Hey and Associates, Inc.

Wetland Delineation Report
Tim Meyer – Ground-Mounted Solar Farm
Elgin Township, Kane County, Illinois

Project No. 25-0180

Prepared For:
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Executive Summary

As part of the environmental review for a proposed 5.0 Megawatt community solar project located at Brookside Drive and Almora Terrace in Elgin Township, Kane County, Illinois, the project site was assessed for the presence of jurisdictional wetlands and Waters of the U.S. (WOTUS) under the Clean Water Act and for isolated wetlands and Waters of Kane County under the Kane County Stormwater Management Ordinance.

The site is currently in agricultural production. The wetland delineation followed the U.S. Army Corps of Engineers (USACE) methodology as required by both the USACE and Kane County. This included a farmed wetland determination following the USACE guidelines and the general NRCS procedure using historic aerials.

The site contains one Waters of the U.S. along the southern edge of the parcel which is a branch of Tyler Creek. No wetlands were identified on site. Several of the published map resources show wet features or wetlands on the property, but field investigation showed that these were inaccurate.

The creek corridor (Waters 1) delineated in this study will be fully avoided during construction and operation of the solar facility. All construction activities will occur outside of any buffer zones, and appropriate best management practices will be implemented to prevent sedimentation or disturbance to the creek.

As no dredge or fill activities are proposed within jurisdictional waters, and because no wetlands are present on-site, a permit under Section 404 of the Clean Water Act is not required. Permitting under the Kane County Stormwater Ordinance may be required.

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Tim Meyer – Ground-Mounted Solar Farm
Wetland Delineation Report

Introduction

A wetland delineation was conducted on the ±49.52-acre parcel of land, parcel number 06-08-401-013, west of Randall Road, north of U.S. Route 20 in Elgin Township, Kane County, Illinois (Exhibit 1). The project site is further located in Sections 8 and 17, Townships 39 and 41 North, Range 8 East of the third principal meridian. The project site is in row crop agricultural production with a Tyler Creek corridor along the south end of the property. Residential neighborhoods are the predominant surrounding last use to the east and north and agricultural fields to the south and west.

Existing Maps

The United States Geological Survey (USGS) topographic map shows an intermittent stream channel near the south boundary of the project site (Exhibit 2). The National Wetland Inventory Map (NWI) shows that stream along the south project boundary as Riverine Intermittent Streambed Seasonally Flooded (R4SBC), and shows a Palustrine Emergent Persistent Temporarily Flooded Farmed (PEM1Af) within the project site (Exhibit 3). The Kane County ADID (Advanced Identification) Study shows wetlands (High Functional Value) along the creek corridor along the southern project boundary and extending into the northeast corner of the project site (Exhibit 4). The FEMA Flood Hazard Zones Map shows regulatory floodway, Zone AE Floodplain, and 0.2% Annual Chance Flood Hazard within the project site (Exhibit 5). The USGS Hydrologic Atlas shows a 1960 flood of record along a branch of Tyler Creek within the project site (Exhibit 6). The Natural Resources Conservation Service's Kane County Soil Survey (Exhibit 7) shows the hydric soil series Drummer silty clay loam (152A), Will loam (329A), and Elpaso silty clay loam (356A) within the project site. Note that these map resources are intended to show what may be present on the site, but do not represent confirmed current field conditions.

Wetland/Waters Delineation Methods

A wetland delineation was conducted by Jeffrey L. Mengler, PWS, QWRS W-096, of Hey and Associates, Inc. on June 20, 2025. The wetland delineation followed the procedures described

in the 1987 U. S. Army Corps of Engineers' (USACE) Wetland Delineation Manual and the 2010 Regional Supplement: Midwest Region. The entire project area was inspected, with areas supporting wetland plant species prioritized for investigation. If inspection revealed that wetland plant species comprised more than 50 percent of the plant cover, the suspected wetland was further examined for field indicators of hydric soil and hydrology. The USACE-accepted field indicators of hydric soil include: gleyed and low chroma matrix and mottle colors, and iron and manganese concretions. Necessary hydric soil indicators were field verified in the wetland areas. The USACE-approved field indicators of hydrology include visual observation or photographic evidence of soil inundation or saturation during the growing season, oxidized channels associated with living roots and rhizomes, water marks, drift lines, waterborne sediment deposits, water-stained leaves, surface scoured areas and drainage patterns. Wetland hydrologic criteria were met in the areas delineated as wetland.

A list of observed plant species and a native vegetative quality rating was calculated for suspected wetland areas evaluated using the Floristic Quality Assessment (FQA) system as originally published in Swink and Wilhelm's *Plants of the Chicago Region,* 1994, and updated in Wilhelm and Rericha's *Flora of the Chicago Region*, 2017. The FQA method assigns a rating to plant species that reflects the fundamental conservatism that the species exhibits for natural habitats. A native species that exhibits specific adaptations to a narrow spectrum of the environment is given a high rating. Conversely, a ubiquitous species that exhibits adaptations to a broad spectrum of environmental variables is given a low rating. Utilizing this method, a Floristic Quality Index (FQI) is derived for a given area. The FQI is an indication of native vegetative quality for an area: generally, 1-19 indicates low vegetative quality, 20-35 indicates high vegetative quality and above 35 indicates "Natural Area" quality.

The Waters limits were determined using the ordinary high-water mark (OHWM). For purposes of Section 404 of the Clean Water Act (CWA), the lateral limits of U.S. Army Corps of Engineers (USACE) jurisdiction over non-tidal waterbodies extends to the OHWM, in the absence of adjacent wetlands. When adjacent wetlands are present, CWA jurisdiction extends beyond the

OHWM to the limits of the adjacent wetlands. USACE regulations define the term "ordinary high-water mark" for purposes of the CWA lateral jurisdiction as:

> "The term *ordinary high-water mark* means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

Due to the presence of wetland vegetation below the OHWM, there were many instances where wetland was present below the OHWM, and the OHWM and wetland delineation line were coincident.

FARMED WETLAND DETERMINATION METHODS

As a result of a modification to a Memorandum of Agreement between the U.S. Army Corps of Engineers (USACE) and the U.S. Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS), farmed wetland delineations are no longer conducted by USDA-NRCS for purposes other than the implementation of the Farm Bill. Therefore, Hey and Associates, Inc. conducts farmed wetland determinations using the methodology outlined by the USDA-NRCS and in accordance with USACE guidelines for USACE permitting purposes. Available growing season aerial photography is reviewed, including a minimum of five years of aerials known to have been taken during normal years of precipitation, based upon the WETS (Wetland Climate Analysis) climate data tables. From the differing signatures on these aerial photographs, areas that may be prone to ponding or seasonal flooding, and crop failure or lack of planting can be determined. These photographic signatures must be present in the majority of normal precipitation years reviewed for an area to be considered a farmed wetland.

The NRCS Soil Survey for Kane County was also consulted for determining the presence of possible hydric soils in the area. Additionally, if there were any hydrologic or vegetative indicators on-site to support or refute information gathered by other means, these were

documented. Potential farmed wetland boundaries were determined through use of several sources of existing data as given in Table 1.

Table 1: Farmed Wetland Data.

Wetland Report Exhibit	Title of data source	Wetland(s) and/or hydric soils indicated	Comments
3	National Wetland Inventory Map	Yes	One wetland and one stream corridor were mapped
4	Kane County ADID Study	Yes	High Functional Value Wetlands mapped onsite
7	NRCS Soil Survey for Kane County	Yes	Three hydric soils were mapped on the site
11	WETS table – Elgin Water	-	

A farmed wetland determination was performed using growing season aerials from public sources, due to the age, poor quality, and lack of availability of crop compliance slides for this area. The Elgin Water WETS table was the closest reporting station with sufficient annual precipitation data to calculate wet, dry, and normal precipitation years following the NRCS method (Exhibit 11). Aerial photographs from 2014, 2016, 2022, 2023, and 2024 represent normal precipitation years and a growing season aerial from 2020 represents a wet precipitation year. The aerials used are provided in Exhibits 13 A-F.

WETLAND/WATERS DELINEATION RESULTS

One Waters was delineated on the project site, along the southern project boundary. This is a branch of Tyler Creek. It had relatively steep banks without riparian wetland, except where point bars were present that were vegetated with wetland plants. These point bars were not delineated separately but included within Waters 1. Lists of the observed plant species observed on these point bars, and in the upland area along the stream banks are given in Exhibit 9. Representative color photographs of the site are provided in Exhibit 10. The USACE Antecedent Precipitation Tool analysis indicated that the period prior to the wetland delineation was drier than normal precipitation and during a moderate drought (Exhibit 12).

The USACE OHWM Data Form is provided in Exhibit 14. Table 1 below provides a summary of the wetlands and Waters on the project site.

Table 2: Wetlands/Waters Summary.

Wetlands/ Waters	Area within Project Site (acres)	Native FQI[1]	Native Mean C[2]	Wetland Type	Dominant Vegetation
WATERS 1	0.31	8.33	2.78	stream and point bars	reed canary grass (*Phalaris arundinacea*) spotted touch-me-not (*Impatiens capensis)*
1 The Floristic Quality Index (FQI) is an indication of native vegetative quality for an area: generally, 1-19 indicates low vegetative quality, 20-35 indicates high vegetative quality and above 35 indicates "Natural Area" quality. 2 The Native Mean C is an indication of native vegetative quality for an area. Areas with a value of 3.5 or greater are considered high quality.					

FARMED WETLAND DETERMINATION RESULTS

Examination of the growing season aerials in the normal precipitation years revealed three (3) areas with a potential farmed wetland signature. Table 3 below provides a summary of the aerial analysis for farmed wetland signatures and Exhibits 13A-F are the growing season aerials with the Potential Farmed Wetland (PFW) areas identified. Initially, we determined that PFW 1 and PFW2 may qualify as farmed wetlands as they were evident in three (3) and four (4) of five (5) normal precipitation year aerials, respectively, based solely on the aerial photograph interpretations.

However, there is a 6-inch drain tile running through the bottom of the drainage path designated as PFW1 with a small basin on the northeast end (offsite) to catch water coming from the subdivision tile. The tile outlet passes through the trees along the creek bank. The design for the adjacent subdivision specified 40 feet of non-perforated tile from the creek bed to avoid the tree roots. The first spring after installation of this 40-foot tile, the tree roots plugged the tile and the water from the subdivision ran over the ground, affecting crop growth. The developer of the adjacent subdivision came out in the fall and replaced the tile with non-perforated pipe. The next summer the tile plugged again. The property owner (Tim Meyer) purchased a pipe camera and scoped the drain pipe and noticed a tree root had entered between the connection of two 20-foot non-perforated pipe sections. It is standard

practice to tape seams in rooted areas, and the tilers apparently did not do that. Mr. Meyer used a roto-rooter type machine and cleared the root structure from the pipe. Then rather than digging it up and taping the seam, he inserted two solid 4-inch pipes (seam taped) into the 6-inch pipe to prevent future roots from plugging the line. Therefore, this year (2025) there is no water or crop damage, as verified during our wetland delineation site inspection. Thus, due to repair and maintenance of the pass-through drain tile, this area is not a farmed wetland.

For the area designated as PFW2, three drain tile lines were installed through the area before 1984, including a 12-inch cement tile, an 8-inch cement tile, and some 4-inch clay tile laterals. These drain tiles were partially damaged which caused leaks in the lowest area. The 12-inch tile comes from the subdivision to the east, and they were responsible for repairing the damaged drain tiles. Mr. Meyer purchased the farm and went ahead and repaired these drain tiles to their prior function a few years ago. PFW2 was not evident during the 2025 wetland delineation inspection, and thus due to maintenance of the drain tile system it is not a farmed wetland.

It should also be noted that the woodland that shows in all of the historic aerials in the northeast corner of the property, and was partially mapped as ADID wetland, has been cleared and is now a soybean field. It is a high point topographically within the site, and the ADID mapping is erroneous. It is not and was not likely ever wetland due to its position on the landscape.

Table 3: Potential Farmed Wetland Aerial Review Summary.

Potential Farmed Wetland	2014 Normal	2016 Normal	2020 Wet	2022 Normal	2023 Normal	2024 Normal	3 of 5 Normal Met
PFW 1	No	Yes	No	Yes	No	Yes	Yes
PFW 2	No	No	Yes	Yes	Yes	Yes	Yes
PFW 3	No	No	Yes	No	No	No	No

SUMMARY AND CONCLUSIONS

The Wetland/Waters investigation revealed one Waters with small point bar wetland inclusions that corresponds to a channel of Tyler Creek. It was mapped as a high functional value wetland in the Kane County ADID study. Tyler Creek is a tributary to the Fox River, a traditionally navigable Waters of the United States. Therefore, it is our professional opinion that Waters 1 is under federal Clean Water Act jurisdiction. The USACE no longer gives priority to stand-alone Jurisdictional Determination requests not accompanied by a permit application. Since this project proposes no impacts to the creek corridor, we recommend requesting a No Permit Required letter from the USACE.

Any impacts to wetlands or Waters requires a permit under the Kane County Stormwater Management Ordinance. Buffer provisions of the ordinance may apply. This delineation does not provide information on the limits of the regulatory floodway or floodplain. The FEMA map only provides general guidance. Engineering studies and topographic survey to confirm a base flood elevation would need to be performed separately to accurately delineate the extent of floodway and floodplain present on the project site.

References:

Gabrielle, C., L. David, K.M. Fritz, T. Nadeau, B.J. Topping, A.O. Allen, P.H. Trier, S.L. Kichefski, L.A. James, E. Wohl, and D. Hammill. January 2025. National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams, Final Version. Wetlands Regulatory Assistance Program, U.S. Army Corps of Engineers, Engineer Research and Development Center, Vicksburg, MS. ERDC/CRREL TR-25-1.

Gutenson, J. L., C. O. Hamilton, and J. C. Deters. 2023. *Antecedent Precipitation Tool (APT) Version 2.0: Technical and User Guide.* ERDC/TN WRAP-23-2. Vicksburg, MS: US Army Engineer Research and Development Center. *http://dx.doi.org/10.21079/11681/47189.*

Swink, F. and G. Wilhelm. 1994. Plants of the Chicago Region. Indiana Academy of Science, Indianapolis, Indiana.

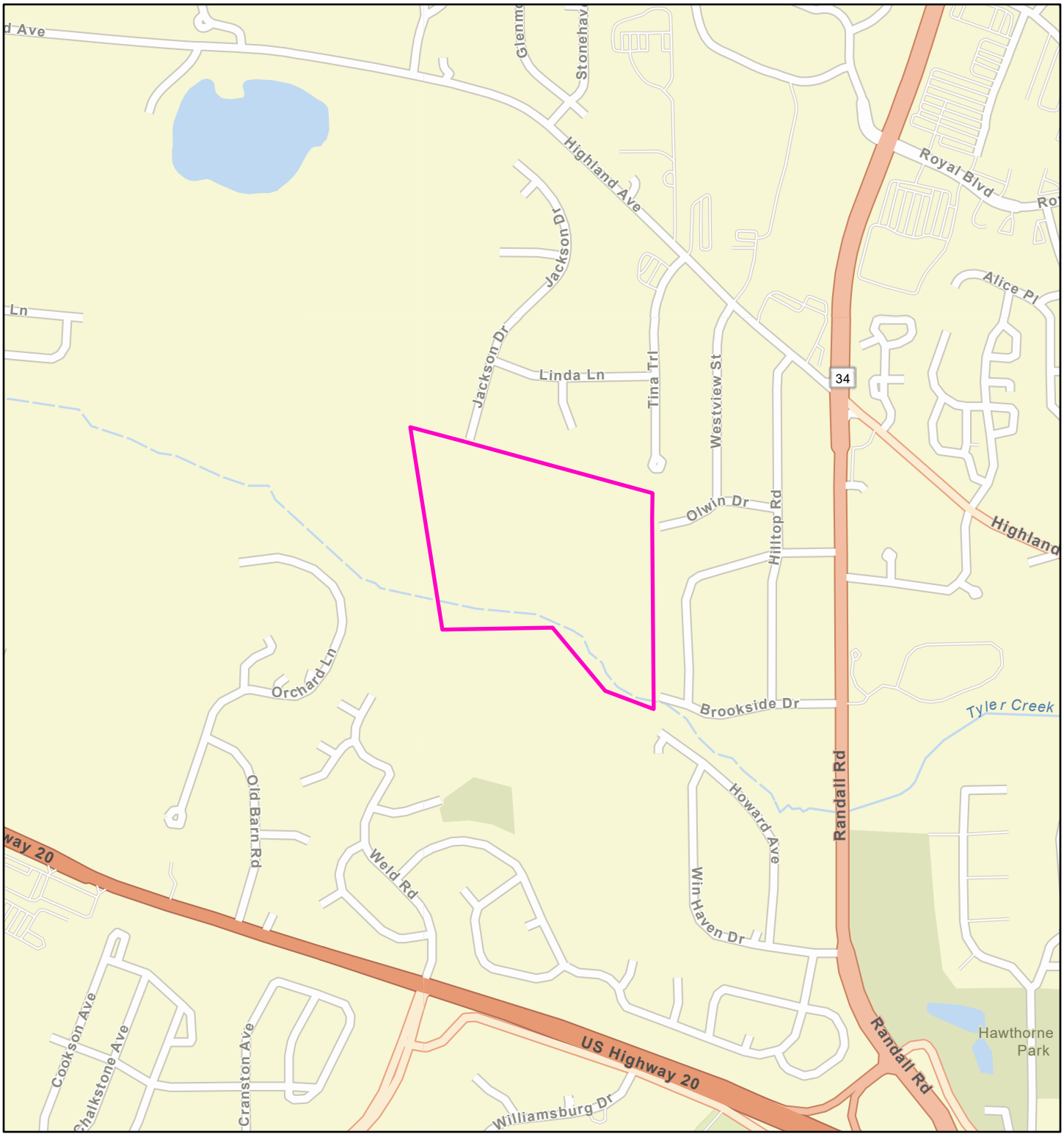
U.S. Army Corps of Engineers Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.

U.S. Army Corps of Engineers. 2005. Regulatory Guidance Letter 05-05. Subject: Ordinary High Water Mark Identification. December 7, 2005.

U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0), ed. J.S. Wakeley, R. W. Lichvar, and C.V. Noble. ERDC/EL TR-10-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2024. Field Indicators of Hydric Soils in the United States, Version 9.0.

Wilhelm, G. and L. Rericha. 2017. Flora of the Chicago Region: A Floristic and Ecological Synthesis. Indiana Academy of Science, Indianapolis, Indiana.



Scale:

0 1,000 Feet

Orientation:

Legend:

Project Boundary

Project Name:

Tim Meyer - Ground-Mounted Solar Farm

Prepared for:

Equity Advisors Inc.

Project Number: 25-0180

Date: 6/23/2025

Location Information:

T.39N and 41N, R.8E, Sections 8 and 17

Prepared by:

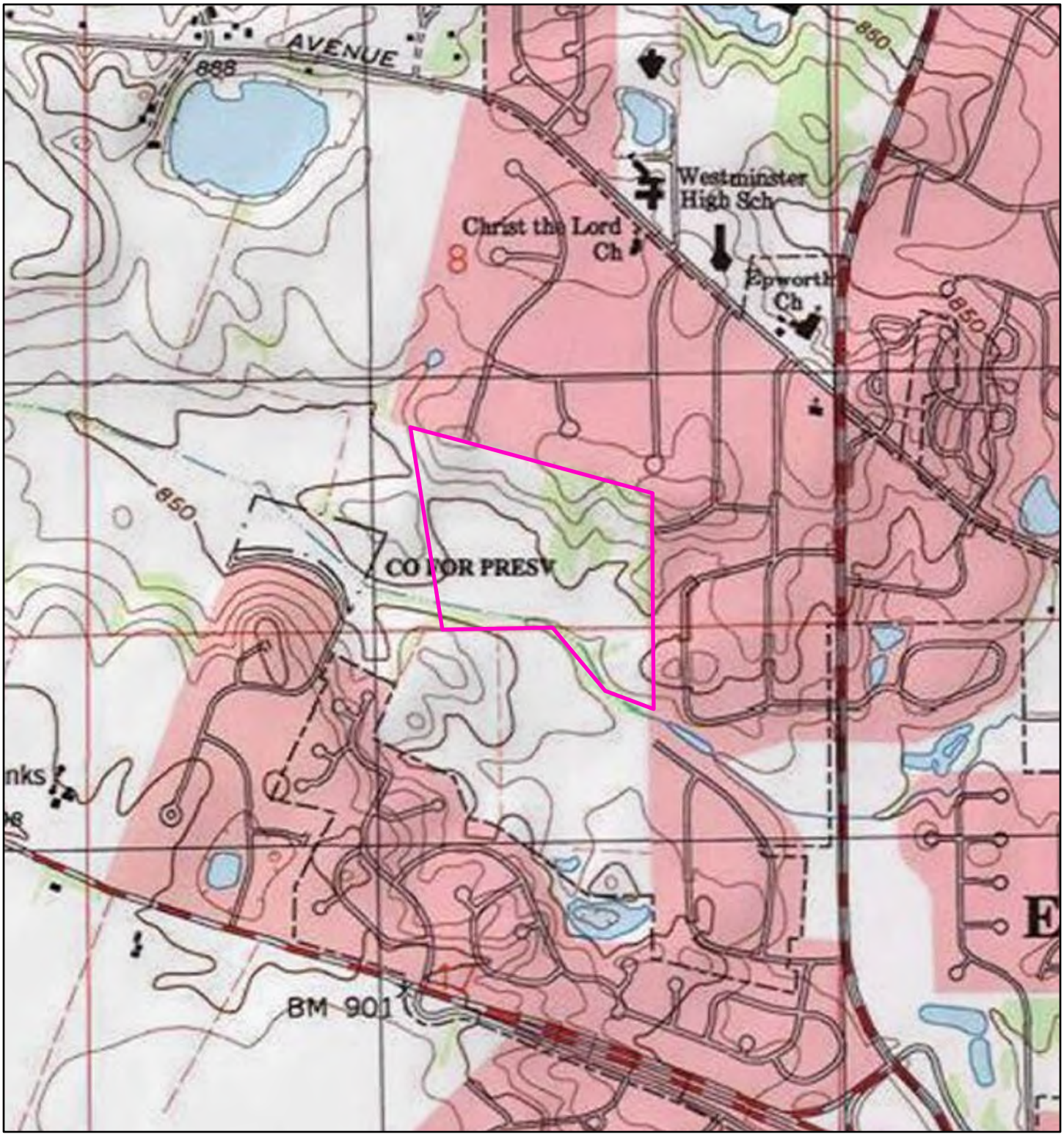
Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:

Project Location

Exhibit:

1



Scale:

0 1,000 Feet

Orientation:

Legend:

Project Boundary

Project Number: 25-0180

Date: 6/23/2025

Prepared by:

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

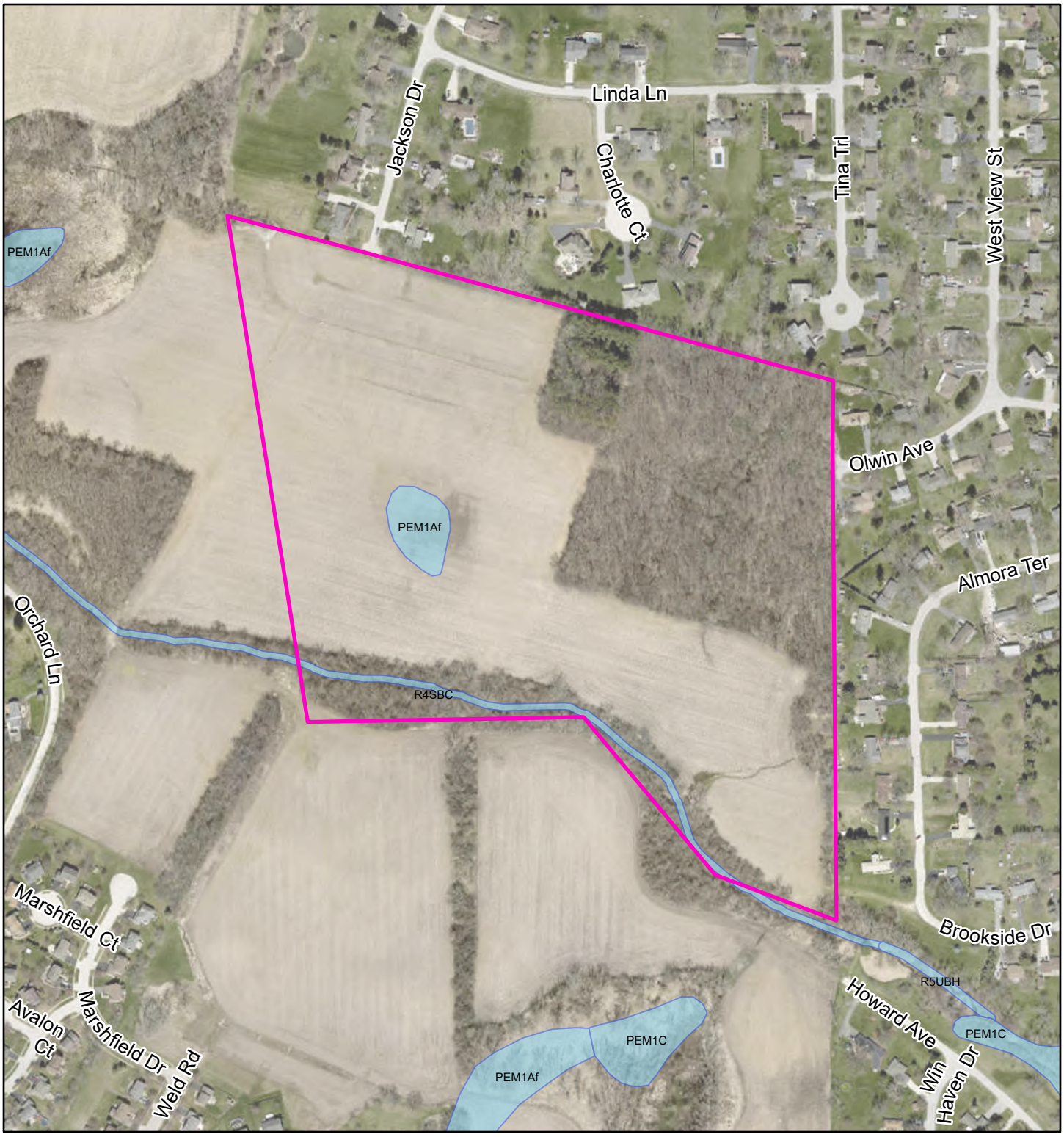
Project Name:
Tim Meyer - Ground-Mounted Solar Farm

Prepared for:
Equity Advisors Inc.

Location Information:
Elgin III Quadrangle

Exhibit Title:
USGS Topographic Map

Exhibit:
2



Scale:

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Orientation:

Legend:

Project Boundary

National Wetland Inventory

Project Name:
Tim Meyer - Ground-Mounted Solar Farm

Prepared for:
Equity Advisors Inc.

Project Number: 25-0180

Date: 6/23/2025

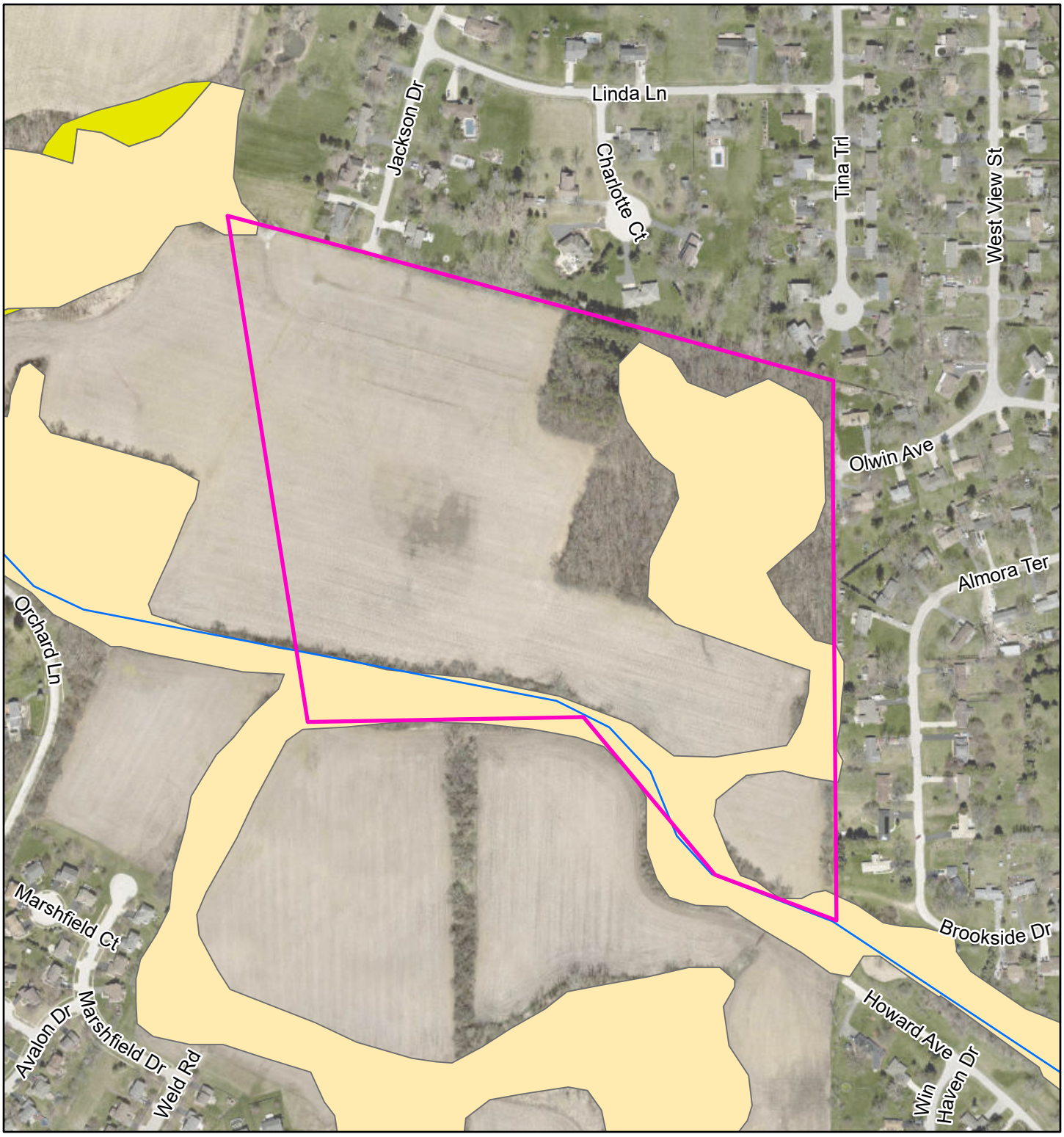
Prepared by:

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Location Information:
Elgin III Quadrangle

Exhibit Title:
National Wetland Inventory

Exhibit:
3



Scale:

0 400 Feet

Orientation:

Project Number: 25-0180

Date: 7/11/2025

Prepared by:

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Legend:

- Project Boundary
- ADID High Functional Value
- ADID High Habitat Value
- Farmed Wetland
- Wetland
- Lake High Quality
- Lake
- ADID High Quality River/Stream
- River/Stream

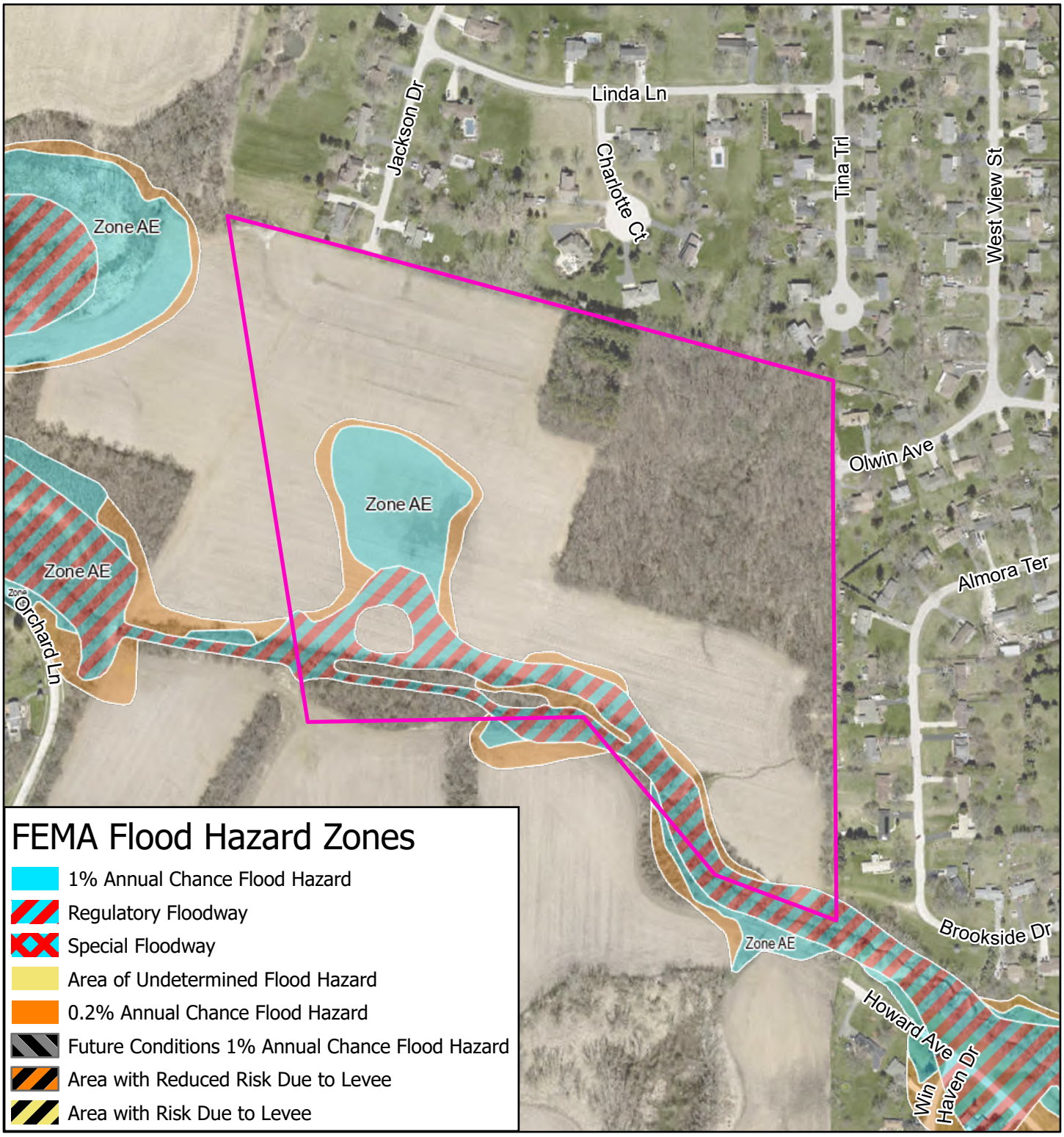
Project Name:
Tim Meyer - Ground-Mounted Solar Farm

Prepared for:
Equity Advisors Inc.

Location Information:
Elgin Township

Exhibit Title:
Kane County ADID Study

Exhibit:
4



Scale:

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Orientation:

Legend:

Project Boundary

Project Number: 25-0180

Date: 6/23/2025

Prepared by:

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

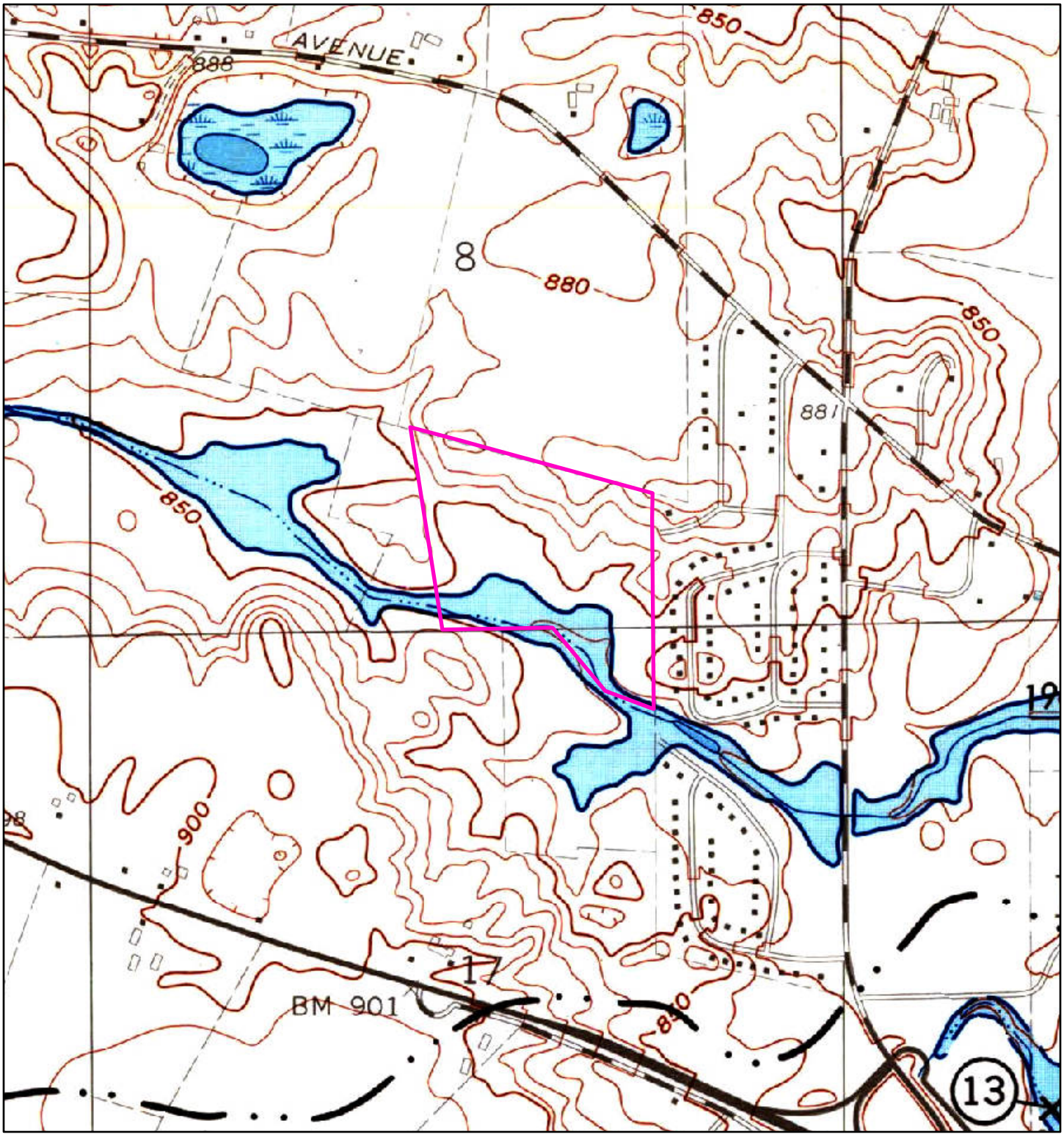
Project Name:
Tim Meyer - Ground-Mounted Solar Farm

Prepared for:
Equity Advisors Inc.

Effective Date:
8/3/2009

Exhibit Title:
FEMA Flood Hazard Zones

Exhibit:
5



Scale:

0 1,000 Feet

Orientation:

Legend:

Project Boundary

Project Number: 25-0180

Date: 6/23/2025

Prepared by:

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

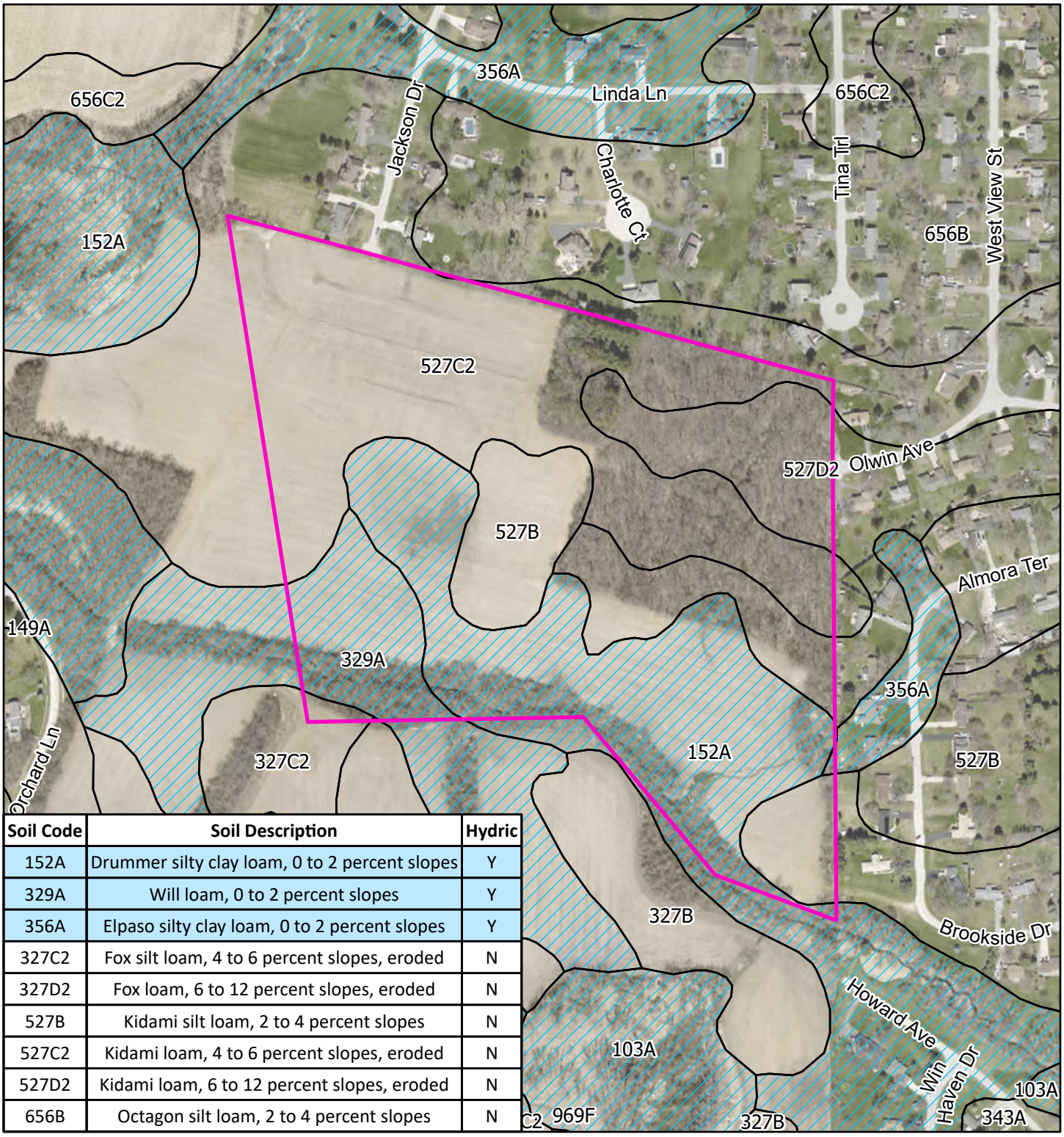
Project Name:
Tim Meyer - Ground-Mounted Solar Farm

Prepared for:
Equity Advisors Inc.

Hydrologic Atlas Date:
1965

Exhibit Title:
USGS Hydrologic Atlas

Exhibit:
6



Soil Code	Soil Description	Hydric
152A	Drummer silty clay loam, 0 to 2 percent slopes	Y
329A	Will loam, 0 to 2 percent slopes	Y
356A	Elpaso silty clay loam, 0 to 2 percent slopes	Y
327C2	Fox silt loam, 4 to 6 percent slopes, eroded	N
327D2	Fox loam, 6 to 12 percent slopes, eroded	N
527B	Kidami silt loam, 2 to 4 percent slopes	N
527C2	Kidami loam, 4 to 6 percent slopes, eroded	N
527D2	Kidami loam, 6 to 12 percent slopes, eroded	N
656B	Octagon silt loam, 2 to 4 percent slopes	N

Scale:

0 400 Feet

Project Number: 25-0180

Orientation:

Date: 6/23/2025

Legend:

Project Boundary

Soil Units

Hydric Soils

Prepared by:

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Project Name:
Tim Meyer - Ground-Mounted Solar Farm

Prepared for:
Equity Advisors Inc.

Soil Survey Date:
2019

Exhibit Title:
NRCS Kane Co. Soil Survey

Exhibit:
7

Scale:

0 300 Feet

Orientation:

Legend:

- Project Boundary
- Surveyed Waters Boundary
- Off-site Surveyed Waters Boundary

Project Name:
Tim Meyer - Ground-Mounted Solar Farm

Prepared for:
Equity Advisors Inc.

Project Number: 25-0180

Date: 7/30/2025

Aerial Date:
March 2025

Prepared by:

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:
Surveyed Waters Boundary

Exhibit:
8

The following plant species inventory, prepared by Hey and Associates, Inc., was prepared using the U.S. Army Corps of Engineers Chicago FQA Calculator Version 11, November 2017. It is cited as Herman, B., Sliwinski, R. and S. Whitaker. 2017. Chicago Region FQA (Floristic Quality Assessment) Calculator. U.S. Army Corps of Engineers, Chicago, IL.

The column labeled 'Species Name (NWPL/Mohlenbrock)' follows the taxonomical nomenclature of the National Wetland Plant List (Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2014. The National Wetland Plant List: 2014 Update of Wetland Ratings. Phytoneuron 2014-41: 1-42.), and Mohlenbrock, R. 2014. Vascular Flora of Illinois: A Field Guide, Fourth Edition. Southern Illinois University Press. Species not found in the NWPL, and Vascular Flora of Illinois follow the taxonomical nomenclature of Flora of the Chicago Region: A Floristic and Ecological Synthesis. Gerould Wilhelm & Laura Rericha. 2017. Indiana Academy of Science. Indianapolis, IN.

The column labeled 'Species(Synonym)' follows the taxonomical nomenclature of Swink, F. and Wilhelm, G. 1994. Plants of the Chicago Region, 4th Ed. The Indiana Academy of Science, Morton Arboretum, Lisle, IL, and Flora of the Chicago Region: A Floristic and Ecological Synthesis. Gerould Wilhelm & Laura Rericha. 2017. Indiana Academy of Science. Indianapolis, IN.

The column labeled 'Common Name' follows the common name lexicon of the National Wetland Plant List (Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2014. The National Wetland Plant List: 2014 Update of Wetland Ratings. Phytoneuron 2014-41: 1-42.) and Mohlenbrock, R. 2014. Vascular Flora of Illinois: A Field Guide, Fourth Edition. Southern Illinois University Press. For some species, Hey has substituted a more locally recognized common name.

The columns labeled 'Habit', 'Duration' and 'Nativity' follow information provided in the National Wetland Plant List (Lichvar, R. W. 2013. The National Wetland Plant List 2013 wetland ratings. Phytoneuron 2013-46:1-241; Kartesz, J.T. 2013. Floristic Synthesis of North America, Version 1.0 Biota of North America Program (BONAP). (in press)) and Swink, F. and Wilhelm, G. 1994. Plants of the Chicago Region, 4th Ed. The Indiana Academy of Science, Morton Arboretum, Lisle, IL.

In the tables provided here, each species is provided with its database acronym, its coefficient of conservatism (C value)(0 = weedy, 10 = conservative), its wetness coefficient (-2 = wet, +2 = dry), the corresponding National Wetland Category (OBL = obligate wetland species, FACW = facultative wetland, FAC - facultative species, FACU = facultative upland, UPL = upland species), and physiognomy (A = annual, B = biennial, P = perennial, W = woody, H = herbaceous), the plant habit (grass, forb, sedge, etc.), duration (annual, perennial, biennial), and nativity. Adventives include those species that have entered the region since European settlement and are therefore not integral to any pre-settlement community.

The information above the species list provides analysis of the vegetative quality of the site. It shows the total number of species present (species richness), the mean coefficient of conservatism (Mean C), the index (FQAI), and mean wetness; calculated separately for native species only and including the adventive species. The Mean C datum indicates the average coefficient of conservatism. The FQAI is derived by multiplying the Mean C by the square root of the number of species. If the FQAI of an area registers in the middle 30s or higher, one can be relatively certain that there is sufficient native character to be of rather profound environmental importance in terms of a regional natural area prospective. The wetness datum indicates the mean wetness coefficient for all species present, natives only and then with adventives. The table also provides the number of species in each physiognomic class, native versus adventive along with their percentage of the total inventory.

SITE: Tyler Creek Pointbars
LOCALE: Elgin Township, Kane County, Illinois
BY: J. Mengler
DATE: 6/20/2026

CONSERVATISM-BASED METRICS

MEAN C (NATIVE SPECIES)	2.78
MEAN C (ALL SPECIES)	1.79
MEAN C (NATIVE TREES)	n/a
MEAN C (NATIVE SHRUBS)	4.00
MEAN C (NATIVE HERBACEOUS)	2.63
FQAI (NATIVE SPECIES)	8.33
FQAI (ALL SPECIES)	6.68
ADJUSTED FQAI	22.27

ADDITIONAL METRICS

SPECIES RICHNESS (ALL)	14
SPECIES RICHNESS (NATIVE)	9
% NON-NATIVE	0.36
WET INDICATOR (ALL)	-0.79
WET INDICATOR (NATIVE)	-1.22
% HYDROPHYTE (MIDWEST)	0.86
% NATIVE PERENNIAL	0.36
% NATIVE ANNUAL	0.29
% ANNUAL	0.36
% PERENNIAL	0.57

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ARCMIN	*Arctium minus*	*ARCTIUM MINUS*	Lesser Burrdock	0	FACU	1	Forb	Biennial	Adventive
BIDFRO	*Bidens frondosa*	*Bidens frondosa*	Devil's-Pitchfork	1	FACW	-1	Forb	Annual	Native
BIDCOM	*Bidens tripartita*	*Bidens comosa; Bidens connata*	Three-Lobe Beggarticks	3	OBL	-2	Forb	Annual	Native
EQUARV	*Equisetum arvense*	*Equisetum arvense*	Field Horsetail	0	FAC	0	Fern	Perennial	Native
GLYSTR	*Glyceria striata*	*Glyceria striata var. stricta*	Fowl Manna Grass	4	OBL	-2	Grass	Perennial	Native
IMPCAP	*Impatiens capensis*	*Impatiens capensis*	Spotted Touch-Me-Not	3	FACW	-1	Forb	Annual	Native
LEEORY	*Leersia oryzoides*	*Leersia oryzoides*	Rice Cut Grass	3	OBL	-2	Grass	Perennial	Native

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
PACGLA	*Packera glabella*	*SENECIO GLABELLUS*	Cress-Leaf Groundsel	0	FACW	-1	Forb	Annual	Adventive
PHAARU	*Phalaris arundinacea*	*PHALARIS ARUNDINACEA*	Reed Canary Grass	0	FACW	-1	Grass	Perennial	Adventive
POACOM	*Poa compressa*	*POA COMPRESSA*	Flat-Stem Blue Grass	0	FACU	1	Grass	Perennial	Adventive
POAPRA	*Poa pratensis*	*POA PRATENSIS*	Kentucky Blue Grass	0	FAC	0	Grass	Perennial	Adventive
RANSCE	*Ranunculus sceleratus*	*Ranunculus sceleratus*	Cursed Buttercup	4	OBL	-2	Forb	Annual	Native
SAMCAN	*Sambucus nigra ssp. canadensis*	*Sambucus canadensis*	Elderberry	4	FAC	-1	Shrub	Perennial	Native
SANGRE	*Sanicula odorata*	*Sanicula gregaria*	Clustered Black-Snakeroot	3	FAC	0	Forb	Perennial	Native

SITE: Riparian Corridor along Tyler Creek (Waters 1)
LOCALE: Elgin Township, Kane County, Illinois
BY: J. Mengler
DATE: 6/3/2025

CONSERVATISM-BASED METRICS

MEAN C (NATIVE SPECIES)	2.41
MEAN C (ALL SPECIES)	1.56
MEAN C (NATIVE TREES)	3.00
MEAN C (NATIVE SHRUBS)	1.75
MEAN C (NATIVE HERBACEOUS)	2.45
FQAI (NATIVE SPECIES)	11.30
FQAI (ALL SPECIES)	9.09

ADDITIONAL METRICS

SPECIES RICHNESS (ALL)	34
SPECIES RICHNESS (NATIVE)	22
% NON-NATIVE	0.35
WET INDICATOR (ALL)	0.38
WET INDICATOR (NATIVE)	0.14
% HYDROPHYTE (MIDWEST)	0.59
% NATIVE PERENNIAL	0.62
% NATIVE ANNUAL	0.03
% ANNUAL	0.06
% PERENNIAL	0.91

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ACENEG	*Acer negundo*	*Acer negundo var. violaceum*	Box Elder	0	FAC	0	Tree	Perennial	Native
ALLPET	*Alliaria petiolata*	*ALLIARIA PETIOLATA*	Garlic-Mustard	0	FAC	0	Forb	Biennial	Adventive
AMBTRI	*Ambrosia trifida*	*Ambrosia trifida*	Great Ragweed	0	FAC	0	Forb	Annual	Native
ANGATR	*Angelica atropurpurea*	*Angelica atropurpurea*	Purple-Stem Angelica	7	OBL	-2	Forb	Perennial	Native
CONSEP	*Calystegia sepium*	*Convolvulus sepium*	Hedge False Bindweed	1	FAC	0	Forb	Perennial	Native
CAROVT	*Carya ovata*	*Carya ovata*	Shag-Bark Hickory	5	FACU	1	Tree	Perennial	Native
CELORB	*Celastrus orbiculatus*	*CELASTRUS ORBICULATUS*	Asian Bittersweet	0	UPL	2	Vine	Perennial	Adventive

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
CIRLUT	*Circaea canadensis*	*Circaea lutetiana canadensis*	Broad-Leaf Enchanter's-Nightshade	3	FACU	1	Forb	Perennial	Native
CORRAC	*Cornus racemosa*	*Cornus racemosa*	Gray Dogwood	1	FAC	0	Shrub	Perennial	Native
EQUARV	*Equisetum arvense*	*Equisetum arvense*	Field Horsetail	0	FAC	0	Fern	Perennial	Native
POLSCA	*Fallopia scandens*	*Polygonum scandens; Fallopia cristata*	Climbing Black-Bindweed	3	FAC	0	Vine	Perennial	Native
FRAPEN	*Fraxinus pennsylvanica*	*Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata*	Green Ash	4	FACW	-1	Tree	Perennial	Native
GEUCAN	*Geum canadense*	*Geum canadense*	White Avens	1	FAC	0	Forb	Perennial	Native
HACVIR	*Hackelia virginiana*	*Hackelia virginiana*	Beggar's-Lice	1	FACU	1	Forb	Perennial	Native
HESMAT	*Hesperis matronalis*	*HESPERIS MATRONALIS*	Dame's Rocket	0	FACU	1	Forb	Perennial	Adventive
LAPCAN	*Laportea canadensis*	*Laportea canadensis*	Canadian Wood-Nettle	5	FACW	-1	Forb	Perennial	Native
LEOCAR	*Leonurus cardiaca*	*LEONURUS CARDIACA*	Motherwort	0	UPL	2	Forb	Perennial	Adventive
LONMAA	*Lonicera maackii*	*LONICERA MAACKII*	Amur Honeysuckle	0	UPL	2	Shrub	Perennial	Adventive
MORALB	*Morus alba*	*MORUS ALBA VAR. TATARICA*	White Mulberry	0	FAC	0	Tree	Perennial	Adventive
OSMLON	*Osmorhiza longistylis*	*Osmorhiza longistylis*	Aniseroot	5	FACU	1	Forb	Perennial	Native
PACGLA	*Packera glabella*	*SENECIO GLABELLUS*	Cress-Leaf Groundsel	0	FACW	-1	Forb	Annual	Adventive
PARQUI	*Parthenocissus quinquefolia*	*Parthenocissus quinquefolia*	Virginia-Creeper	4	FACU	1	Vine	Perennial	Native
PHAARU	*Phalaris arundinacea*	*PHALARIS ARUNDINACEA*	Reed Canary Grass	0	FACW	-1	Grass	Perennial	Adventive
PRUSER	*Prunus serotina*	*Prunus serotina*	Black Cherry	0	FACU	1	Shrub	Perennial	Native
PYRCAL	*Pyrus calleryana*	*PYRUS CALLERYANA*	Ornamental Pear	0	UPL	2	Tree	Perennial	Adventive
RHACAT	*Rhamnus cathartica*	*RHAMNUS CATHARTICA*	European Buckthorn	0	FAC	0	Shrub	Perennial	Adventive
RIBMIS	*Ribes missouriense*	*Ribes missouriense*	Missouri Gooseberry	2	UPL	2	Shrub	Perennial	Native
ROSMUL	*Rosa multiflora*	*ROSA MULTIFLORA*	Multiflora Rose	0	FACU	1	Shrub	Perennial	Adventive
SALFRA	*Salix X fragilis*	*SALIX FRAGILIS; SALIX X RUBENS*	Crack Willow	0	FAC	2	Tree	Perennial	Adventive
SAMCAN	*Sambucus nigra ssp. canadensis*	*Sambucus canadensis*	Elderberry	4	FAC	-1	Shrub	Perennial	Native
SANGRE	*Sanicula odorata*	*Sanicula gregaria*	Clustered Black-Snakeroot	3	FAC	0	Forb	Perennial	Native
SOLALT	*Solidago altissima*	*Solidago altissima*	Tall Goldenrod	1	FACU	1	Forb	Perennial	Native
RHURAD	*Toxicodendron radicans*	*Rhus radicans*	Eastern Poison-Ivy	2	FAC	0	Vine	Perennial	Native
VITRIP	*Vitis riparia*	*Vitis riparia var. syrticola*	River-Bank Grape	1	FACW	-1	Vine	Perennial	Native

Photograph 1:

Typical view of Tyler Creek (Waters 1) channel at the south end of project site.

Photograph 2:

Typical view of Tyler Creek (Waters 1) channel along the south border of project site.

Photograph 3:

View east along edge of Waters 1 near southern project site border.

Photograph 4:

View northeast across site and across area of Potential Farmed Wetland 2.

Photograph 5:

View south toward location Potential Farmed Wetland 1.

Photograph 6:

View north along the eastern project site border that was formerly wooded.

Project Number: 25-0180

Project Name:
Tim Meyer – Ground-Mounted Solar Farm

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:
WETS Table – Elgin Water

Exhibit:
11

WETS Station: ELGIN WATER, IL
Requested years: 1995 - 2025

Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	30.3	14.6	22.4	1.87	1.17	2.26	5	10.4
Feb	34.4	16.6	25.5	1.8	1	2.19	5	7.5
Mar	46.7	26.8	36.8	2.38	1.46	2.88	6	3.1
Apr	58.6	36.9	47.8	3.83	2.83	4.49	8	0.7
May	70.2	48.3	59.3	5.14	3.6	6.1	9	0
Jun	80.4	58.7	69.5	4.43	3.04	5.29	7	0
Jul	84.2	63.4	73.8	4.16	2.72	5	6	0
Aug	82.6	61.7	72.2	4.41	2.87	5.3	6	0
Sep	76.4	53.3	64.8	3.44	1.98	4.19	6	0
Oct	63.1	41.5	52.3	3.37	2.05	4.08	6	0
Nov	48	30.3	39.2	2.27	1.45	2.73	5	1.4
Dec	35.8	20.5	28.1	2.23	1.57	2.64	5	6.8
Annual:					36.01	43.81		
Average	59.2	39.4	49.3	-	-	-	-	-
Total	-	-	-	39.33			74	30

GROWING SEASON DATES

Years with missing data:	24 deg = 2	28 deg = 2	32 deg = 1
Years with no occurrence:	24 deg = 0	28 deg = 0	32 deg = 0
Data years used:	24 deg = 29	28 deg = 29	32 deg = 30
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	4/1 to 11/12: 225 days	4/14 to 10/27: 196 days	4/28 to 10/18: 173 days
70 percent *	3/28 to 11/17: 234 days	4/9 to 11/1: 206 days	4/24 to 10/22: 181 days

* Percent chance of the growing season occurring between the Beginning and Ending dates.

STATS TABLE - total precipitation (inches)

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl	
1995	M3.27	0.08	2.4	5.82	5.35	1.71	4.62	5.18	1.9	5.11	4.14	M0.65	40.23	normal
1996	M1.10	1.02	0.67	2.43	8.7	5.51	3.82	5.68	2.27	2.02	M1.37	1.71	36.3	normal
1997	M0.60	M5.62	2.04	1.64	5.57	2.8	1.52	M4.73	1.98	2.26	M1.33	M1.29	31.38	dry
1998	3.64	1.56	2.17	5.07	3.81	5.27	1.82	4.46	3.11	6.27	1.94	1.8	40.92	normal
1999	M3.04	1.44	M0.23	8.53	3.38	M6.51	3.68	1.8	5.01	1.31	0.63	2.3	37.86	normal
2000	M1.03	M0.91	1.6	4.36	4.5	6.16	4.42	3.22	5.71	1.74	4.65	2.54	40.84	normal
2001	1.43	2.73	1.18	3.42	4.24	3.86	1.19	4.13	6	7.53	1.93	1.49	39.13	normal
2002	1.51	M1.26	2.24	3.66	4.89	5.56	1.54	10.21	1.89	1.92	0.93	1.2	36.81	normal
2003	0.37	0.2	1.49	2.35	8.46	1.58	3.53	2.07	1.8	1.92	5.46	2.85	32.08	dry
2004	0.68	0.87	4.97	1.73	8.6	4.11	2.51	3.98	0.72	2.66	3.09	2.48	36.4	normal
2005	M3.03	1.71	0.94	2.62	2.51	0.46	1.39	3.71	2.01	0.78	2.71	1	22.87	dry
2006	3.12	1.29	3.64	3.41	4.76	4.39	3.75	3.3	4.28	4.46	2.78	2.97	42.15	normal
2007	1.75	1.89	3.4	3.91	2.52	2.93	5.91	15.69	0.77	3.28	1.01	3.2	46.26	wet
2008	1.92	3.92	1.89	4.53	3.84	4.45	4.31	3.74	11.48	2.41	1.17	5.22	48.88	wet
2009	1.17	2.45	5.08	5.31	4.18	6.17	2.44	6.57	0.7	5.85	1.69	3.78	45.39	wet
2010	1.2	1.29	M0.29	M2.92	6.12	4.21	8.98	2.84	4.05	M0.58	M1.21	M1.43	35.12	dry
2011	M1.21	3.27	2.73	M5.62	8.22	M4.45	M5.76	M6.27	M4.49	M1.76	M4.14	M3.08	51	wet
2012	1.42	M0.76	1.82	3.13	1.57	2.66	2.75	2.81	2.09	4.03	0.69	2.77	26.5	dry
2013	3.51	3.01	2.19	7.42	2.96	3.86	3	2.7	4.02	1.79	3.17	M1.14	38.77	normal
2014	2.18	1.81	1.31	2.72	M5.46	5.89	4.02	6.77	3.3	2.97	1.39	1.19	39.01	normal
2015	1.56	1.45	1.28	3.14	5.18	M8.35	5.74	3.1	5.48	1.39	4.81	M5.50	46.98	wet
2016	M0.34	1.14	3.3	3.04	6.49	3.86	4.59	3.58	2.24	3.58	2.38	1.85	36.39	normal
2017	M2.83	0.9	4.94	4.57	5.48	5.45	9.69	2.14	0.58	7.78	1.92	0.9	47.18	wet
2018	1.28	4.67	1.51	2.06	9.79	9.21	2.77	5.81	3.84	5.44	M3.20	2.06	51.64	wet
2019	2.97	M3.41	2.32	4.69	8.76	3.74	3.3	3.23	8.89	5.9	1.95	2.02	51.18	wet
2020	2.76	0.68	3.69	5.06	8.9	5.44	4.21	0.7	5.47	3.42	M2.11	M2.01	44.45	wet
2021	1.78	1.07	1.28	1.13	1.76	5.68	1.09	3.94	1.48	M7.02	0.83	M2.36	29.42	dry
2022	M0.62	M2.30	3.28	M3.67	5.73	2.74	9.3	5.76	2.43	M1.81	1.01	2.17	40.82	normal
2023	2.67	4.2	2.82	4.24	1.46	2.46	8.43	1.66	3.27	3.07	1.04	2.6	37.92	normal
2024	3.49	0.93	3.92	3.23	4.04	6.48	4.83	2.47	2.03	1.02	3.38	1.24	37.06	normal
2025	0.52	1.64	3.23	2.28	2.14	M1.50							11.31	

Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.
Data missing for all days in a month or year is blank.
Creation date: 2025-06-26

Coordinates	42.044579, -88.348633
Observation Date	2025-06-20
Elevation (ft)	851.081
Drought Index (PDSI)	Moderate drought (2025-05)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-06-20	3.20315	5.328347	1.535433	Dry	1	3	3
2025-05-21	3.498425	5.714173	2.145669	Dry	1	2	2
2025-04-21	2.677953	3.939764	2.566929	Dry	1	1	1
Result							Drier than Normal - 6

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ELGIN WATER	42.0628, -88.2861	745.079	3.446	106.002	1.916	11209	89
ELGIN 1.1 NNE	42.0557, -88.2829	786.089	0.517	41.01	0.254	0	1
ELGIN 1.9 NE	42.0606, -88.264	807.087	1.144	62.008	0.586	5	0
ELGIN 0.9 WSW	42.0366, -88.3056	830.053	2.068	84.974	1.106	14	0
ELGIN 2.3 WNW	42.0531, -88.3294	824.147	2.32	79.068	1.227	14	0
ELGIN 1.0 S	42.0256, -88.2885	777.887	2.573	32.808	1.242	17	0
STREAMWOOD	42.0256, -88.1783	818.898	6.099	73.819	3.195	76	0
ELK GROVE VILLAGE	42.0033, -88.0069	700.131	14.907	44.948	7.378	4	0
MCHENRY STRATTON LOCK/DAM	42.3097, -88.2533	735.892	17.142	9.187	7.871	14	0

U.S. Army Corps of Engineers (USACE)

RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-COR.

Form Approved -
OMB No. 0710-0024
Expires: 2027-09-30

The Agency Disclosure Notice (ADN)

The Public reporting burden for this collection of information, 0710-0024, is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: 25-0180	Site Name: Tim Meyer - Tyler Creek	Date and Time: 6/20/2025
Location (lat/long): 42.043092, -88.348350	Investigator(s): J. Mengler	

Step 1 Site overview from remote and online resources.
Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [ ] satellite imagery
- [x] land use maps
- [x] aerial photos
- [x] topographic maps
- [x] Other: NWI, ADID, etc

Describe land use and flow conditions from online resources.
Were there any recent extreme events (floods or drought)?
USACE APT analysis shows normal precipitation in period prior to field investigation.

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc.

No unusual or recent changes observed during summer 2025.

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.
OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM. Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic indicators

- [x] **Break in slope**
  - [x] *on the bank*
  - [ ] *undercut bank*
  - [ ] *valley bottom*
  - [ ] Other: _____
- [x] **Shelving**
  - [x] *shelf at top of bank*
  - [ ] *natural levee*
  - [ ] *human-made berms or levees*
  - [ ] *other berms:* _____
- [ ] **Secondary channels**
- [ ] **Channel bar**
  - [ ] *shelving (berms) on bar*
  - [ ] *unvegetated*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar*
- [ ] **Instream bedforms and other bedload transport evidence**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.)*
  - [ ] *Weathered clasts or bedrock*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*

Sediment indicators

- [ ] **Soil development**
- [ ] **Changes in character of soil**
- [ ] **Mudcracks**
- [ ] **Changes in particle-sized distribution**
  - [ ] *transition from* _____ to _____
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits*

Vegetation indicators (*Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain*)

- [ ] **Change in vegetation type from** _____ **to** _____
- [x] **Change in density of vegetation**
- [ ] **Exposed roots below intact soil layer**
- [ ] **Vegetation matted down and/or bent**
- [ ] **Other vegetation observations**

_____

Other physical indicators

- [ ] **Sediment deposited on vegetation or structures**
- [ ] **Wracking/presence of organic litter**
- [ ] **Presence of large wood**
- [ ] **Leaf litter disturbed or washed away**
- [ ] **Water staining**

Other observed indicators? Describe:

Project ID #: 24-0150

Step 4 Was additional information used to support identification of the OHWM? ☐ Yes ☒ No

If yes, describe and attach information to data sheet:

Step 5 Is an OHWM present at this site? ☒ Yes ☐ No

Describe rationale for location of OHWM or lack thereof by describing any observed indicators (at, above, and/or below the OHWM location).

OHWM was largely at top of near vertical or steep banks, and shelf where vegetation changes to upland vegetation.

Additional observations or notes

Attach an imagery log of the site.

Imagery log attached? ☒ Yes ☐ No If no, explain why not: See photos in delineation report as Exhibit 9

List photographs, or other imagery/sketches, and include descriptions in the table below.

Number photographs in the order that they are taken. Attach imagery and include annotations of features.

Imagery Number	Imagery description

OHWM Field Identification Data Sheet Instructions and Field Procedure

Step 1 Site overview from remote and online resources (Chapter 5) **Complete Step 1 prior to site visit.**

Online Resources: Identify what information is available for the site. Check boxes on data sheet next to the resources used to assess this site.

a. gage data
b. aerial photos
c. satellite imagery
d. LiDAR
e. topographic maps
f. geologic maps
g. land use maps
h. climatic data (precipitation and temperature)

Landscape context: Use the online resources to put the site in the context of the surrounding landscape. (Chapter 4)

a. **Note on the data sheet under Step 1:**
   i. Overall land use and change if known
   ii. Recent extreme events if known (e.g., flood, drought, landslides, debris flows, wildfires)
   iii. Erosional and depositional environments
b. Consider the following to inform weighting of evidence observed during field visit.
   i. What physical characteristics are likely to be observed in specific environments?
   ii. Was there a recent flood or drought? Are you expecting to see recently formed or obscured indicators?
   iii. How will land use affect specific stream characteristics? How natural is the hydrologic regime? How stable has the landscape been over the last year, decade, century?

Step 2 Site conditions during the field assessment (assemble evidence) (Chapter 1 and 3)

a. Identify the assessment area.
b. Walk up and down the assessment area noting all the potential OHWM indicators.
c. Note broad trends in channel shape, vegetation, and sediment characteristics.
   i. Is this a single thread or multi-thread system? Is this a stream-wetland complex?
   ii. Are there any secondary and/or floodplain channels?
   iii. Are there obvious human-made alterations to the system?
   iv. Are there man-made (e.g., bridges, dams, culverts) or natural structures (e.g., bedrock outcrops, Large Wood jams) that will influence or control flow?
d. Look for signs of recurring fluvial action.
   i. Where does the flow converge on the landscape?
   ii. Are there signs of fluvial action (sediment sorting, bedforms, etc.) at the convergence zone?
e. Look for indicators on both banks. If the opposite bank is not accessible, then look across the channel at the bank.
f. **In Step 2 of the data sheet,** describe any adjacent land use or flow conditions that may influence interpretation of each line of evidence.
   i. What land use and flow conditions may be affecting your ability to observe indicators at the site?
   ii. What recent extreme events may have caused changes to the site and affected your ability to observe indicators?

Step 3a List evidence (Chapter 2 and 3)

Assemble evidence by marking each box with a slash next to each line of evidence.

If using fillable form, then follow the instructions for filling in the fillable form.

Context is important when assembling evidence. For instance, pool development may be an indicator of interest on the bed of a dry stream, but may not be a useful indicator to take note of in a flowing stream. On the other hand, if the pool is found in a secondary channel adjacent to the main channel, it could provide a line of evidence for a minimum elevation of high flows. Therefore, consider the site context when deciding which indicators provide evidence for identifying the OHWM. Explain reasoning in Step 5.

Questions to consider while making observations and listing evidence at a site:

Geomorphic indicators	**Sediment and soil indicators**	**Vegetation indicators**	**Other physical indicators**
Where are the breaks in slope?	Where does evidence of soil formation appear?	Where are the significant transitions in vegetation species, density, and age?	Is there organic litter present?
Are there identifiable banks?			
Is there an easily identifiable top of bank?	Are there mudcracks present?	Is there vegetation growing on the channel bed?	Is there any leaf litter disturbed or washed away?
Are the banks actively eroding?		If no, how long does it take for the non-tolerant vegetation to establish relative to how often flows occur in the channel?	
Are the banks undercut?	Is there evidence of sediment sorting by grain size?		
Are the banks armored?		Where are the significant transitions in vegetation?	Is there large wood deposition?
Is the channel confined by the surrounding hillslopes?			
Are there natural or man-made berms and levees?		Is the vegetation tolerant of flowing water?	
Are there fluvial terraces?		Has any vegetation been flattened by flowing water?	Is there evidence of water staining?
Are there channel bars?			

Are the following features of fluvial transport present?

Evidence of erosion: obstacle marks, scour, armoring
Bedforms; riffles, pools, steps, knickpoints/headcuts
Evidence of deposition: imbricated clasts, gravel sheets, etc.

In some cases, it may be helpful to explain why an indicator was NOT at the OHWM elevation, but found above or below. It can also be useful to note if specific indicators (e.g., vegetation) are NOT present. For instance, note if the site has no clear vegetation zonation.

Step 3b Weight each line of evidence (Chapter 1 and 3)

Consider importance of each indicator by assessing the following:

a. Relevance:

i. Is this indicator left by low, high, or extreme flows? Did recent extreme events and/or land use affect this indicator?

ii. Consider the elevation of the indicator relative to the channel bed. What is the current flow level based on season or nearby gages?

iii. Consider the elevation of the indicator relative to the current flow. If the stream is currently at baseflow and indicator is adjacent to that, then it is likely a low-flow indicator. The difference between high-and extreme-flow indicators can sometimes be difficult to determine.

***Landscape context from Step 1 (Chapter 4) can help determine the relevance, strength, and reliability of the indicators observed in the field.**

***In Chapter 2 of the OHWM field manual provides information on specific indicators that can assist in putting these in context and determining relevance, strength, and reliability.**

iv. Recent floods may have left many extreme-flow indicators, or temporarily altered channel form. Other resources will likely be needed to support any OHWM identification at this site. Field evidence of the OHWM may have to wait for the site to recover from the recent flood.

v. Droughts may cause field evidence of OHWM to be obscured because there has been an extended time since the last high-flow event. There can be overgrowth of vegetation or deposition of material from surrounding landscape that can obscure indicators.

vi. Both human-made (e.g., dams, construction, mining activities, urbanization, agriculture, grazing) and natural (e.g., fires, floods, debris flows, beaver dams) disturbances can alter how indicators are expected to appear at a site. Chapter 6 and Chapter 7 of the OHWM field manual provide specific case-studies that can help in interpreting evidence at these sites.

b. Strength:

i. Is this indicator persistent across the landscape?

1. Look up and downstream and across the channel to see if you see the same indicator at multiple locations.
2. Does the indicator occur at the same elevation as other indicators?

c. Reliability:

i. Is this indicator persistent on the landscape over time? Will this indicator still persist across seasons?

1. This can be difficult to determine for some indicators and may be specific to climatic region (in terms of persistence of vegetation) and history of land use or other natural disturbances.
2. Chapter 2, Chapter 6, and Chapter 7 of the OHWM field manual describe each indicator in detail and provide examples of areas where indicators are difficult to interpret.

Step 4 Was additional information used to support identification of the OHWM? Are other resources used to support the lines of evidence observed in the field?

a. If additional resources are needed, then repeat steps 3a and 3b for the resources selected in Step 1 of assembling and weighting evidence collected from online resources. Chapter 5 of the OHWM field manual provides information on using online resources.

b. Any data collected from online tools have strengths and weaknesses. Make sure these are clear when determining relevance, strength, and reliability of the remotely collected data. Clearly describe why other resources were used to support the lines of evidence observed in the field, as well as the relevance, strength, and reliability of the supporting data and/or resources.

c. Attach any remote data and data analysis to the data sheet.

Step 5 Describe rationale for location of OHWM: (Chapter 1 and Chapter 3)

a. Weigh body of evidence:

Combine information from Step 3b: Why do the combination of indicators represent the OHWM?

i. Integrate the lines of evidence (relevance, strength, and reliability) of each indicator.

ii. Consider which indicators are high value indicators that co-occur along the stream reach. Which indicators are most relevant to identifying high flow elevations, which are most persistent across the landscape, and which are most persistent over time?

iii. Which indicators that are found above and below the location of the OHWM were helpful in identifying the elevation of the OHWM?

b. If there is more than one possible location, explain why, Include any relevant discussion on why specific indicators were not included in the final decision.

c. If needed, add additional site notes on page 2 of the data sheet under Step 5 or attach additional sketches and field observations to the data sheet.

d. Take photographs of indicators and attach an imagery log using page 2 of data sheet or another method of logging images.

i. Annotate images with descriptions of indicators.