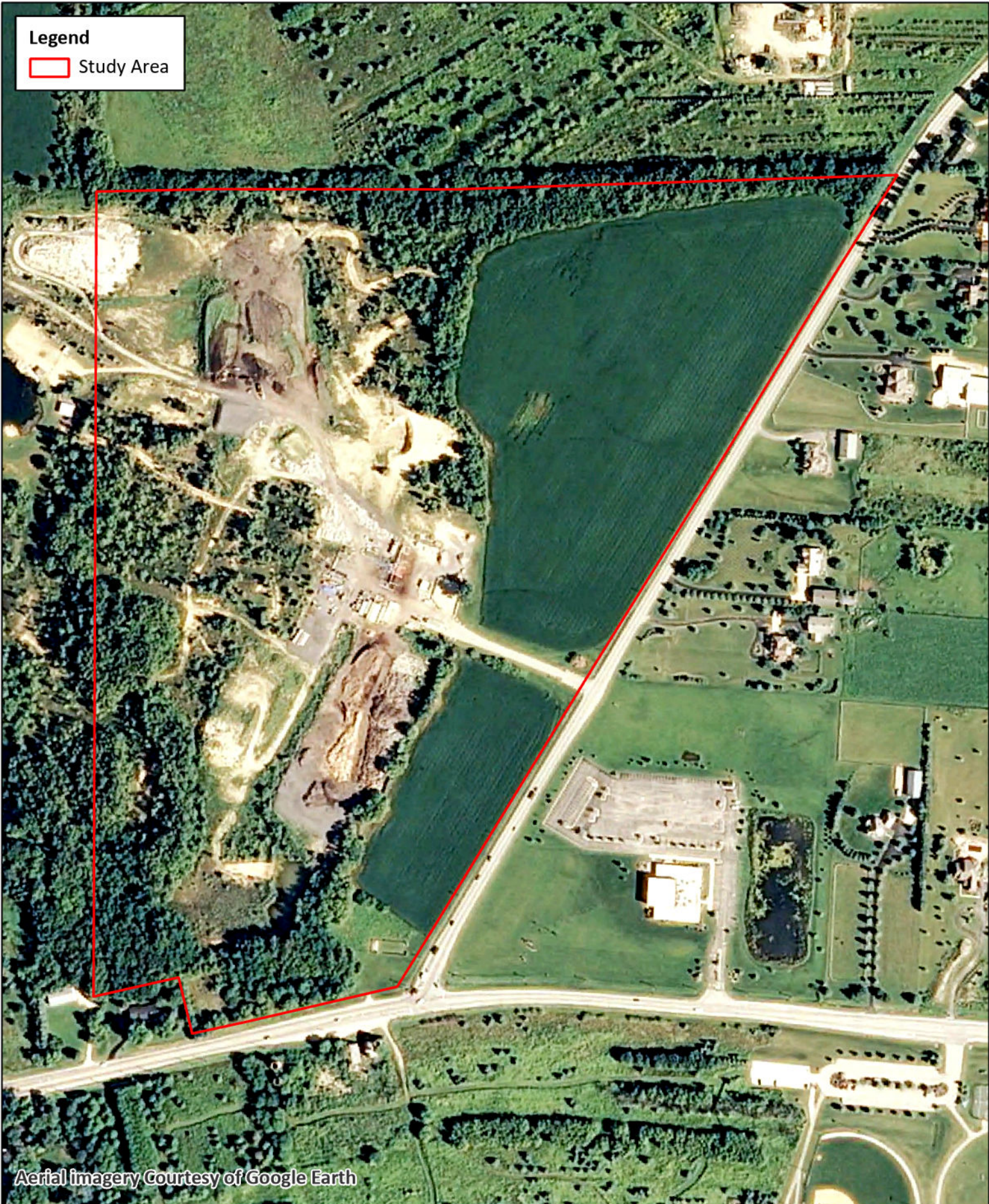


Aerial imagery Courtesy of Google Earth





Legend  
Study Area



Aerial imagery Courtesy of Google Earth



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 Study Area



Aerial Imagery Courtesy of Google Earth





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 Study Area



Aerial imagery Courtesy of Google Earth





**Legend**

 Study Area



Aerial Imagery Courtesy of Google Earth





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 Study Area



Aerial imagery Courtesy of Google Earth





**Legend**

 Study Area



Aerial imagery Courtesy of Google Earth





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 Study Area



Aerial imagery Courtesy of Google Earth





Legend

 Study Area



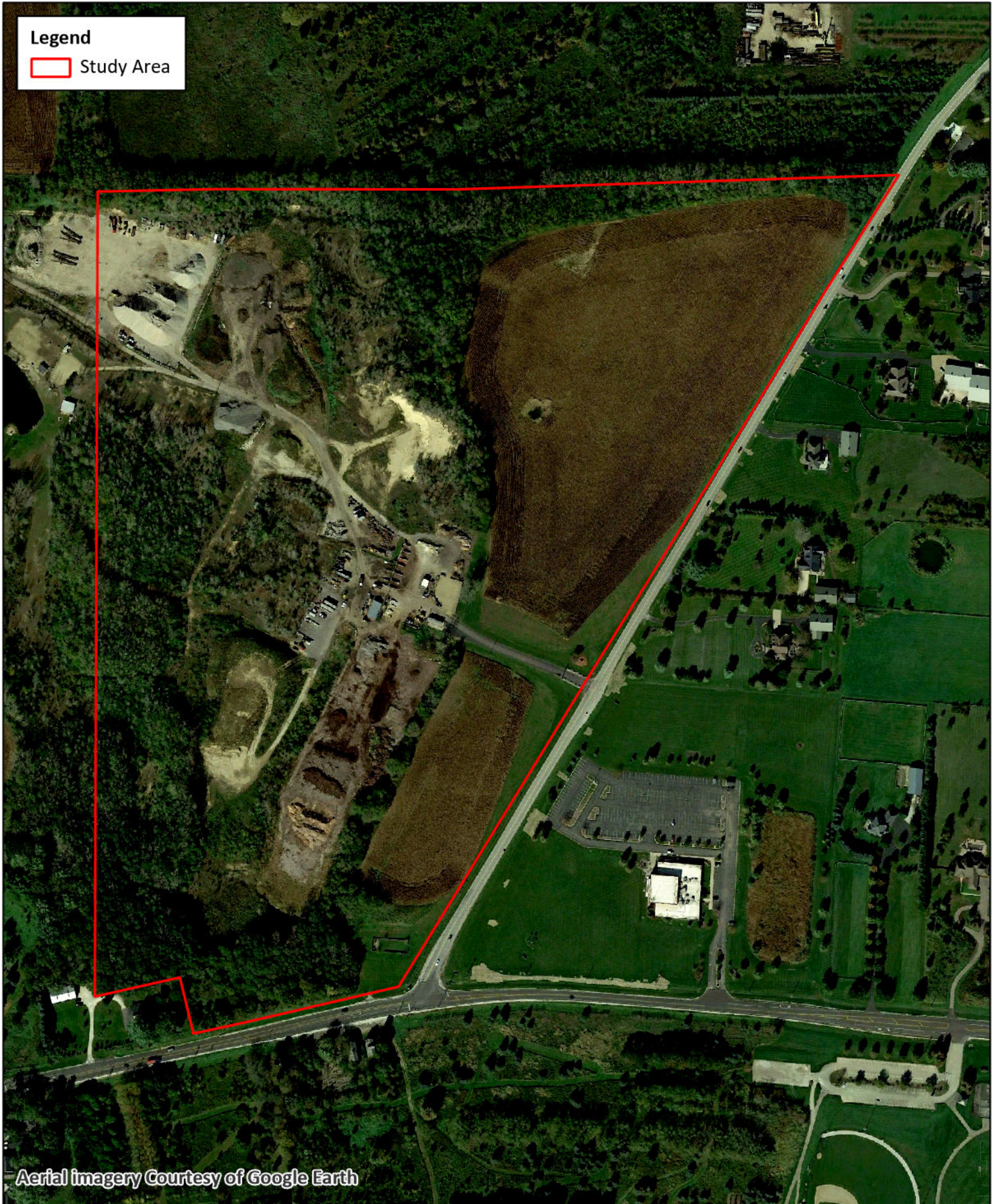
Aerial imagery Courtesy of Google Earth





**Legend**

 Study Area

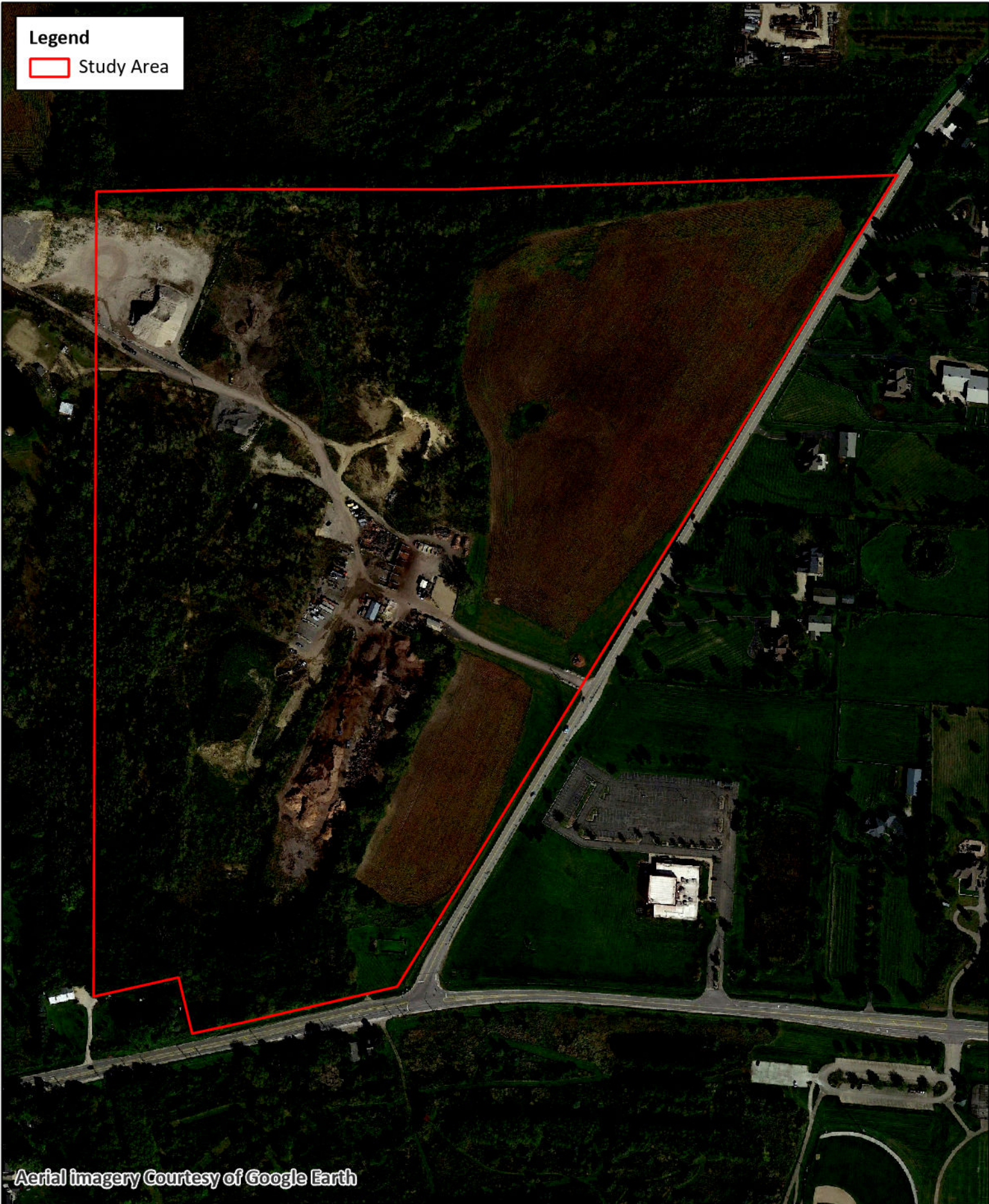


Aerial imagery Courtesy of Google Earth





**Legend**  
Study Area



Aerial imagery Courtesy of Google Earth





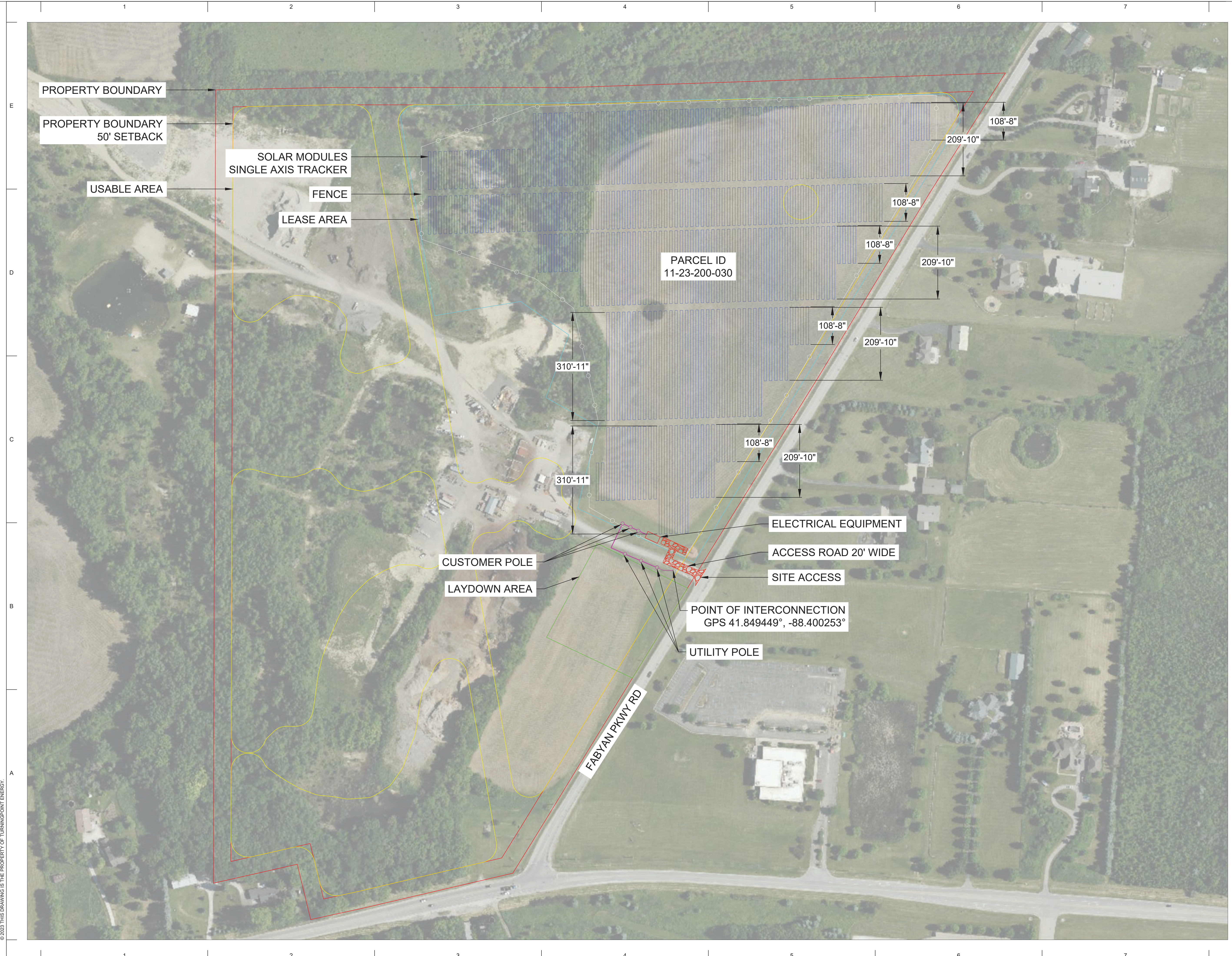




# ATTACHMENT B

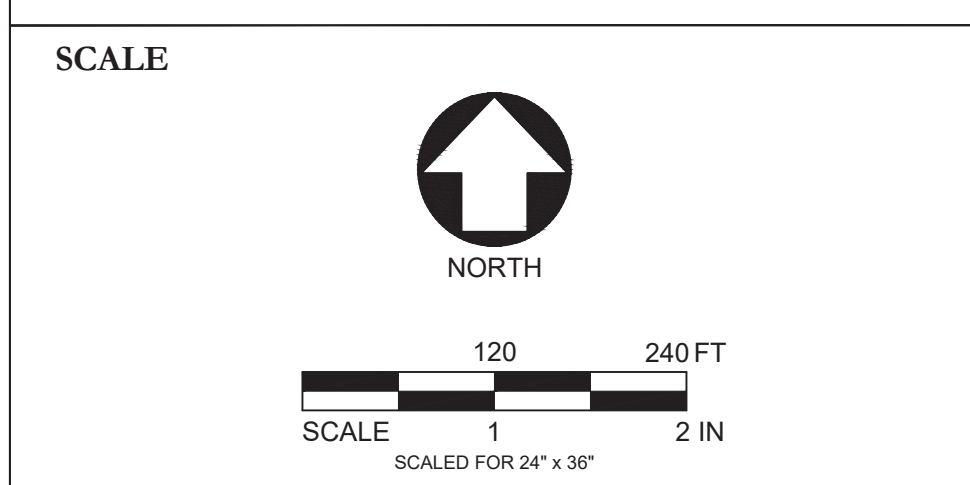
## Site Plan





### SYSTEM SUMMARY

AC SYSTEM SIZE	4.99MW <sub>AC</sub>
DC SYSTEM SIZE	7.41MW <sub>DC</sub>
OVERALL SITE AREA	82.07 ACRES
LEASE AREA	28.49 ACRES
TOTAL LOD	25.96 ACRES
FENCE AREA	24.81 ACRES
ARRAY AREA	19.43 ACRES
GEN-TIE LENGTH	345 FEET
TOTAL NEW ROADS LENGTH	250 FEET
TOTAL NEW ROADS AREA	4,711 SQFT
TOTAL FENCE LENGTH	4,680 FEET
TREE CLEARING AREA	6.50 ACRES
TOTAL NEW LANDSCAPING	0 FEET
GCR	50%
MODULE STC RATING	545 W
MODULE QUANTITY	13,598
STRING SIZE (# PANELS)	26
STRING QUANTITY	523
NUMBER OF TRACKERS	1 STRINGS TRACKER- 133 2 STRINGS TRACKER- 141 3 STRINGS TRACKER- 36
RACK TYPE	SINGLE AXIS TRACKER
ARRAY AZIMUTH	180°
TILT ANGLE	60° TO 60°
TOTAL LAYDOWN AREA	1.97 ACRES
PARCEL ID	11-23-200-030
MODULE MFR	LONGI SOLAR
MODULE MODEL	LR5-72HBD-545M BIFACIAL
INVERTER MFR	CPS SCH125KTL-DO/US-600
INVERTER MODEL	CHINT POWER SYSTEMS
INVERTER QUANTITY	40
INVERTER AC OUTPUT	125kW <sub>AC</sub>



PRELIMINARY  
NOT FOR CONSTRUCTION

PROJECT **ILKN216** LAND OWNER **ARIOLA, JAMES J**  
 ADDRESS **FABYAN PKWY ELBURN, IL 60119**

REV	DESCRIPTION	DATE

PROJECT # **ILKN216** DRAWN BY **EQ**  
 DATE **2023-05-29**

SHEET NAME **SITE PLAN** SHEET NUMBER **A.1**