KENDALL COUNTY
ZONING BOARD OF APPEALS
PUBLIC HEARING/MEETING
111 West Fox Street • Rooms 209 and 210 • Yorkville, IL • 60560
(630) 553-4141 Fax (630) 553-4179

AGENDA

May 28, 2024 – 7:00 p.m.

CALL TO ORDER – ZONING BOARD OF APPEALS

ROLL CALL for the Zoning Board of Appeals: Randy Mohr (Chair); Scott Cherry, Cliff Fox, Tom LeCuyer, Jillian Prodehl, Dick Thompson, and Dick Whitfield

MINUTES: Approval of Minutes from the April 29, 2024, Zoning Board of Appeals Hearing/Meeting (Pages 3-10)

PETITIONS:

1. **Petition 24 – 09 – Tim O'Brien on Behalf of Seward Township (Pages 11-61)**
Request: Major Amendment to the Special Use Permit for a Governmental Building and Facility Granted by Ordinance 2009-31 by Changing the Site Plan
PIN: 09-17-400-005
Location: 14719 O'Brien Road, Minooka in Seward Township
Purpose: Petitioner Wants to Construct a Building Addition and Related Infrastructure; Property is Zoned A-1 with a Special Use Permit

2. **Petition 24 – 14 – Tim O'Brien on Behalf of Seward Township (Pages 62-84)**
Request: Amendment to the Future Land Use Map Contained in the Land Resource Management Plan by Adopting a New Future Land Use Map for Seward Township and Related Text Changes
Location: Seward Township
Purpose: Petitioner Wants to Adopt a New Future Land Use Map for Seward Township

3. **Petition 24 – 10 – Alex M. Schuster**
Request: Special Use Permit for a Landscaping Business
PIN: 03-22-400-001
Location: 2142 Wooley Road, Oswego in Oswego Township
Purpose: Petitioner Would Like to Operate a Landscaping Business; Property is Zoned A-1

4. **Petition 24 – 11 – James W. Filotto on Behalf of Oakland Avenue Storage, LLC (Page 85)**
Request: Map Amendment Rezoning the Subject Property from A-1 Agricultural District to B-3 Highway Business District
PIN: 09-13-400-011
Location: Between 276 and 514 Route 52, Minooka in Seward Township
Purpose: Petitioner Wants to Rezone the Property in Order to Operate a Construction/Contractor's Office

5. **Petition 24 – 13 – James C. Marshall on Behalf of TurningPointEnergy, LLC Through TPE IL KE240 (Tenant) and Frank J. Santoro (Owner) (Pages 86-569)**
Request: Special Use Permit for a Commercial Solar Energy Facility and Variance to Section 7:01.D.17.a of the Kendall County Zoning Ordinance to Allow a Commercial Solar Energy Facility on Land within One Point Five (1.5) Miles of Municipality without an Annexation Agreement
PIN: 03-26-300-006
Location: East of 2025 Simons Road, Oswego in Oswego Township
Purpose: Petitioner Would Like to Install a Commercial Solar Energy Facility; Property is Zoned A-1

NEW BUSINESS/ OLD BUSINESS
None

REVIEW OF PETITIONS THAT WENT TO COUNTY BOARD
1. Petition 24-04 Site Plan Approval for New YMCA

PUBLIC COMMENT:

ADJOURN ZONING BOARD OF APPEALS- Next hearing/meeting on July 1, 2024

If special accommodations or arrangements are needed to attend this County meeting, please contact the Administration Office at 630-553-4171, a minimum of 24-hours prior to the meeting time.

MINUTES – UNOFFICIAL UNTIL APPROVED
KENDALL COUNTY
ZONING BOARD OF APPEALS MEETING
111 WEST FOX STREET, COUNTY BOARD ROOM (ROOMS 209 and 210)
YORKVILLE, IL 60560
April 29, 2024 – 7:00 p.m.

CALL TO ORDER
Chairman Randy Mohr called the Zoning Board of Appeals meeting to order at 7:03 p.m.

ROLL CALL:
Members Present: Cliff Fox, Tom LeCuyer, Randy Mohr, Jillian Prodehl, and Dick Thompson,
Members Absent: Scott Cherry and Dick Whitfield
Staff Present: Matthew Asselmeier, AICP, CFM, Director and Wanda Rolf, Administrative Assistant
Others Present: Dan Kramer and Steve Grebner

MINUTES:
Member LeCuyer made a motion, seconded by Member Fox, to approve the minutes of the March 4, 2024, hearing/meeting.

With a voice vote of five (5) ayes, the motion carried.

The Zoning Board of Appeals started their review of Petition 24-06 at 7:03 p.m.

Petition	**24 – 06 – Jerry Styrczula on Behalf of A&D Properties, LLC**
Request:	Map Amendment Rezoning the Subject Property from B-3 Highway Business District to M-1 Limited Manufacturing District
PINs:	05-09-300-015
Location:	7789 Route 47, Yorkville in Kendall Township
Purpose:	Petitioner Wants to Rezone the Property in Order to Operate a Trucking Business

Mr. Asselmeier summarized the request.

A&D Properties, LLC would like a map amendment rezoning approximately sixteen point four more or less (16.4 +/-) acres located on the west side of Route 47 addressed as 7789 Route 47 from B-3 Highway Business District to M-1 Limited Manufacturing District in order to operate a trucking business for the sale and storage of semi-trailers, small trailers, semi-tractors, and similar uses at the subject property.

The application materials and pictures of the property were provided.

The property has been zoned B-3 since 1975. The ordinance rezoning the property to B-3 was provided. The property was previously used as a distributorship for International Harvester.

The plat of survey was provided.

If the map amendment is approved and if the Petitioner wants to make changes to the site, site plan approval will be required. To date, the Petitioner was working on a site plan proposal.

The property is addressed as 7789 Route 47, Yorkville.

The property is approximately sixteen (16) acres in size.

The current land use is Vacant and Improved Commercial.

The property is zoned B-3 Highway Business District.

The County's Future Land Use Map calls for this property to be Mixed Use Business. Yorkville Future Land Use Map calls for the property to be Estate/Conservation Residential.

Route 47 is a State maintained Arterial Road.

There are no trails planned in this area.

There are no floodplains or wetlands on the property.

The adjacent land uses are Improved Commercial, Single-Family Residential, Agricultural, and Vacant Manufacturing.

The adjacent properties are zoned A-1 and M-1 in the unincorporated area and R-2 and R-3 inside Yorkville.

The County's Future Land Use Map calls for the area to be Rural Residential and Mixed Use Business. Yorkville's Future Land Use Map calls for the area to be Agricultural, Suburban Neighborhoods, and Estate/Conservation Residential.

The properties within one point five (1.5) miles are zoned A-1, A-1 SU, R-1, R-4, B-3, and M-1 in the County and R-2, R-3, B-1, and B-3 in Yorkville.

The A-1 special use permit to the north is for a landscaping business.

EcoCAT Report submitted and consultation was terminated.

The application for NRI was submitted on March 12, 2024. The LESA Score was 157 indicating a low level of protection. The NRI Report was provided.

Petition information was sent to Kendall Township on March 20, 2024. The Kendall Township Planning Commission reviewed the proposal on April 15, 2024, and recommended approval of the proposal. The Kendall Township Board reviewed the proposal on April 16, 2024, and concurred with the Kendall Township Planning Commission. The email from the Township was provided.

Petition information was sent to the United City of Yorkville on March 20, 2024. Yorkville will be reviewing the proposal at their May meetings.

Petition information was sent to the Bristol-Kendall Fire Protection District on March 20, 2024.

ZPAC reviewed the proposal at their meeting on April 2, 2024. Discussion occurred regarding the semis already parked at the property and restricting semis on Conservation Drive. Site plan approval will be required and they will need to comply with the M-1 zoning regulations, if the map amendment is approved. ZPAC recommended approval by a vote of seven (7) in favor and (0) in opposition, with three (3) members absent. The minutes of the meeting were provided.

The Kendall County Regional Planning Commission reviewed the proposal at their meeting on April 24, 2024. It was noted that the subject property had been recently reclassified as Mixed Use Business on the Future Land Use Map. Trucks will not be allowed to access the property via Conservation Drive, per agreement between the Petitioner and Kendall Township. The intention was to use the property for a truck and trailer sales business. If the map amendment was approved, the Petitioner would still need site plan approval. The Petitioner intended to install a paved parking lot, applicable lighting, remodel the existing building, and possibly construct a second building. The Petitioner was attempting to relocate the trailers presently onsite. Discussion occurred regarding current activities on the property; a request was made regarding clarifying the current use of the property because drivers were getting picked up and dropped off at the site. Discussion occurred regarding the County's voluntary compliance policy. It was noted that the subject property and Mixed Use Business area was not very large. The Kendall County Regional Planning Commission recommended approval of the map amendment by a vote of eight (8) in favor and (0) in opposition, with two (2) members absent. The minutes of the meeting were provided.

The Petitioner would like to rezone the property to operate a trucking business.

There are two (2) existing buildings on the property. The northern building is approximately five thousand, three hundred sixty-six (5,366) square feet in size. The southern building is approximately eleven thousand, three hundred (11,300) square feet in size.

Any future buildings would have to meet applicable building codes.

The site is serviced by a well and septic. There is electricity and natural gas onsite.

The property fronts Route 47 and has one (1) access point off of Route 47. There is a deceleration lane for south bound traffic off of Route 47. The property also has one (1) access point off of Conservation Drive.

There is existing parking around the southern building; the parking spaces are not marked. If improvements are made to the site, parking spaces would need to be marked.

Based on the proposed uses, no new odors are foreseen. The owners of the property would have to follow applicable odor control regulations based on potential other future M-1 allowable uses.

There are lights on both buildings and a streetlight is lying on the ground at the entrance off of Route 47.

The amount of lighting could expand on the property if they install a larger parking lot or if different uses move onto the property. Lighting would need to be evaluated as part of site plan review.

There are several mature plants around the perimeter of the property. No changes to the landscaping or property screening are proposed as part of the map amendment.

If improvements are made to the site in the future, landscaping and screening would be required as part of site plan review.

Any signage would have to meet applicable regulations and secure permits.

The owners of the property would have to follow applicable noise control regulations based on future land uses. Noise control measures would need to be evaluated as part of site plan approval.

The Petitioner submitted an application for a stormwater permit.

The proposed Findings of Fact were as follows:

Existing uses of property within the general area of the property in question. The surrounding properties are used for agricultural purposes, single-family residential, office, and light industrial, including outdoor storage. The property is presently vacant, but was previously used as a site for the sale of agricultural equipment.

The Zoning classification of property within the general area of the property in question. The surrounding properties are zoned A-1 and M-1 in the unincorporated area and R-2, R-3, and B-3 inside the United City of Yorkville.

The suitability of the property in question for the uses permitted under the existing zoning classification. The Petitioners proposed use of the property, for the operation of a trucking business, is not allowed in the B-3 Zoning District. The site itself could be used for a trucking business, if properly zoned.

The trend of development, if any, in the general area of the property in question, including changes, if any, which may have taken place since the day the property in question was in its present zoning classification. The Zoning Board of Appeals shall not recommend the adoption of a proposed amendment unless it finds that the adoption of such an amendment is in the public interest and is not solely for the interest of the applicant. The Zoning Board of Appeals may recommend the adoption of an amendment changing the zoning classification of the property in question to any higher classification than that requested by the applicant. For the purpose of this paragraph the R-1 District shall be considered the highest classification and the M-2 District shall be considered the lowest classification. The trend of development in the area is a mix of agricultural, storage and warehousing, and other light industrial type uses.

Consistency with the purpose and objectives of the Land Resource Management Plan and other adopted County or municipal plans and policies. The Future Land Use Map in the Land Resource

Management Plan was recently amended to Mixed Use Business. The M-1 Zoning District is consistent with the Mixed Use Business classification.

Staff recommended approval of the proposed map amendment.

Chairman Mohr asked if there were any questions. There were none.

Chairman Mohr opened the public hearing at 7:12 p.m.

Chairman Mohr swore in Dan Kramer.

Dan Kramer, Attorney for the Petitioner, spoke about the property being vacant for 2 decades. The current ordinance states that farm implements can be sold but not semi-trailers or semi tractors which is why the Petitioner requests to rezone the property to M-1 Zoning. Mr. Kramer stated that the Petitioner does not run a trucking business. He is a licensed dealer.

There have been unknown semi-trailers parked on the Petitioner's lot. Plano Molding has used the property for storing their trailers. The Petitioner is attempting to relocate trailers that are currently onsite. A request was made regarding clarifying the current use of the property because drivers were being picked up and dropped off at the site. Mr. Kramer stated that none of the Petitioner's trailers were licensed to travel on the highway. The Petitioner was arranging to sell the trailers as soon as possible.

The Petitioner plans on having a building to customize semi-trailers and semi-tractors. For example, if someone wants their ICC number printed on the truck or have specialized mud flaps they will be able to have that done. The Petitioner was also considering having the two (2) buildings connected to form one (1) large building.

Mr. Kramer stated that the asphalt that is currently on Conservation Drive was not adequate for large trucks so the petitioner stated he would have a sign that will say no vehicles over ten thousand pounds (10,000 lbs.) on Conservation Drive. The Petitioner's site plan was under review by the County Stormwater Engineer.

Steve Grebner, Kendall County Township Clerk, stated he counted the trailers in the lot and there were sixty (60) trailers. Mr. Grebner asked Mr. Kramer what the time table was for the Petitioner to remove the trailers. Mr. Kramer stated the time table would be approximately thirty (30) days.

Ms. Prodehl asked if the trailers had anything stored in them. Mr. Kramer answered that there was nothing stored in any of the trailers.

Chairman Mohr adjourned the public hearing at 7:31 p.m.

Member LeCuyer made motion, seconded by Member Thompson, to approve Findings of Fact.

The votes were as follows:
Ayes (5): Fox, LeCuyer, Mohr, Prodehl, and Thompson,
Nays (0): None
Abstain (0): None
Absent (2): Cherry and Whitfield

Member LeCuyer made a motion, seconded by Member Fox, to approve the petition to rezone the Property from B-3 Highway Business District to M-1 Limited Manufacturing District.

The votes were as follows:
Ayes (5): Fox, LeCuyer, Mohr, Prodehl, and Thompson,
Nays (0): None
Abstain (0): None
Absent (2): Cherry and Whitfield

The proposal will go to the Planning, Building and Zoning Committee on June 10, 2024.

The Zoning Board of Appeals completed their review of Petition 24-06 at 7:33 p.m.

NEW BUSINESS/OLD BUSINESS
None

REVIEW OF PETITIONS THAT WENT TO COUNTY BOARD
Mr. Asselmeier reported that Petitions 23-35, 24-01, 24-02, and 24-03 were approved by the County Board. Also the City of Aurora annexed the billboard at the corner Route 30 and Hafenrichter.

Mr. Asselmeier also reported that the Brighter Daze banquet facility on Crimmins Road has asked for annexation into Millington. This was continued to the May meeting.

Mr. Asselmeier reported that the following items will be on the May agenda, Seward Township is requesting an amendment to the special use for their Township Building because they want to construct an addition, a landscaping business is proposed at 2142 Wooley Road, someone wants to rezone the property next to TZ Landscaping on Route 52 in order have a contractor's office, a special request for a commercial solar farm is proposed on Simons Road, and Seward Township is proposing changes to their Future Land Use Map. Seward Township has submitted a request to reclassify almost everything west of Arbeiter and Hare Roads to Agricultural.

Chair Mohr asked Mr. Asselmeier if Seward Township had their local hearings regarding the proposed new future land use map. Mr. Asselmeier stated that Seward Township had their public meeting on April 18, 2024. There were approximately thirty (30) people in attendance.

Member Prodehl made motion, seconded by Member Fox, to place the two (2) Seward Township items at the beginning of the May agenda. With a voice vote of five (5) ayes, the motion carried.

PUBLIC COMMENTS

None

ADJOURNMENT OF THE ZONING BOARD OF APPEALS

Member LeCuyer made a motion, seconded by Member Prodehl, to adjourn.

With a voice vote of five (5) ayes, the motion carried.

The Zoning Board of Appeals meeting adjourned at 7:43 p.m.

The next regularly scheduled meeting/hearing will be on May 28, 2024.

Respectfully submitted by,
Wanda A. Rolf
Administrative Assistant

Exhibits

1. Memo on Petition 24-06 Dated April 25, 2024
2. Certificate of Publication and Certified Mail Receipts for Petition 24-06 (Not Included with Report but on file in Planning, Building and Zoning Office)

KENDALL COUNTY

ZONING BOARD OF APPEALS

APRIL 29, 2024

In order to be allowed to present any testimony, make any comment, engage in cross-examination, or ask any question during this public hearing, you must enter your name, address, and signature on this form prior to the commencement of the public hearing. By signing this registration sheet, you agree that you understand that anything you say will be considered sworn testimony, and that you will tell the truth, the whole truth and nothing but the truth.

NAME	ADDRESS	SIGNATURE
Dan Kramm	[redacted]	

DEPARTMENT OF PLANNING, BUILDING & ZONING
111 West Fox Street • Room 203
Yorkville, IL • 60560
(630) 553-4141 Fax (630) 553-4179

Petition 24-09
Tim O'Brien on Behalf of Seward Township
Major Amendment to A-1 Special Use – For Governmental Building and Facility by Changing the Site Plan

INTRODUCTION
On August 18, 2009, the County Board approved Ordinance 2009-31, granting a special use permit for a governmental building and facility at 14719 O'Brien Road.

The Petitioner is proposing to amend the site plan approved in Ordinance 2009-31 by a constructing an approximately eight thousand four hundred (8,400) square foot pole-type maintenance/storage building to the west of the existing Seward Township building and installing an asphalt driveway connecting the existing parking lot to the new building. For reference, the existing building is approximately nine thousand six hundred (9,600) square feet in size and is used for maintenance, storage, and offices.

Though not shown on the site plan approved in 2009, Seward Township received a permit and installed a sign on the property in 2010. The sign is shown on the proposed site plan.

The application materials are included as Attachment 1. The proposed site plan is included as Attachment 2. Ordinance 2009-31 is included as Attachment 3.

SITE INFORMATION

PETITIONER Tim O'Brien on Behalf of Seward Township

ADDRESS 14719 O'Brien Road, Minooka

LOCATION Approximately 1000 Feet South of Route 52 on the West Side of O'Brien Road



TOWNSHIP Seward

PARCEL # 09-17-400-005

LOT SIZE 5.00 Acres

EXISTING LAND USE Public/Institutional (Seward Township Building)

ZONING A-1 Agricultural District with a Special Use Permit

LRMP

Current Land Use	Public/Institutional
Future Land Use	Commercial (County)
Roads	O'Brien Road is a Township Road classified as a Local Road.
Trails	None
Floodplain/ Wetlands	None

REQUESTED ACTION Major Amendment to an A-1 Special Use for Governmental Building and Facility

APPLICABLE REGULATIONS Section 7:01.D.24 – A-1 Special Uses – Permits Governmental Buildings and Facilities in the A-1 District as a Special Use

Section 13:08 – Special Use Procedures

SURROUNDING LAND USE

Location	Adjacent Land Use	Adjacent Zoning	Land Resource Management Plan	Zoning within ½ Mile
North	Agricultural	A-1	Commercial	A-1
South	Agricultural	A-1	Rural Estate Residential (Max 0.45 DU/Acre) and Rural Residential (Max 0.65 DU/Acre)	A-1
East	Agricultural	A-1	Commercial	A-1
West	Agricultural	A-1	Commercial	A-1 and A-1 SU

There is one (1) home located within one half (1/2) mile of the subject property.

The special use to the west is for a banquet facility and related uses.

PHYSICAL DATA

ENDANGERED SPECIES REPORT

EcoCat submitted on April 23, 2024, and consultation was terminated (see Attachment 1, Pages 5-7).

NATURAL RESOURCES INVENTORY

A NRI application was submitted on April 30, 2024 (see Attachment 1, Page 4). The LESA Score was 191 indicating a low level of protection. The NRI Report is included as Attachment 7.

ACTION SUMMARY

SEWARD TOWNSHIP

Seward Township was emailed information on April 30, 2024.

LISBON-SEWARD FIRE PROTECTION DISTRICT

The Lisbon-Seward Fire Protection District was emailed information on April 30, 2024.

ZPAC

ZPAC reviewed the proposal at their meeting on May 7, 2024. ZPAC recommended approval of the proposal by a vote of nine (9) in favor and zero (0) in opposition with one (1) member absent. The minutes are included as Attachment 6.

RPC

The Kendall County Regional Planning Commission reviewed this proposal at their meeting on May 22, 2024. It was noted that the Petitioner was working on incorporating stormwater detention into the site plan. Member Wilson felt that Seward Township was not transparent in how they obtained approval from the Township electors for this project; she still supported the major amendment. Discussion also occurred regarding salt storage at the property; salt was already stored indoors. The Kendall County Regional Planning Commission recommended approval of the requested major amendment with conditions proposed by Staff and the addition to stormwater detention infrastructure on the site plan by a vote of eight (8) in favor and zero (0) in opposition with two (2) members absent. The minutes of the meeting are included as Attachment 8.

BUILDING CODES

The proposed building will have to obtain applicable building permits.

PARKING

As required in the special use permit from 2009, the subject property has fifteen (15) parking spaces, including one (1) handicapped parking space. Given that the proposed amendment will not increase public visitation at the property, the number of parking spaces should be adequate.

STORMWATER

The Petitioner submitted an application for a stormwater permit.

In 2009, the Petitioner was granted a variance to the stormwater runoff storage facilities by Ordinance 2009-26, included as Attachment 4. An amendment to this variance, the installation of stormwater storage facilities, submittal of a fee-in-lieu payment, or some combination thereof will be required. A letter from WBK Engineering is included as Attachment 5. The Petitioner was considering a variance to the Stormwater Management Ordinance. However, they were working on an alteration to the site plan to include stormwater detention.

FINDINGS OF FACT-SPECIAL USE PERMIT AMENDMENT

§ 13.08.J of the Zoning Ordinance outlines findings that the Zoning Board of Appeals must make in order to recommend in favor of the applicant on special use permit applications. They are listed below in *italics.* Staff has provided findings in **bold** below based on the recommendation:

That the establishment, maintenance, or operation of the special use will not be detrimental to or endanger the public health, safety, morals, comfort, or general welfare. **The expansion will improve the public health, safety, comfort, and general welfare because the new building will allow the township to do its work inside a new facility.**

That the special use will not be substantially injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted, nor substantially diminish and impair property values within the neighborhood. The Zoning classification of property within the general area of the property in question shall be considered in determining consistency with this standard. The proposed use shall make adequate provisions for appropriate buffers, landscaping, fencing, lighting, building materials, open space and other improvements necessary to insure that the proposed use does not adversely impact adjacent uses and

is compatible with the surrounding area and/or the County as a whole. **The existing use has been in place since 2009. The adjacent land uses are agricultural and the construction of a maintenance building will not injury the use and enjoyment of neighboring land owners.**

That adequate utilities, access roads and points of ingress and egress, drainage, and/or other necessary facilities have been or are being provided. **This is true except for drainage. Drainage concerns can be addressed through a stormwater permit.**

That the special use shall in all other respects conform to the applicable regulations of the district in which it is located, except as such regulations may in each instance be modified by the County Board pursuant to the recommendation of the Zoning Board of Appeals. **This is true.**

That the special use is consistent with the purpose and objectives of the Land Resource Management Plan and other adopted County or municipal plans and policies. **Seward Township has used the subject property for public/institutional purposes since 2009. Accordingly, allowing the Township expand its facilities is consistent with a goal found on Page 9-20 of the Kendall County Land Resource Management Plan which calls for "mutually supportive, non-adversarial team of municipal, township, . . . county, and other governments working toward the benefit of everyone in Kendall County."**

RECOMMENDATION
Staff recommends approval of the requested amendments to the existing special use permit for a governmental building and facility, pending resolution of Kendall County Stormwater Ordinance issues subject to the following conditions and restrictions:

1. The site plan attached as Group Exhibit A of Ordinance 2009-31 is hereby amended to include the site plan attached hereto (Attachment 2). **Stormwater detention related information may be added to the site plan without the need to obtain an amendment to the site plan. (Added at RPC).**

2. None of buildings or structures allowed by this major amendment to an existing special use permit shall be considered agricultural structures and must secure applicable permits.
3. The remaining conditions and restrictions contained in Ordinance 2009-31 shall remain valid and effective.
4. The use allowed by this major amendment to an existing special use permit shall follow all applicable federal, state, and local laws.
5. Failure to comply with one or more of the above conditions or restrictions could result in the amendment or revocation of the special use permit.

6. If one or more of the above conditions or restrictions is declared invalid by a court of competent jurisdiction, the remaining conditions shall remain valid.

7. These major amendments to an existing special use permit shall be treated as covenants running with the land and are binding on the successors, heirs, and assigns as to the same special uses conducted on the property.

ATTACHMENTS
1. Application Materials
2. Proposed Site Plan
3. Ordinance 2009-31
4. Ordinance 2009-26
5. April 26, 2024, WBK Letter
6. May 7, 2024, ZPAC Meeting Minutes (This Petition Only)
7. NRI Report
8. May 22, 2024, Kendall County Regional Planning Commission Minutes (This Petition Only).

DEPARTMENT OF PLANNING, BUILDING & ZONING
111 West Fox Street • Yorkville, IL • 60560
(630) 553-4141 Fax (630) 553-4179

APPLICATION

PROJECT NAME _____ FILE #:_____

NAME OF APPLICANT (Including First, Middle Initial, and Last Name)
SEWARD TOWNSHIP

CURRENT LANDOWNER/NAME(s)
SEWARD TOWNSHIP

SITE INFORMATION ACRES	SITE ADDRESS OR LOCATION	ASSESSOR'S ID NUMBER (PIN)
5+/-	14719 N. O'BRIEN RD.	

EXISTING LAND USE	CURRENT ZONING	LAND CLASSIFICATION ON LRMP
	A-1	

REQUESTED ACTION (Check All That Apply):

- X SPECIAL USE
- ___ MAP AMENDMENT (Rezone to ____)
- ___ VARIANCE
- ____ ADMINISTRATIVE VARIANCE
- ___ A-1 CONDITIONAL USE for:_____
- ___ SITE PLAN REVIEW
- ___ TEXT AMENDMENT
- ___ PRELIMINARY PLAT
- ___ RPD (___Concept; ___ Preliminary; ___ Final)
- ___ FINAL PLAT
- ___ ADMINISTRATIVE APPEAL
- ___ OTHER PLAT (Vacation, Dedication, etc.)
- ___ AMENDMENT TO A SPECIAL USE (_____Major; _____Minor)

[1]PRIMARY CONTACT	PRIMARY CONTACT MAILING ADDRESS	PRIMARY CONTACT EMAIL
TIM O'BRIEN	[redacted]	
PRIMARY CONTACT PHONE # [redacted]	PRIMARY CONTACT FAX #	PRIMARY CONTACT OTHER #(Cell, etc.)

[2]ENGINEER CONTACT	ENGINEER MAILING ADDRESS	ENGINEER EMAIL
BRUCE MILLER	[redacted]	[redacted]
ENGINEER PHONE # [redacted]	ENGINEER FAX # [redacted]	ENGINEER OTHER # (Cell, etc.)

I UNDERSTAND THAT BY SIGNING THIS FORM, THAT THE PROPERTY IN QUESTION MAY BE VISITED BY COUNTY STAFF & BOARD/ COMMISSION MEMBERS THROUGHOUT THE PETITION PROCESS AND THAT THE PRIMARY CONTACT LISTED ABOVE WILL BE SUBJECT TO ALL CORRESPONDANCE ISSUED BY THE COUNTY.

I CERTIFY THAT THE INFORMATION AND EXHIBITS SUBMITTED ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND THAT I AM TO FILE THIS APPLICATION AND ACT ON BEHALF OF THE ABOVE SIGNATURES. **THE APPLICANT ATTESTS THAT THEY ARE FREE OF DEBT OR CURRENT ON ALL DEBTS OWED TO KENDALL COUNTY AS OF THE DATE OF THE APPLICATION.**

SIGNATURE OF APPLICANT [redacted] DATE 4-22-24

FEE PAID:$ 1155
CHECK #: 1357

[1]*Primary Contact will receive all correspondence from County*
[2]*Engineering Contact will receive all correspondence from the County's Engineering Consultants*

Date Stamp Here If
Checklist Is Complete

Memorandum

To: Kendall County Administration

CC: File 24-500

From: Bruce Miller, B.P. Miller Consultants, Ltd.

Date: 4/22/2024

Re: Seward Township: Special Use Permit

Gentlemen:

The proposed project relates to the construction of an auxiliary maintenance/storage building for vehicles and miscellaneous Township equipment. The existing site is shown on the attached drawing with the current building location, driveways, parking, and salt storage shed.

The proposed building will be 140'x60' (8,400 SF). Additional asphalt paving and driveway area will be provided for access to the new building. There will be no plumbing other than a hose bibb for the wash bay. The building will be a standard pole type structure and will be provided by the responsible low bidder at a later date.

TRUSTEE'S DEED

200900013010

DEBBIE
GILLETTE
KENDALL COUNTY, IL

RECORDED: 6/11/2009 2:34 PM
TRSD: 262.75 RHSPS FEE: 10.00
PAGES: 4

THIS INDENTURE, made this 20th day of May, 2009, between **Douglas Horton and Sun Trust Bank, As Successor Co-Trustee of the Earl W. Horton Declaration of Trust Number 101, dated May 7, 1990, as amended,** ("GRANTOR") presently of [redacted] and **Seward Township, an Illinois governmental unit** (Grantee), presently of 2851 WILDYRD Minooka Illinois. 60447

WITNESSETH, that Grantors, in consideration of TEN AND NO/100TH ($10.00) DOLLARS, and other and good valuable considerations in hand paid, does hereby CONVEYS and QUITCLAIMS unto Grantee, all interest in the following described real estate, situated in Kendall County, Illinois, to-wit:

THE SOUTH 360 FEET OF THE EAST 605 FEET OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 17, IN TOWNHIP 35 NORTH, AND IN RANGE 8 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN KENDALL COUNTY, ILLINOIS.

COMMONLY KNOWN AS: 5 Acres on O'Brien Road South of Route 52 in Kendall County, Minooka, Illinois
P.I.N. NO.: Part of 09-17-400-001

Together with the tenement and appurtenances hereto belonging.

This Trustee's Deed is executed pursuant to and in the exercise of the power and authority granted and vested in said Trustee by terms of the **Earl W. Horton Declaration of Trust Number 101, dated May 7, 1990.**

IN WITNESS WHEREOF, Grantors have caused their names to be affixed the day and year first above written.

COUNTY OF KENDALL
REAL ESTATE TRANSFER TAX
$ 71.25 W

SunTrust Bank and Douglas Horton
As Successor Co-Trustees for the Earl V. Horton Declaration of Trust No. 101 dated May 7, 1990

By [redacted]
Douglas Horton, Co-Trustee

SunTrust Bank, as Co-Trustee
By: [redacted]
Jean C. Mathis, Vice President

STATE OF ILLINOIS
STATE TAX
JUN.11.09
KENDALL COUNTY

REAL ESTATE TRANSFER TAX
0000012632
0014250
FP 103035
W

Kendall County Soil & Water Conservation District

7775A Route 47, Yorkville, Illinois 60560 • (630)553-5821 extension 3

www.kendallswcd.org

NATURAL RESOURCE INFORMATION (NRI) REPORT APPLICATION

Petitioner: SEWARD TOWNSHIP Contact Person: TIM O'BRIEN
Address: 14194 O'BRIEN ROAD
City, State, Zip: MINOOKA, IL 60447
Phone Numbe [redacted] ( )
Email: S [redacted]

Please select: How would you like to receive a copy of the NRI Report? ☒ Email ☐ Mail

Site Location & Proposed Use

Township Name SEWARD Township 35 N, Range 8 E, Section(s) 17
Parcel Index Number(s)
Project or Subdivision Name SEWARD TOWNSHIP Number of Acres 5+-
Current Use of Site OFFICE/MAINTENANCE Proposed Use NEW STORAGE BUILDING
Proposed Number of Lots 1 (EXISTING) Proposed Number of Structures 1
Proposed Water Supply EXISTING WELL Proposed type of Wastewater Treatment EXISTING SEPTIC
Proposed type of Storm Water Management VARIANCE

Type of Request

☐ Change in Zoning from _____ to _____
☐ Variance (Please describe fully on separate page)
■ Special Use Permit (Please describe fully on separate page)
Name of County or Municipality the request is being filed with: KENDALL COUNTY

In addition to this completed application form, please including the following to ensure proper processing:

■ **Plat of Survey/Site Plan** – showing location, legal description and property measurements
■ **Concept Plan** - showing the locations of proposed lots, buildings, roads, stormwater detention, open areas, etc.
■ If available: topography map, field tile map, copy of soil boring and/or wetland studies
☐ **NRI fee** (Please make checks payable to Kendall County SWCD)

The NRI fees, as of July 1, 2010, are as follows:

Full Report: $375.00 for five acres and under, plus $18.00 per acre for each additional acre or any fraction thereof over five.
Executive Summary Report: $300.00 (KCSWCD staff will determine when a summary or full report will be necessary.)

Fee for first five acres and under	$ 375.00
_____ Additional Acres at $18.00 each	$ _____
Total NRI Fee	$ _____

NOTE: Applications are due by the 1st of each month to be on that month's SWCD Board Meeting Agenda. Once a completed application is submitted, please allow 30 days for inspection, evaluation and processing of this report.

I (We) understand the filing of this application allows the authorized representative of the Kendall County Soil and Water Conservation District (SWCD) to visit and conduct an evaluation of the site described above. The completed NRI report expiration date will be 3 years after the date reported.

_____ _____
Petitioner or Authorized Agent **Date**

This report will be issued on a nondiscriminatory basis without regard to race, color, religion, national origin, age, sex, handicap or marital status.

FOR OFFICE USE ONLY

NRI#_____ Date initially rec'd _____ Date all rec'd _____ Board Meeting _____
Fee Due $_____ Fee Paid $ _____ Check #_____ Over/Under Payment _____ Refund Due_____

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

EcoCAT Ecological Compliance Assessment Tool

Enter Another Project

Exit EcoCAT

EcoCAT
Ecological Compliance Assessment Tool

Applicant: Seward Township
Contact: Ms. Jean Homerding
Address: [redacted]

IDNR Project Number: 2413574
Date: 04/23/2024

Project: Proposed Auxiliary Maintenance/Storage Building
Address: 14719 O'Brien Road, Minooka

Description: The proposed building will be 140'x60' (8,400 SF), the existing Site has an office and storage building, a salt storage shed, drive entrances and parking for Township vehicles and for meetings.

Natural Resource Review Results

~~Consultation for Endangered Species Protection and Natural Areas Preservation (Part 1075)~~

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

EcoCAT Ecological Compliance Assessment Tool

Enter Another Project

Exit EcoCAT

1 of 3 Find | Next

The applicant is responsible for the accuracy of the location submitted for the project.

County: Kendall

Township, Range, Section:
35N, 8E, 16
35N, 8E, 17



IL Department of Natural Resources Contact
Bradley Hayes
217-785-5500
Division of Ecosystems & Environment

Government Jurisdiction
Seward Township, Kendall County
Tim O'Brien
14719 O'Brien Road
Minooka, Illinois 60447

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

Payment Receipt

From: noreply@ncr.com (noreply@ncr.com)

To: [redacted]

Date: Tuesday, April 23, 2024 at 10:32 AM CDT

Illinois Dept of Natural Resources

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Payment Receipt

Thank You for Your Payment

Please save this Confirmation Number for your personal records.

Customer Name

Bruce P Miller

Effective Date

4/23/2024 10:32 AM Central Standard Time

Confirmation Number

30055806

Payment Method	Amount
[redacted]	$127.81

Item	Payment
EcoCat	$125.00
Transaction Fee:	$2.81
Total Amount Paid:	$127.81

Credit Notes
EcoCAT Project Code: 2413574

Payment Details

EcoCat
Bruce P Miller - $125.00

Please fill out the following findings of fact to the best of your capabilities. §13:08.J of the Zoning Ordinance outlines findings that the Zoning Board of Appeals shall consider in rendering a decision, but is not required to make an affirmative finding on all items in order to grant a **special use**. They are as follows:

That the establishment, maintenance, and operation of the special use will not be detrimental to, or endanger, the public health, safety, morals, comfort, or general welfare.

STORAGE BUILDING, NO IMPACT TO PUBLIC

That the special use will not be substantially injurious to the use and enjoyment of other properties in the immediate vicinity for the purposes already permitted, nor substantially diminish and impair property values within the neighborhood. The Zoning classification of property within the general area of the property in question shall be considered in determining consistency with this standard. The proposed use shall make adequate provisions for appropriate buffers, landscaping, fencing, lighting, building materials, open space and other improvements necessary to insure that the proposed use does not adversely impact adjacent uses and is compatible with the surrounding area and/or the County as a whole.

SURROUNDING AREA IS FARMLAND. THE PROPOSED BUILDING IS FOR STORAGE & MAINTENANCE FOR SEWARD TWP VEHICLES. THERE WILL BE NO ADVERSE IMPACT OR DETRIMENT TO NEIGHBORING PROPERTIES

That adequate utilities, access roads and points of ingress and egress, drainage, and/or other necessary facilities have been or are being provided.

ALL THESE ITEMS ARE EXISTING & NO OTHER FACILITIES ARE PROPOSED, NEW BUILDING ONLY.

That the special use shall in all other respects conform to the applicable regulations of the district in which it is located, except as such regulations may in each instance be modified by the County Board pursuant to the recommendation of the Zoning Board of Appeals

THIS BUILDING IS IN ACCORDANCE WITH ALL KENDALL COUNTY RESTRICTIONS.

That the special use is consistent with the purpose and objectives of the Land Resource Management Plan and other adopted County or municipal plans and policies.

NEW BUILDING IS CONSISTENT WITH CURRENT USE

SITE PLAN
PART OF THE SE CORNER OF SECTION 17, TOWNSHIP 35N, RANGE 8E, THIRD PRIME MERIDIAN
SEWARD TOWNSHIP
KENDALL COUNTY, ILLINOIS
5.000± ACRES
ZONED A-1

STATE OF ILLINOIS } SS
COUNTY OF WILL }

TWig, Inc., Illinois Professional Design Firm No. 184-001251, Hereby Certifies that it has surveyed the property described in the above caption and as shown on the annexed plat, which is a true and correct representation of said survey.

SURVEY FIELD WORK COMPLETED APRIL 9, 2024

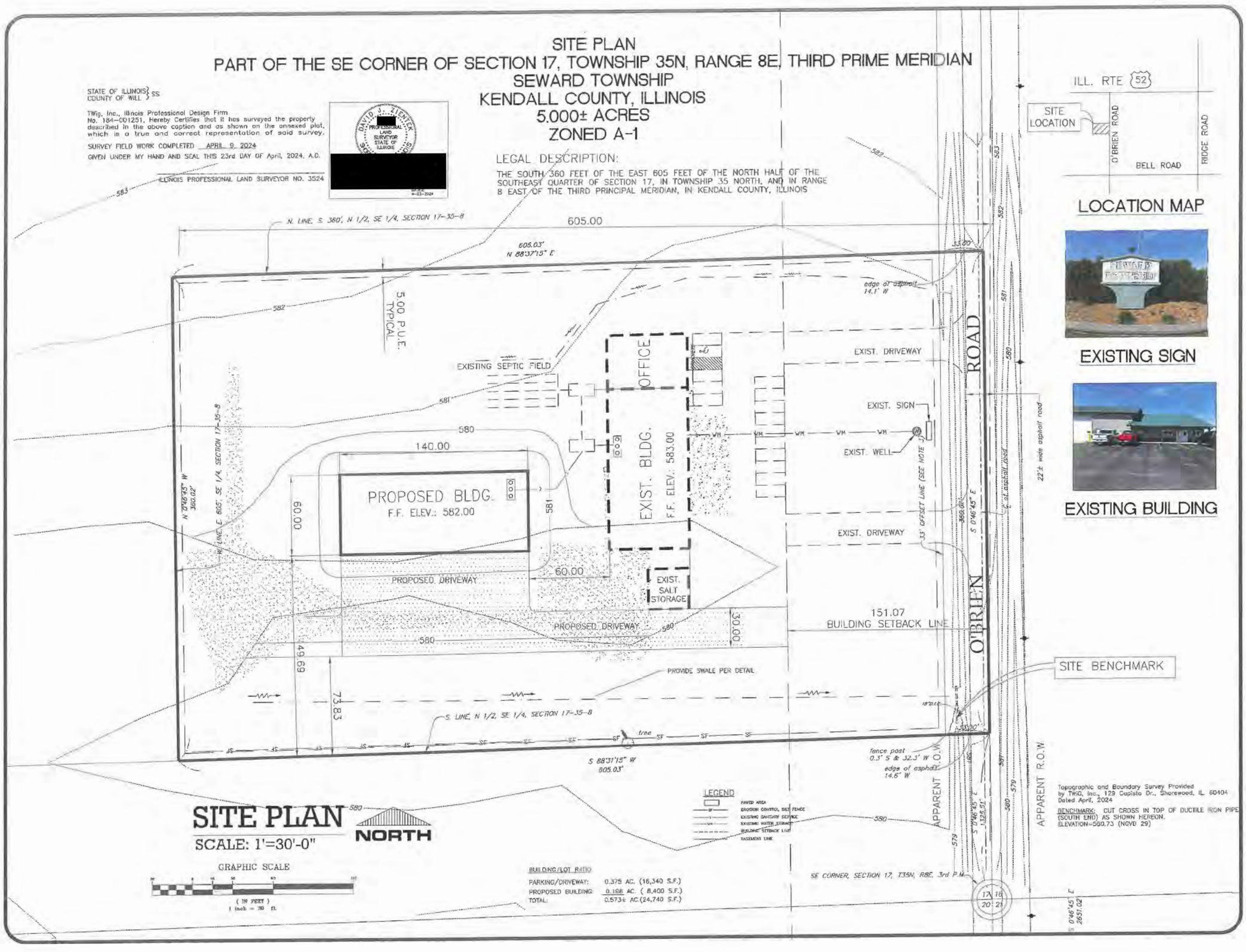
GIVEN UNDER MY HAND AND SEAL THIS 23rd DAY OF April, 2024, A.D.

ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 3524

DAVID J. LENTEK PROFESSIONAL LAND SURVEYOR STATE OF ILLINOIS

LEGAL DESCRIPTION:

THE SOUTH 360 FEET OF THE EAST 605 FEET OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 17, IN TOWNSHIP 35 NORTH, AND IN RANGE 8 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN KENDALL COUNTY, ILLINOIS



SITE PLAN
SCALE: 1'=30'-0"

NORTH

GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.

BUILDING/LOT RATIO

PARKING/DRIVEWAY:	0.375 AC. (16,340 S.F.)
PROPOSED BUILDING:	0.198 AC. (8,400 S.F.)
TOTAL:	0.573± AC.(24,740 S.F.)

Topographic and Boundary Survey Provided by TWig, Inc., 129 Capisto Dr., Shorewood, IL 60404 Dated April, 2024

BENCHMARK: CUT CROSS IN TOP OF DUCTILE IRON PIPE (SOUTH END) AS SHOWN HEREON. ELEVATION=580.73 (NGVD 29)

ILL. RTE 52

LOCATION MAP

EXISTING SIGN

EXISTING BUILDING

B. P. MILLER CONSULTANTS, LTD.
STRUCTURAL & CIVIL ENGINEERING
105 W. MONDAMIN ST.
MINOOKA, IL. 60447
815/467-9744
ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE NO.: 184-002264 EXP. 4/30/25

BRUCE P. MILLER 062-047933 LICENSED PROFESSIONAL ENGINEER MINOOKA, IL EXPIRES: 11/30/25

DATE: APRIL, 2024
SCALE: AS SHOWN

SITE PLAN
SEWARD TOWNSHIP
STORAGE BUILDING

SEWARD TOWNSHIP
PROPOSED STORAGE BUILDING
O'BRIEN ROAD
KENDALL COUNTY, ILLINOIS

SHEET
C-1

FILE NO.
24-500

State of Illinois
County of Kendall

Zoning Petition
09-24

ORDINANCE NUMBER 2009 - 31

GRANTING A SPECIAL USE for
GOVERNMENTAL BUILDINGS AND FACILTIES to
SEWARD TOWNSHIP

WHEREAS, The Township of Seward has filed a petition for a Special Use within the A-1 Agricultural Zoning District for a five (5) acre property located on the west side of O'Brien Road, approximately 970' south of Route 52 (PIN #09-17-400-005), in Seward Township; and

WHEREAS, said petition is to allow the operation governmental buildings and facilities pursuant to Section 7.01.D.14 of the Kendall County Zoning Ordinance; and

WHEREAS, said property is legally described as:

THE SOUTH 360 FEET OF THE EAST 605 FEET OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 17, IN TOWNSHIP 35 NORTH, AND IN RANGE 8 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN KENDALL COUNTY, ILLINOIS.

WHEREAS, the Kendall County Regional Plan Commission has recommended approval for the following on June 24, 2009:

A. Omission of lighting for the parking area as required in Section 11.02.F.12 of the Zoning Ordinance
B. Parking area to be improved with a gravel surface instead of a hard surface however, all handicapped accessible stalls shall be improved with a hard surface as required in Section 11.02.F.2
C. Amount of proposed parking stalls, 15, for the site to accommodate the proposed operation; and

WHEREAS, all procedures required by the Kendall County Zoning Ordinance were followed including notice for public hearing, preparation of the findings of fact, and recommendation for approval by the Special Use Hearing Officer on July 28, 2009; and

WHEREAS, the Kendall County Board finds that said petition is in conformance with the provisions and intent of the Kendall County Zoning Ordinance; and

WHEREAS, any change or modification to the Special Use that does not modify the original intent, purpose, or need for the Special Use, shall be submitted to and reviewed by the Planning, Building, & Zoning Department. Notice that a change or modification is sought shall be provided by the applicant in the manner provided in 55 ILCS 5/5-12009.5. Upon proper notice, the Planning, Building, & Zoning Department shall forward the request for change or modification to the Planning, Building & Zoning Committee. The Committee may return the matter to ZPAC and/or Plan

Commission for further consideration and findings or forward the matter to the full County Board to grant, deny, or return the requested change or modification to the Committee for further consideration and findings, and

WHEREAS, this special use shall be treated as a covenant running with the land and is binding on the successors, heirs, and assigns as to the same special use conducted on the property; and

NOW, THEREFORE, BE IT ORDAINED, that the Kendall County Board hereby grants approval of a special use zoning permit per section § 7.01.D.14 (A-1 Special Uses-Governmental buildings and facilities) to permit the use indicated in the recitals section of this Ordinance and as indicated on the submitted Site Plan included as Group Exhibit "A" attached hereto and incorporated herein.

Failure to comply with the terms of this ordinance may be cited as a basis for amending or revoking this special use permit.

IN WITNESS OF, this ordinance has been enacted on August 18, 2009.

Attest:

Anne Vickery
Kendall County Board Chairman

Debbie Gillette
Kendall County Clerk

EXHIBIT

Group A (Pg 1 of 3)

DATE _____

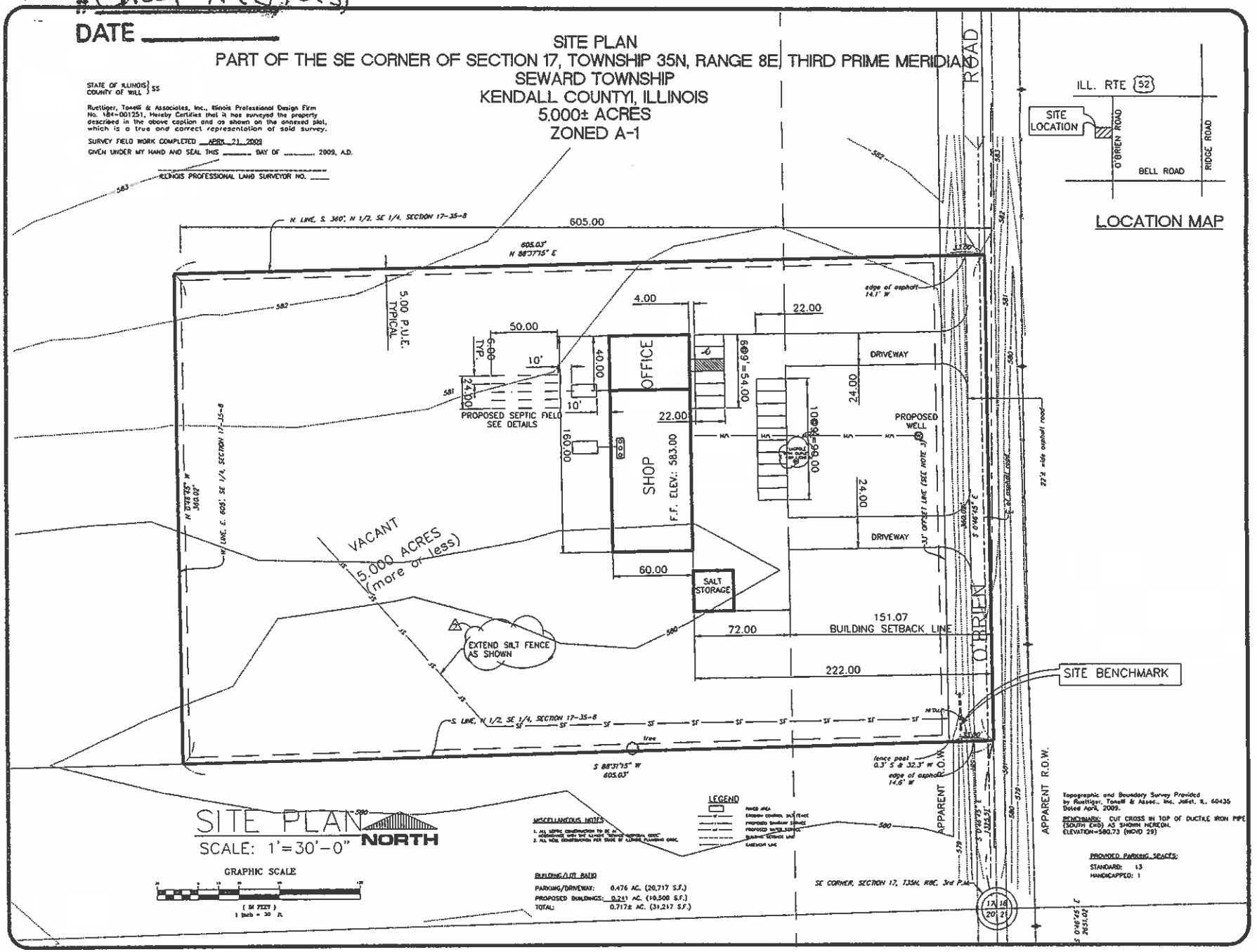
SITE PLAN
PART OF THE SE CORNER OF SECTION 17, TOWNSHIP 35N, RANGE 8E, THIRD PRIME MERIDIAN
SEWARD TOWNSHIP
KENDALL COUNTY, ILLINOIS
5.000± ACRES
ZONED A-1

STATE OF ILLINOIS } SS
COUNTY OF WILL }

Ruettiger, Tonelli & Associates, Inc., Illinois Professional Design Firm No. 184-001251, Hereby Certifies that it has surveyed the property described in the above caption and as shown on the annexed plat, which is a true and correct representation of said survey.

SURVEY FIELD WORK COMPLETED APRIL 21, 2009
GIVEN UNDER MY HAND AND SEAL THIS _____ DAY OF _____, 2009, A.D.

_____
ILLINOIS PROFESSIONAL LAND SURVEYOR NO. ____



SITE PLAN
SCALE: 1'=30'-0"
NORTH

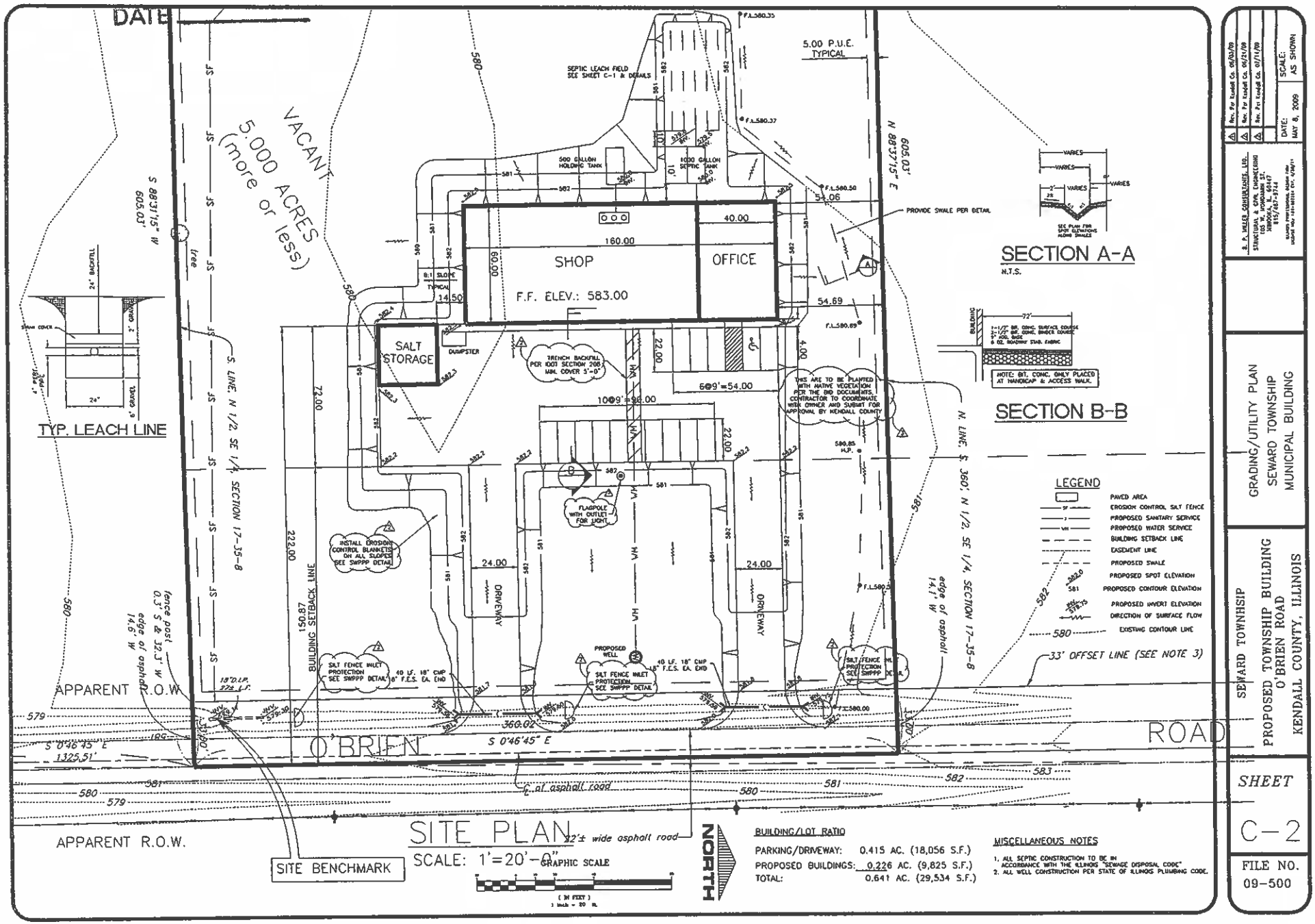
GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.

B. J. WALKER CONSULTANTS, LTD. STRUCTURAL & CIVIL ENGINEERING 185 W. ADDISON ST. ROSELLE, IL 60172 815/467-9244 ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE NO.: 184-002264 EXP.: 4/30/11	⚠ Rev. Per Kendall Co. 06/03/09 ⚠ Rev. Per Kendall Co. 06/24/09	DATE: MAY 8, 2009 SCALE: AS SHOWN
	SITE PLAN SEWARD TOWNSHIP MUNICIPAL BUILDING	
SEWARD TOWNSHIP PROPOSED TOWNSHIP BUILDING O'BRIEN ROAD KENDALL COUNTY, ILLINOIS		
SHEET C — 1		
FILE NO. 09-500		

EXHIBIT

Group A (Pg 2 of 3)

DATE



BUILDING/LOT RATIO

PARKING/DRIVEWAY:	0.415 AC.	(18,056 S.F.)
PROPOSED BUILDINGS:	0.226 AC.	(9,825 S.F.)
TOTAL:	0.641 AC.	(29,534 S.F.)

MISCELLANEOUS NOTES

1. ALL SEPTIC CONSTRUCTION TO BE IN ACCORDANCE WITH THE ILLINOIS "SEWAGE DISPOSAL CODE"
2. ALL WELL CONSTRUCTION PER STATE OF ILLINOIS PLUMBING CODE.

Rev. Per Kendall Co. 08/03/09	
Rev. Per Kendall Co. 06/24/09	
Rev. Per Kendall Co. 07/11/09	
SCALE: AS SHOWN	
DATE: MAY 8, 2009	

J. P. MILLER CONSULTANTS, LTD.
STRUCTURAL & CIVIL ENGINEERING
105 W. MONROE ST.
NEW LENOX, IL 60451
815/717-3744

GRADING/UTILITY PLAN
SEWARD TOWNSHIP
MUNICIPAL BUILDING

SEWARD TOWNSHIP
PROPOSED TOWNSHIP BUILDING
O'BRIEN ROAD
KENDALL COUNTY, ILLINOIS

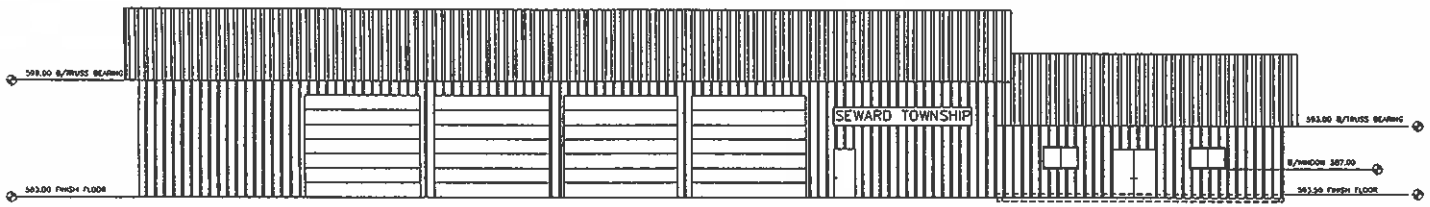
SHEET
C-2

FILE NO.
09-500

EXHIBIT

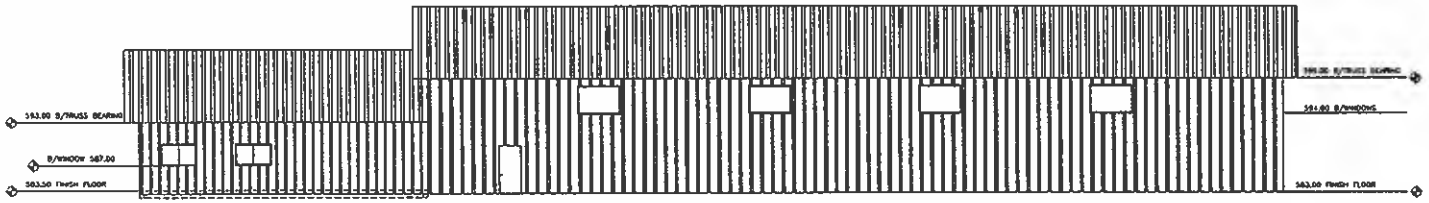
Group A (Pg 3 of 3)

DATE



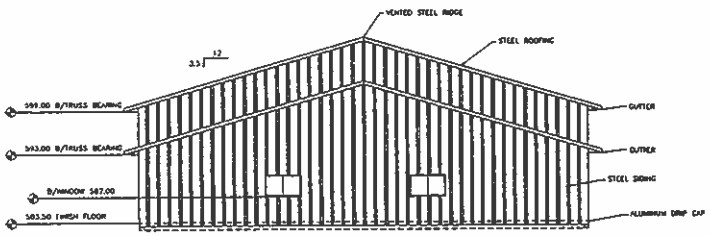
EAST ELEVATION

SCALE: 1/8"=1'-0"



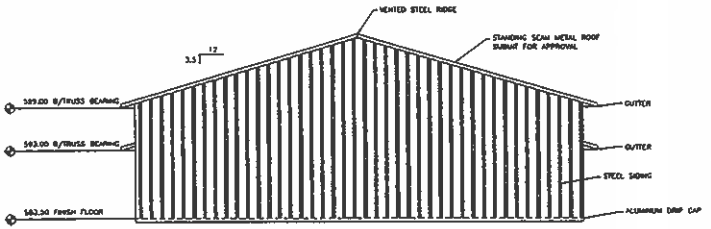
WEST ELEVATION

SCALE: 1/8"=1'-0"



NORTH ELEVATION

SCALE: 1/8"=1'-0"



SOUTH ELEVATION

SCALE: 1/8"=1'-0"

B. P. MILLER CONSULTANTS, LTD.
STRUCTURAL & CIVIL ENGINEERING
105 W. MADISON ST.
SENECA, IL 61367
815/357-9744
ILLINOIS PROFESSIONAL DESIGN FIRM
LICENSE NO: 184-001611 EXP: 4/30/11

DATE: JUNE 15,2009

SCALE: AS SHOWN

ELEVATIONS
SEWARD TOWNSHIP
MUNICIPAL BUILDING

SEWARD TOWNHSIP
PROPOSED TOWNSHIP BUILDING
O'BRIEN ROAD
KENDALL COUNTY, ILLINOIS

SHEET

A-2

FILE NO.
09-500

State of Illinois
County of Kendall

Zoning Petition 09-32
Site Development 09-10
(Seward Township)

ORDINANCE 2009 - 26
Stormwater Management Variance
SEWARD TOWNSHIP

WHEREAS, the Township of Seward has submitted final engineering plans prepared by B.P. Miller Consultants to allow for the construction of a structure and parking area for the Township located on the west side of O'Brien Road, approximately 970' south of Route 52 (PIN #09-17-400-005), legally described in Exhibit "A" attached hereto and made a part hereof; and

WHEREAS, Seward Township, through their engineers at B.P. Miller Consultants, has petitioned the Planning, Building and Zoning Committee for approval of a variance to Section 301.0.2 of the Kendall County Stormwater Management Ordinance dated September 19, 2002; and

WHEREAS, Section 301.0.2 requires stormwater runoff storage facilities for a property which is being developed, which is not a single-family detached residential development and is a non-residential land use, which totals three acres or more in size and results in 45,000 square feet or more of total development; and

WHEREAS, although the total amount of impervious surface proposed will be less than 32,000 square feet, the total amount of development, including grading, will exceed 45,000 square feet; and

WHEREAS, the topography of the site and the adjacent area is very flat and the relatively small area would be very difficult to provide detention that has a positive outlet and would provide freeboard to the proposed building at the same time; and

WHEREAS, the petitioner is therefore providing stormwater management with a flat swale planted with native plants to provide water quality benefits and to provide some water quantity benefits through increased infiltration of the soil; and

WHEREAS, the Planning, Building and Zoning Committee reviewed the requests at a special PBZ meeting on August 4, 2009; and

WHEREAS, the Committee, after reviewing the request recommended approval subject to final engineering review and approval; and

WHEREAS, the County's Consulting engineer, Wills Burke Kelsey, LTD. has reviewed and recommended approval of the stormwater management variance request for the project; and

WHEREAS, the Zoning Administrator has evaluated the request against the standards for granting a variance to the Kendall County Stormwater Management Ordinance, and has recommended approval of the variation request; and

WHEREAS, a drainage ditch lies west and nearby to the property and the discharge to a formal drainage system allows flows to be managed and expected by downstream land owners and said variation should not have a negative effect on adjacent properties; and

NOW, THEREFORE, BE IT ORDAINED, the Kendall County Board hereby approves a variation to Section 301.0.2 of the Kendall County Stormwater Ordinance to be developed in accordance with the site plan depicted as "Exhibit B" attached hereto and made a part hereof. Any additional improvements made to the site that will exceed the amount of impervious surface and development as depicted in "Exhibit B" will require the review by PBZ Staff.

IN WITNESS OF, this ordinance has been enacted on August 4, 2009.

Attest:

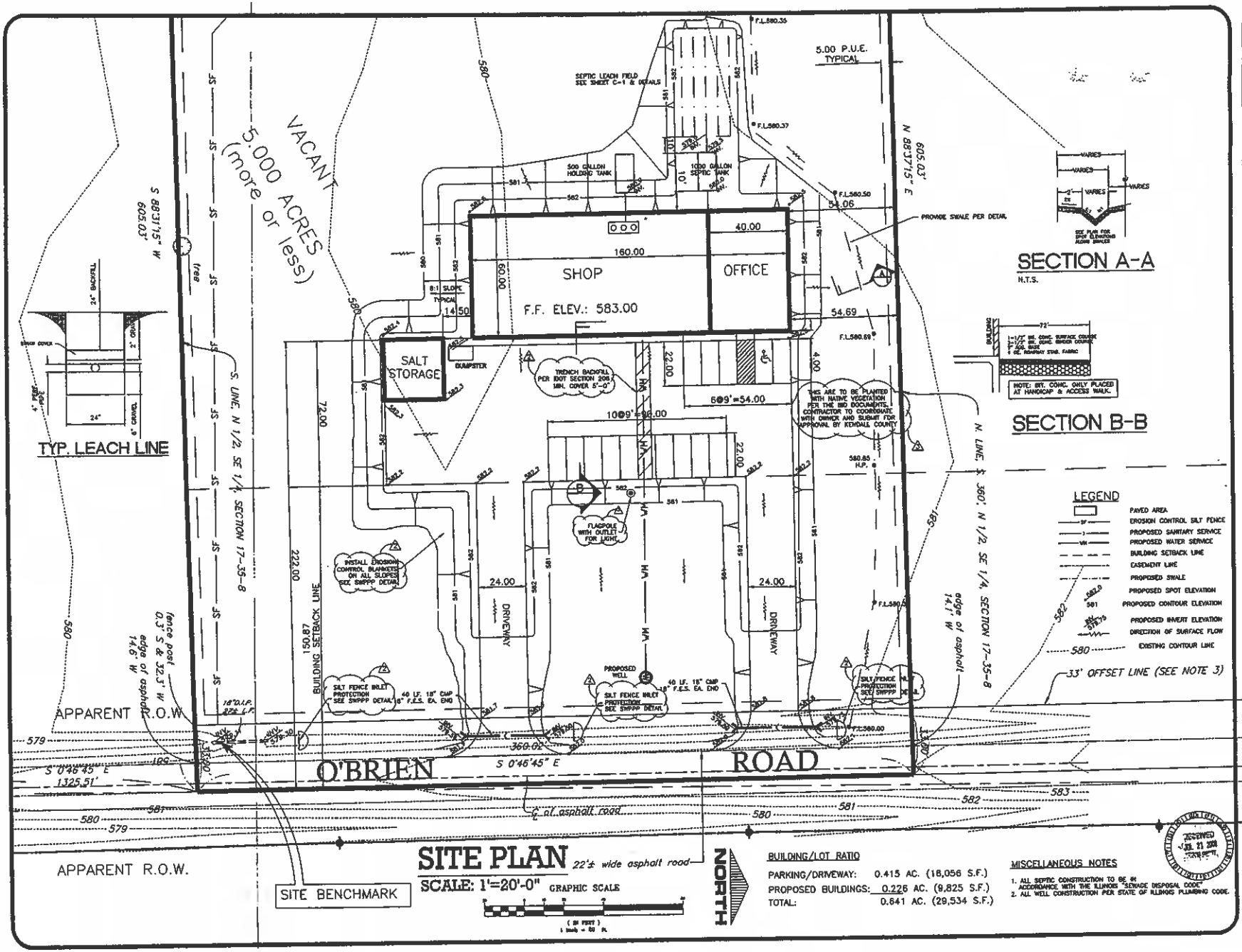
Debbie Gillette
Kendall County Clerk

Anne Vickery
Kendall County Board Chairman

EXHIBIT "A"

Legal Description

THE SOUTH 360 FEET OF THE EAST 605 FEET OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 17, IN TOWNSHIP 35 NORTH, AND IN RANGE 8 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN KENDALL COUNTY, ILLINOIS



S. F. MILLER ENGINEERS, LTD.
STRUCTURAL & CIVIL ENGINEERING
103 W. NORTH MAIN ST.
MINOOKA, IL 60447
815/467-8744

DATE: MAY 8, 2009
SCALE: AS SHOWN

GRADING/UTILITY PLAN
SEWARD TOWNSHIP
MUNICIPAL BUILDING

SEWARD TOWNSHIP
PROPOSED TOWNSHIP BUILDING
O'BRIEN ROAD
KENDALL COUNTY, ILLINOIS

SHEET
C-2

FILE NO.
09-500

EXHIBIT
B
DATE

April 26, 2024

Mr. Matt Asselmeier
Kendall County Planning, Building, & Zoning
111 West Fox Street
Yorkville, IL 60560-1498

Subject: Seward Township Maintenance Building- WBK Project 19-102.BV

Dear Mr. Asselmeier:
We have received and reviewed the following information for the subject project:

- Special Use Application prepared by Bruce Miller dated April 22, 2024 and received April 24, 2024.
- Special Use Ordinance No 2009-31.
- Site Plan for Seward township Storage Building prepared by Bruce Miller dated April 2024 and received April 24, 2024.
- Subsurface investigation Report prepared by Midwest Testing Services, Inc. dated August 25, 2009 and received April 24, 2024.

The following comments require resolution prior to plan approval and our recommendation for issuance of a stormwater permit.

Stormwater Permit

1. Submit a stormwater application with all applicable and necessary supporting documentation.
2. Provide a project narrative describing existing and proposed conditions, peak flow rates, project outfalls, etc.
3. A prior variance was granted based on the square footage of impervious surface being under the ordinance threshold requiring stormwater storage. This project will create cumulative impervious surface exceeding ordinance thresholds. Provide stormwater storage in compliance with the ordinance. Alternatives include potential for fee-in-lieu and an ordinance variance assuming all standards can be met.
4. Provide a clear accounting of cumulative impervious areas added (including gravel) and all area disturbed from the adoption of the stormwater ordinance (2012).

Site Plan

1. Provide an erosion control plan for the project.
2. Provide the swale detail noted on the plans.

3. Clarify grading between the proposed and existing buildings.
4. Provide grading and utility plans for the project.

The applicant's design professionals are responsible for performing and checking all design computations, dimensions, details, and specifications in accordance with all applicable codes and regulations, and obtaining all permits necessary to complete this work. In no way does this review relieve applicant's design professionals of their duties to comply with the law and any applicable codes and regulations, nor does it relieve the Contractors in any way from their sole responsibility for the quality and workmanship of the work and for strict compliance with the permitted plans and specifications. If you have any questions or comments, please contact us at (630) 443-7755.

S 
G

WBK Engineering, LLC

ZONING, PLATTING & ADVISORY COMMITTEE (ZPAC)
May 7, 2024 – Unapproved Meeting Minutes

PBZ Chairman Seth Wormley called the meeting to order at 9:00 a.m.

Present:
Matt Asselmeier – PBZ Department
Meagan Briganti – GIS Department
David Guritz – Forest Preserve (Arrived at 9:02 a.m.)
Brian Holdiman – PBZ Department
Fran Klaas – Highway Department
Commander Jason Langston – Sheriff's Department
Alyse Olson – Soil and Water Conservation District (Arrived at 9:02 a.m.)
Aaron Rybski – Health Department
Seth Wormley – PBZ Committee Chair

Absent:
Greg Chismark – WBK Engineering, LLC

Audience:
Tim O'Brien, Pete Fleming, Michael Korst, Jim Filotto, Ryan Solum, Bruce Miller, Alex Schuster, and Gloria Foxman

PETITIONS

Petition 24-09 Tim O'Brien on Behalf of Seward Township
Mr. Asselmeier summarized the request.

On August 18, 2009, the County Board approved Ordinance 2009-31, granting a special use permit for a governmental building and facility at 14719 O'Brien Road.

The Petitioner is proposing to amend the site plan approved in Ordinance 2009-31 by a constructing an approximately eight thousand four hundred (8,400) square foot pole-type maintenance/storage building to the west of the existing Seward Township building and installing an asphalt driveway connecting the existing parking lot to the new building. For reference, the existing building is approximately nine thousand six hundred (9,600) square feet in size and is used for maintenance, storage, and offices.

Though not shown on the site plan approved in 2009, Seward Township received a permit and installed a sign on the property in 2010. The sign is shown on the proposed site plan.

No other changes to the site were proposed.

The application materials, proposed site plan, and Ordinance 2009-31 were provided.

The property was approximately five (5) acres in size.

The existing land use was Public/Institutional.

The future land use was Commercial.
O'Brien Road was a Township Road classified as a Local Road.

There were no trails planned in the area.

There are no floodplains or wetlands on the property.

The adjacent properties were used as Agricultural.

The adjacent properties were zoned A-1.

The Land Resource Management Plan calls for the area to be Commercial, Rural Estate Residential, and Rural Residential.

Properties within one half (1/2) of a mile were zoned A-1 and A-1 SU.

There is one (1) home located within one half (1/2) mile of the subject property.

The special use to the west is for a banquet facility and related uses.

EcoCat submitted on April 23, 2024.

A NRI application was submitted on April 30, 2024.

Seward Township was emailed information on April 30, 2024.

The Lisbon-Seward Fire Protection District was emailed information on April 30, 2024.

The proposed building will have to obtain applicable building permits.

As required in the special use permit from 2009, the subject property has fifteen (15) parking spaces, including one (1) handicapped parking space. Given that the proposed amendment will not increase public visitation at the property, the number of parking spaces should be adequate.

The Petitioner submitted an application for a stormwater permit.

In 2009, the Petitioner was granted a variance to the stormwater runoff storage facilities by Ordinance 2009-26, which was provided. An amendment to this variance, the installation of stormwater storage facilities, submittal of a fee-in-lieu payment, or some combination thereof will be required. A letter from WBK Engineering was provided.

The proposed Findings of Fact were as follows:

That the establishment, maintenance, or operation of the special use will not be detrimental to or endanger the public health, safety, morals, comfort, or general welfare. The expansion will improve the public health, safety, comfort, and general welfare because the new building will allow the township to do its work inside a new facility.

That the special use will not be substantially injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted, nor substantially diminish and impair property values within the neighborhood. The Zoning classification of property within the general area of the property in question shall be considered in determining consistency with this standard. The proposed use shall make adequate provisions for appropriate buffers, landscaping, fencing, lighting, building materials, open space and other improvements necessary to insure that the proposed use does not adversely impact adjacent uses and is compatible with the surrounding area and/or the County as a whole. The existing use has been in place since 2009. The adjacent land uses are agricultural and the construction of a maintenance building will not injury the use and enjoyment of neighboring land owners.

That adequate utilities, access roads and points of ingress and egress, drainage, and/or other necessary facilities have been or are being provided. This is true except for drainage. Drainage concerns can be addressed through a stormwater permit.

That the special use shall in all other respects conform to the applicable regulations of the district in which it is located, except as such regulations may in each instance be modified by the County Board pursuant to the recommendation of the Zoning Board of Appeals. This is true.

That the special use is consistent with the purpose and objectives of the Land Resource Management Plan and other adopted County or municipal plans and policies. Seward Township has used the subject property for public/institutional purposes since 2009. Accordingly, allowing the Township expand its facilities is consistent with a goal found on Page 9-20 of the Kendall County Land Resource Management Plan which calls for “mutually supportive, non-adversarial team of municipal, township, . . . county, and other governments working toward the benefit of everyone in Kendall County.”

Staff recommended approval of the requested amendments to the existing special use permit for a governmental building and facility, pending resolution of Kendall County Stormwater Ordinance issues subject to the following conditions and restrictions:

1. The site plan attached as Group Exhibit A of Ordinance 2009-31 is hereby amended to include the submitted site plan.

2. None of buildings or structures allowed by this major amendment to an existing special use permit shall be considered agricultural structures and must secure applicable permits.

3. The remaining conditions and restrictions contained in Ordinance 2009-31 shall remain valid and effective.

4. The use allowed by this major amendment to an existing special use permit shall follow all applicable federal, state, and local laws.

5. Failure to comply with one or more of the above conditions or restrictions could result in the amendment or revocation of the special use permit.

6. If one or more of the above conditions or restrictions is declared invalid by a court of competent jurisdiction, the remaining conditions shall remain valid.

7. These major amendments to an existing special use permit shall be treated as covenants running with the land and are binding on the successors, heirs, and assigns as to the same special uses conducted on the property.

Mr. Holdiman made a motion, seconded by Mr. Guritz, to recommend approval of the proposal.

The votes were follows:
Ayes (9): Asselmeier, Briganti, Guritz, Holdiman, Klaas, Langston, Olson, Rybski, and Wormley
Nays (0): None
Abstain (0): None
Absent (1): Chismark

The motion passed.

The proposal goes to the Kendall County Regional Planning Commission on May 22, 2024.

PUBLIC COMMENT

None

ADJOURNMENT

Mr. Guritz made a motion, seconded by Mr. Rybski, to adjourn.

With a voice vote of nine (9) ayes, the motion carried.

The ZPAC, at 9:54 a.m., adjourned.

Respectfully Submitted,
Matthew H. Asselmeier, AICP, CFM
Director

Enc.

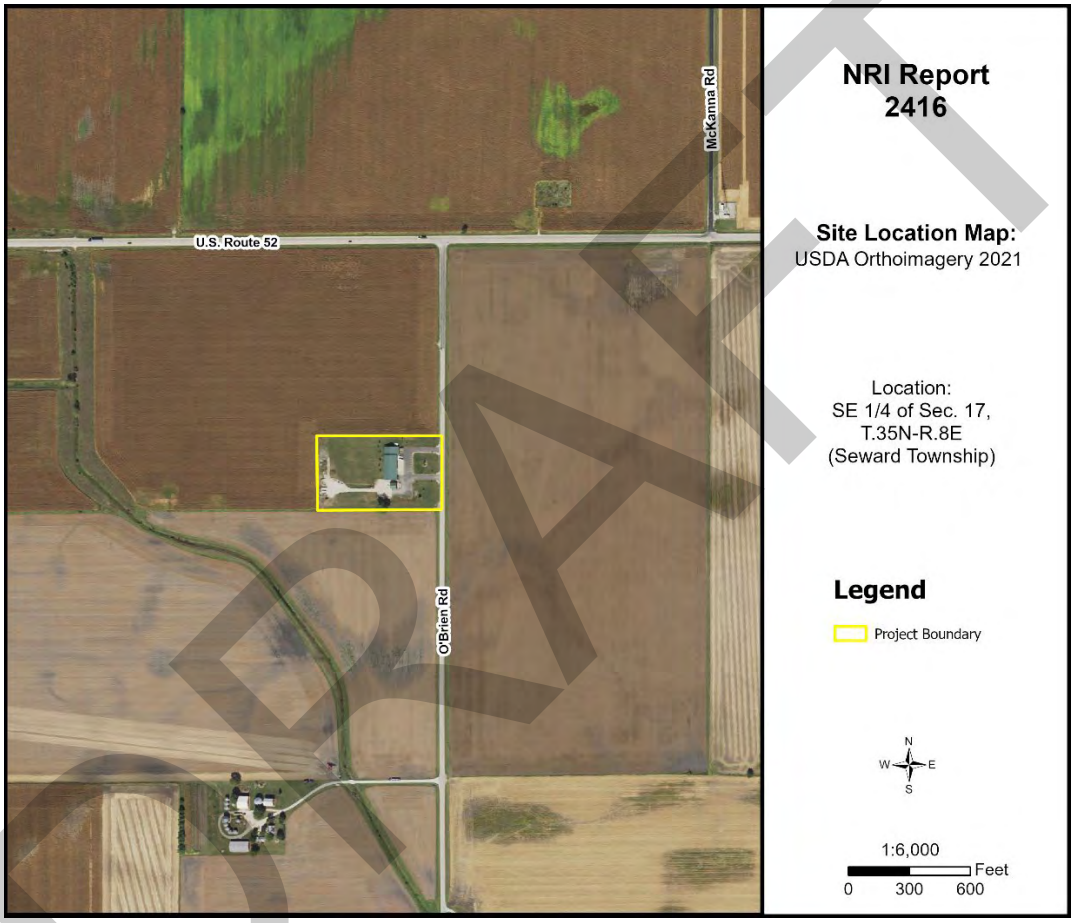
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KENDALL COUNTY
ZONING & PLATTING ADVISORY COMMITTEE
MAY 7, 2024

IF YOU WOULD LIKE TO BE CONTACTED ON FUTURE MEETINGS REGARDING THIS TOPIC, PLEASE PROVIDE YOUR ADDRESS OR EMAIL ADDRESS

NAME	ADDRESS (OPTIONAL)	EMAIL ADDRESS (OPTIONAL)
Jim O'Brien	[redacted]	
Pete Fleming		
Michael Kost		
Jim Filotto		
Ryan Solum		
BRUCE MILLER		
ALEX Schuster		

NATURAL RESOURCES INFORMATION (NRI) EXECUTIVE SUMMARY REPORT: #2416



DRAFT

May 2024

Petitioner: Seward Township

Contact: Tim O'Brien

Prepared By:

Kendall County Soil & Water Conservation District

7775A Route 47
Yorkville, Illinois 60560
Phone: (630) 553-5821 x3
Fax: (630) 553-7442
www.kendallswcd.org

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EXECUTIVE SUMMARY

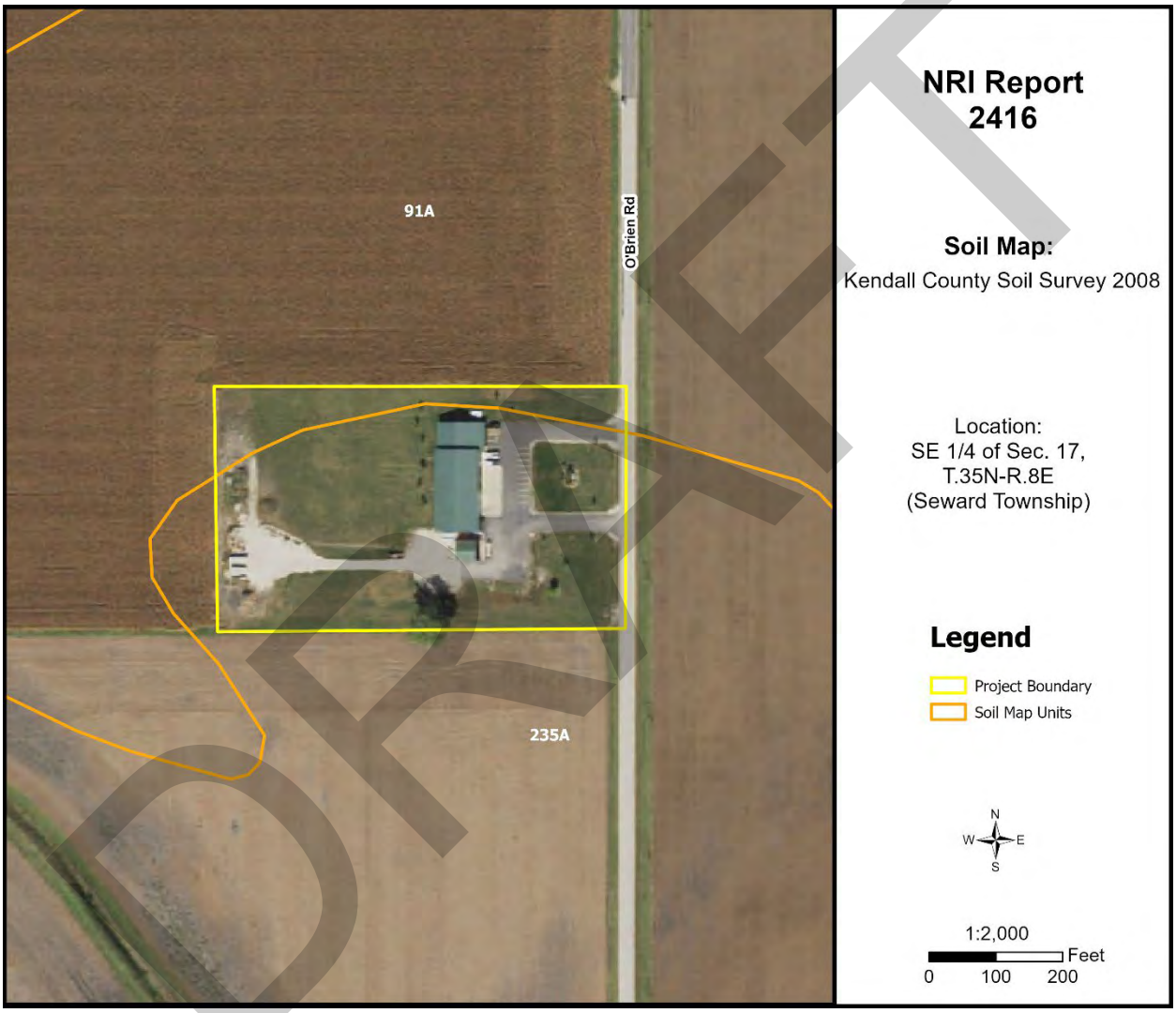
Natural Resources Information Report Number	#2416
Petitioner	Seward Township
Contact Person	Tim O'Brien
County or Municipality the Petition is Filed With	Kendall County
Location of Parcel	Southeast ¼ of Section 17, Township 36 North, Range 8 East (Seward Township) of the 3rd Principal Meridian
Project or Subdivision Name	Seward Township Highway Department Storage Building
Existing Zoning & Land Use	A-1 Agricultural District with a Special Use Permit; Seward Township Office/Maintenance Building
Proposed Zoning & Land Use	Major Amendment to the A-1 Special Use; Addition of a new storage building
Proposed Water Source	Existing well
Proposed Type of Sewage Disposal System	Existing septic
Proposed Type of Storm Water Management	Undetermined at this time – current options include an amendment to existing variance, installation of stormwater storage facilities, submittal of a fee-in-lieu payment, or combination of these will be required.
Size of Site	(+/-) 5.00 acres
Land Evaluation Site Assessment Score	191 (Land Evaluation: 86; Site Assessment: 105)

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NATURAL RESOURCE CONSIDERATIONS

SOIL INFORMATION

Based on information from the United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) 2008 Kendall County Soil Survey, this project area contains the soil types shown in Figure 1 and Table 1. Please note this does not replace the need for or results of onsite soil testing. If completed, please refer to onsite soil test results for planning/engineering purposes.



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Figure 1: Soil Map

Table 1: Soils Information

Soil Type	Soil Name	Drainage Class	Hydrologic Group	Hydric Designation	Farmland Designation	Acres	% Area
91A	Swygert silty clay loam, 0-2% slopes	Somewhat Poorly Drained	C/D	Non-Hydric w/ Hydric Inclusions	Prime Farmland	0.7	14.3%
235A	Bryce silty clay, 0-2% slopes	Poorly Drained	C/D	Hydric	Prime Farmland if Drained	4.3	85.7%

Hydrologic Soil Groups – Soils have been classified into four (A, B, C, D) hydrologic groups based on runoff characteristics due to rainfall. If a soil is assigned to a dual hydrologic group (A/D, B/D or C/D), the first letter is for drained areas and the second letter is for undrained areas.

- **Hydrologic group A:** Soils have a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.
- **Hydrologic group B:** Soils have a moderate infiltration rate when thoroughly wet, consist chiefly of moderately deep to deep, moderately well drained to well drained soils that have a moderately fine to moderately coarse texture. These soils have a moderate rate of water transmission.
- **Hydrologic group C:** Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.
- **Hydrologic group D:** Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Hydric Soils – A hydric soil is one that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile that supports the growth or regeneration of hydrophytic vegetation. Soils with hydric inclusions have map units dominantly made up of non-hydric soils that may have inclusions of hydric soils in the lower positions on the landscape. Of the soils found onsite, one is classified as hydric soil (235A Bryce silty clay), and one is classified as non-hydric soil with hydric inclusions likely (91A Swygert silty clay loam).

Prime Farmland – Prime farmland is land that has the best combination of physical and chemical characteristics for agricultural production. Prime farmland soils are an important resource to Kendall County and some of the most productive soils in the United States occur locally. Of the soils found onsite, one is designated as prime farmland (91A Swygert silty clay loam), and one is designated as prime farmland if drained (235A Bryce silty clay).

Soil Water Features – Table 2, below, gives estimates of various soil water features that should be taken into consideration when reviewing engineering for a land use project.

Table 2: Water Features

Map Unit	Hydrologic Group	Surface Runoff	Water Table	Ponding	Flooding
91A	C/D	Medium	January - May **Upper Limit**: 1.0'-2.0' **Lower Limit:** 2.9'-4.8'	January – December **Frequency**: None	January – December **Frequency**: None
235A	C/D	Negligible	January - May **Upper Limit**: 0.0'-1.0' **Lower Limit:** 6.0'	January – May **Surface Water Depth:** 0.0'-0.5' **Duration**: Brief (2 to 7 days) **Frequency**: Frequent	January – December **Frequency**: None

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Surface Runoff – Refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based upon slope, climate and vegetative cover and indicates relative runoff for very specific conditions (it is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal). The surface runoff classes are identified as: negligible, very low, low, medium, high, and very high.

Months – The portion of the year in which a water table, ponding, and/or flooding is most likely to be a concern.

Water Table – Water table refers to a saturated zone in the soil and the data indicates, by month, depth to the top (upper limit) and base (lower limit) of the saturated zone in most years. These estimates are based upon observations of the water table at selected sites and on evidence of a saturated zone (grayish colors or mottles (redoximorphic features)) in the soil. Note: A saturated zone that lasts for less than a month is not considered a water table.

Ponding – Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Duration is expressed as very brief (less than 2 days), brief (2 to 7 days), long (7 to 30 days), very long (more than 30 days). Frequency is expressed as none (ponding is not probable), rare (unlikely but possible under unusual weather conditions), occasional (occurs, on average, once or less in 2 years) and frequent (occurs, on average, more than once in 2 years).

Flooding – Temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding. Duration is expressed as brief (2 to 7 days) and frequent meaning that it is likely to occur often under normal weather conditions.

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SOIL LIMITATIONS

According to the USDA-NRCS, soil properties influence the development of sites, including the selection of the site, the design of the structure, construction, performance after construction and maintenance. This report gives ratings for proposed uses in terms of limitations and restrictive features. The tables list only the most restrictive features. Ratings are based on the soil in an undisturbed state, that is, no unusual modification occurs other than that which is considered normal practice for the rated use. Even though soils may have limitations, an engineer may alter soil features or adjust building plans for a structure to compensate for most degrees of limitations. The final decision in selecting a site for a particular use generally involves weighing the costs for site preparation and maintenance.

- **Not Limited**: Indicates that the soil has features that are very favorable for the specified use; good performance and low maintenance can be expected.
- **Somewhat Limited**: Indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation; fair performance and moderate maintenance can be expected.
- **Very Limited**: Indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures; poor performance and high maintenance can be expected.

Limitations are listed below for small commercial buildings, shallow excavations, lawns/landscaping, and local roads & streets. Please note this information is based on soils in an undisturbed state as compiled in the USDA-NRCS 2008 Soil Survey of Kendall County, IL. This does not replace the need for site specific soil testing or results of onsite soil testing.

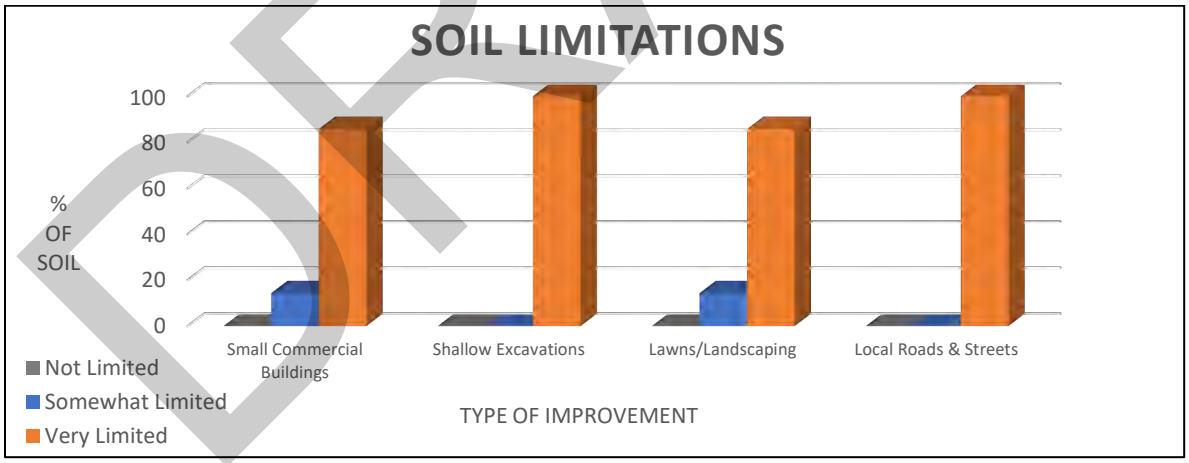


Figure 2: Soil Limitations

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Table 3: Building Limitations

Soil Type	Small Commercial Buildings	Shallow Excavations	Lawns & Landscaping	Local Roads & Streets	Acres	%
91A	**Somewhat Limited:** Depth to saturated zone Shrink-swell	**Very Limited:** Depth to saturated zone Too clayey Dusty Unstable excavation walls Ponding	**Somewhat Limited:** Depth to saturated zone Dusty	**Very Limited:** Low strength Shrink-swell Depth to saturated zone Frost action Ponding	0.7	14.3%
235A	**Very Limited:** Ponding Depth to saturated zone Shrink-swell	**Very Limited**: Ponding Depth to saturated zone Too clayey Unstable excavation walls Dusty	**Very Limited:** Ponding Depth to saturated zone Too clayey Dusty Droughty	**Very Limited:** Ponding Depth to saturated zone Shrink-swell Frost action Low strength	4.3	85.7%
% Very Limited	**85.7%**	**100%**	**85.7%**	**100%**		

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Figure 3A: Map of Building Limitations - Small Commercial Buildings & Lawns/Landscaping

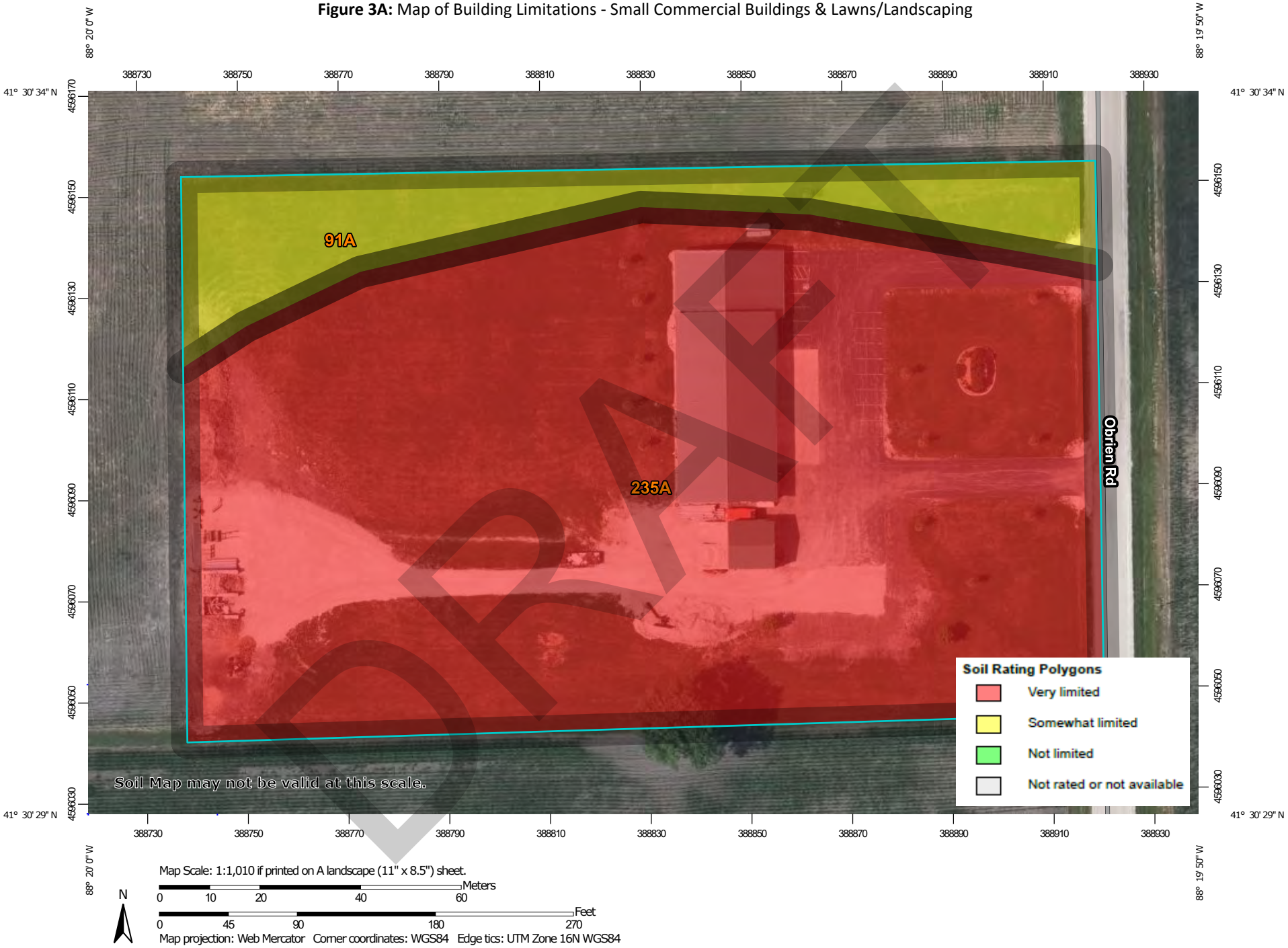
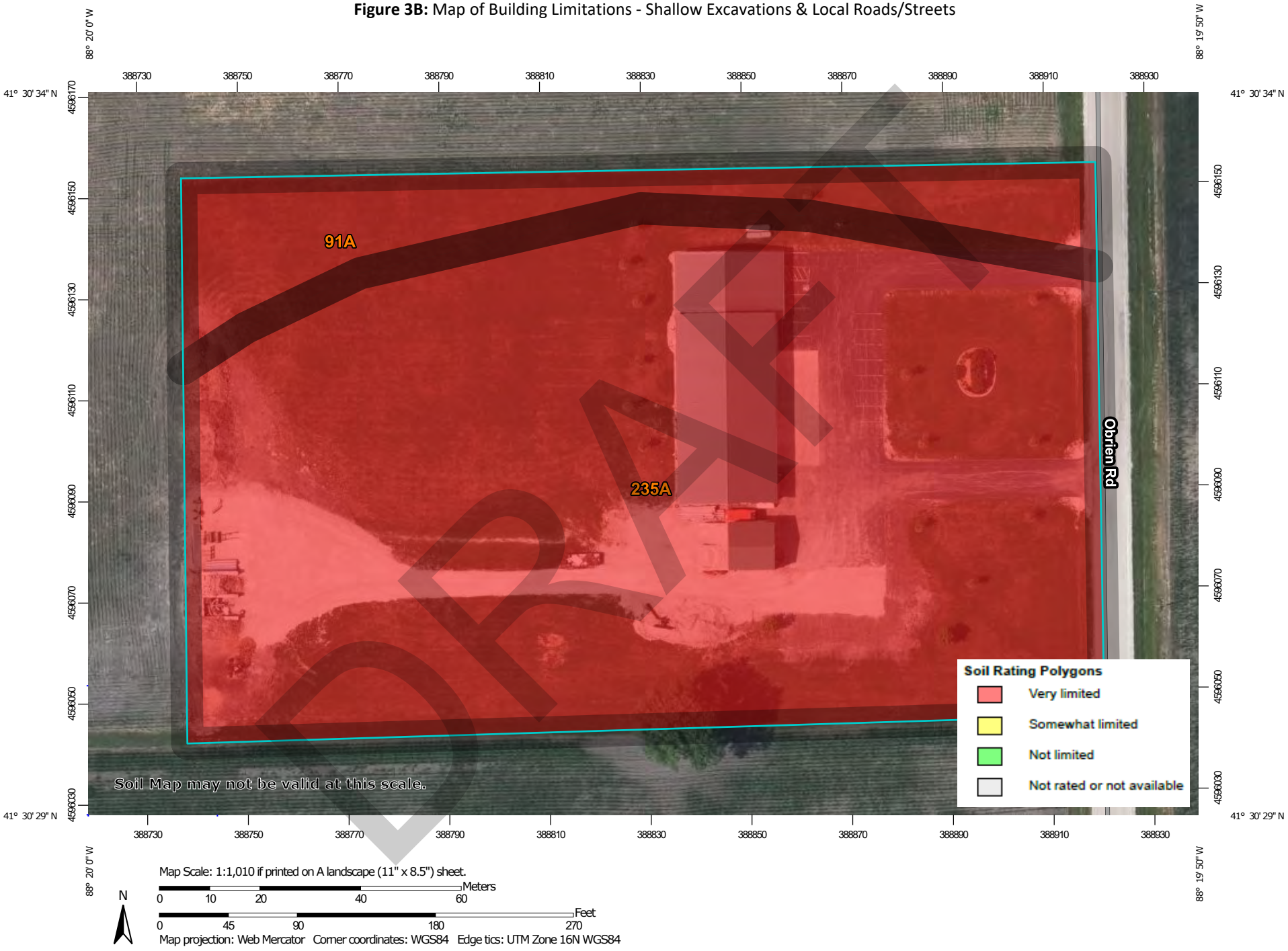


Figure 3B: Map of Building Limitations - Shallow Excavations & Local Roads/Streets



KENDALL COUNTY LAND EVALUATION AND SITE ASSESSMENT (LESA)

Decision-makers in Kendall County use the Land Evaluation and Site Assessment (LESA) system to determine the suitability of a land use change and/or a zoning request as it relates to agricultural land. The LESA system was developed by the United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) and takes into consideration local conditions such as physical characteristics of the land, compatibility of surrounding land-uses, and urban growth factors. The LESA system is a two-step procedure that includes:

- **Land Evaluation (LE)**: The soils of a given area are rated and placed in groups ranging from the best to worst suited for a stated agriculture use, cropland, or forestland. The best group is assigned a value of 100 and all other groups are assigned lower values. The Land Evaluation value accounts for 1/3 of the total score and is based on data from the Kendall County Soil Survey. The Kendall County Soil and Water Conservation District is responsible for this portion of the LESA system.
- **Site Assessment (SA)**: The site is numerically evaluated according to important factors that contribute to the quality of the site. Each factor selected is assigned values in accordance with the local needs and objectives. The Site Assessment value is based on a 200-point scale and accounts for 2/3 of the total score. The Kendall County LESA Committee is responsible for this portion of the LESA system.

Table 4A: Land Evaluation Computation

Soil Type	Value Group	Relative Value	Acres*	Product (Relative Value x Acres)
91A	4	79	0.7	55.3
235A	3	87	4.3	374.1
Totals			**5.0**	**429.4**
LE Calculation			(Product of relative value / Total Acres) 429.4 / 5.0 = 85.9	
LE Score			**LE = 86**	

*Acreage listed in this chart provides a generalized representation and may not precisely reflect exact acres of each soil type.

The Land Evaluation score for this site is 86, indicating that this site is currently designated as land that is well suited for agricultural uses considering the Land Evaluation score is above 80.

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Table 4B: Site Assessment Computation

A.	**Agricultural Land Uses**	**Points**
	1. Percentage of area in agricultural uses within 1.5 miles of site. (20-10-5-0)	20
	2. Current land use adjacent to site. (30-20-15-10-0)	30
	3. Percentage of site in agricultural production in any of the last 5 years. (20-15-10-5-0)	0
	4. Size of site. (30-15-10-0)	0
B.	**Compatibility / Impact on Uses**	
	1. Distance from city or village limits. (20-10-0)	20
	2. Consistency of proposed use with County Land Resource Management Concept Plan and/or municipal comprehensive land use plan. (20-10-0)	0
	3. Compatibility of agricultural and non-agricultural uses. (15-7-0)	0
C.	**Existence of Infrastructure**	
	1. Availability of public sewage system. (10-8-6-0)	10
	2. Availability of public water system. (10-8-6-0)	10
	3. Transportation systems. (15-7-0)	7
	4. Distance from fire protection service. (10-8-6-2-0)	8
	Site Assessment Score:	**105**

Land Evaluation Value: 86 + **Site Assessment Value:** 105 = **LESA Score: 191**

The table below shows the level of protection for the proposed project site based on the LESA Score.

Table 5: LESA Score Summary

LESA SCORE	LEVEL OF PROTECTION
0-200	Low
201-225	Medium
226-250	High
251-300	Very High

The LESA Score for this site is 191, which indicates a low level of protection for the proposed project site. Selecting the project site with the lowest total points will generally protect the best farmland located in the most viable areas and maintain and promote the agricultural industry in Kendall County.

This site was reviewed by the Kendall County SWCD in 2009 when the Seward Township office/maintenance building was proposed. At that time, the site had a LESA Score of 210, which indicated a medium level of protection. The current LESA score went down as result of the site not being in agricultural production in any of the last 5 years (Site Assessment factor A.3).

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WATERSHEDS & SUBWATERSHEDS

A watershed is the area of land that drains into a specific point including a stream, lake, or other body of water. High points on the Earth's surface, such as hills and ridges define watersheds. When rain falls in the watershed, it flows across the ground towards a stream or lake. Rainwater carries pollutants such as oils, pesticides, and soil.

Everyone lives in a watershed. Their actions can impact natural resources and people living downstream. Residents can minimize this impact by being aware of their environment and the implications of their activities, implementing practices recommended in watershed plans, and educating others about their watershed.

The following are recommendations to developers for protection of this watershed: Preserve open space; maintain wetlands as part of development; use natural water management; prevent soil from leaving a construction site; protect subsurface drainage; use native vegetation; retain natural features; mix housing styles and types; decrease impervious surfaces; reduce area disturbed by mass grading; shrink lot size and create more open space; maintain historical and cultural resources; treat water where it falls; preserve views; and establish and link trails.

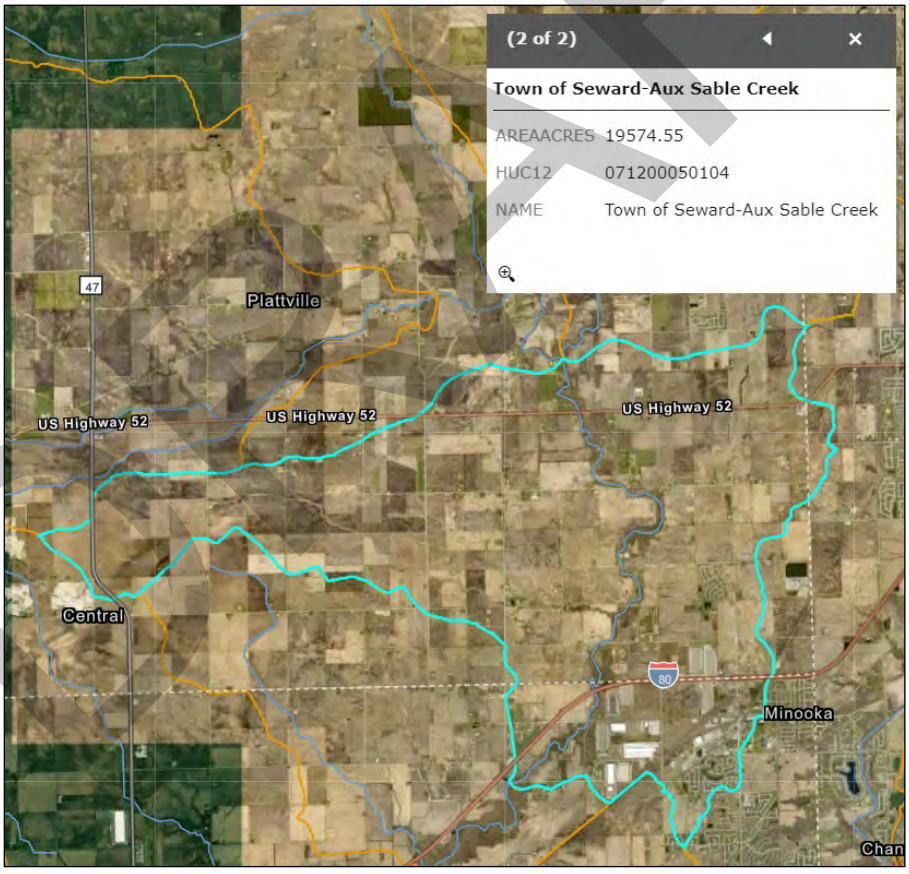


Figure 4: Sub Watershed Map

This site is located within the Upper Illinois River watershed and the Town of Seward – Aux Sable Creek sub watershed (HUC 12 – 071200050104). The Town of Seward – Aux Sable Creek sub watershed comprises 19,574.55 acres.

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WETLANDS

The U.S. Fish & Wildlife Service's National Wetland Inventory map indicates that mapped wetlands/waters are not present on the proposed project site. A riverine waterway is mapped to the southwest and a freshwater emergent wetland is mapped to the northeast of the site. To determine if a wetland is present, a wetland delineation specialist, who is recognized by the U.S. Army Corps of Engineers, should determine the exact boundaries and value of the wetlands.

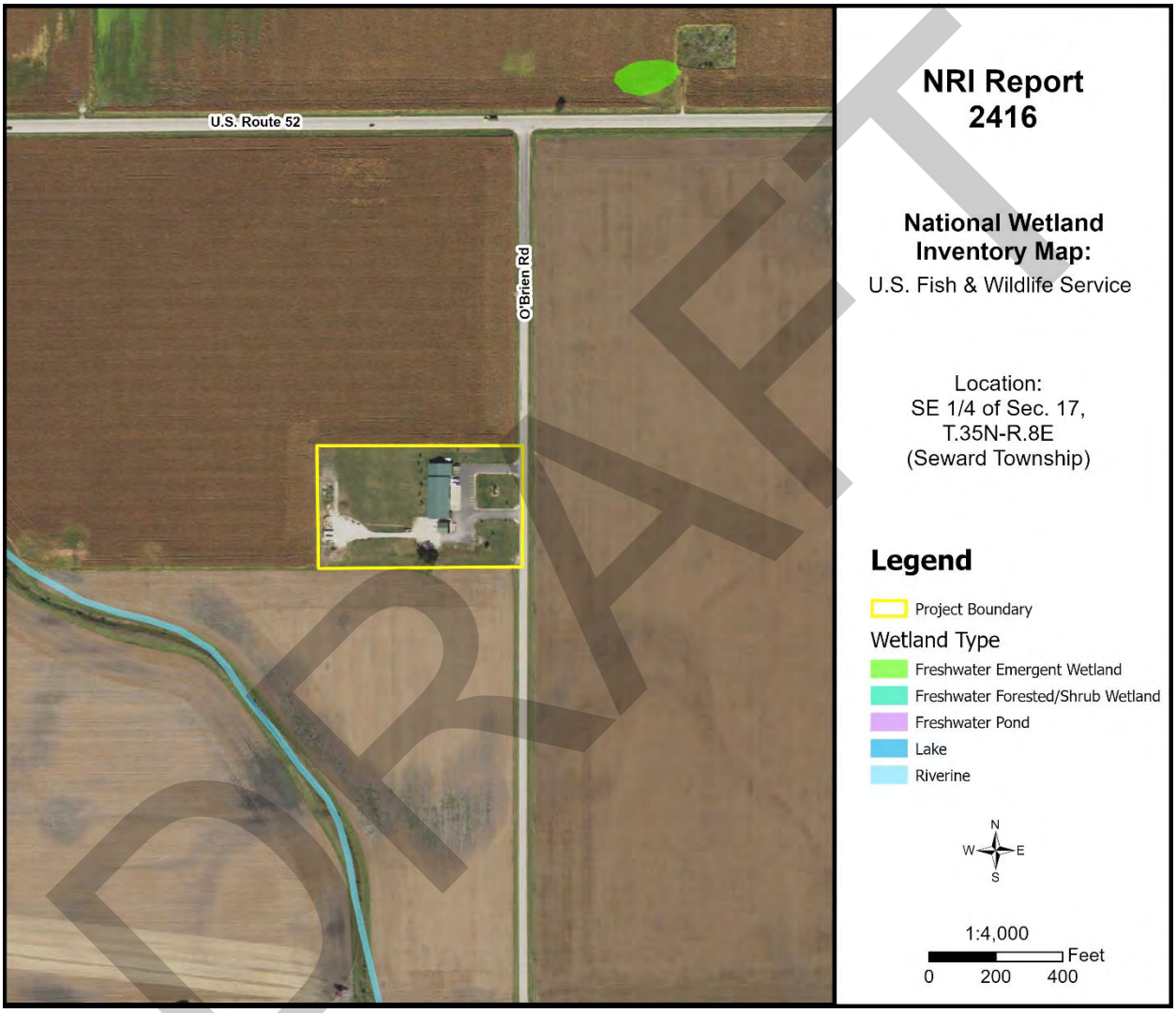


Figure 5: Wetland Map

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FLOODPLAIN

The Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) for Kendall County, Community Panel No. 17093C0140H (effective date 1/8/2014) was reviewed to determine the presence of floodplain and floodway areas within the project site. According to the map, the parcel does not contain areas of floodplain or floodway. It is mapped as Zone X, an area of minimal flood hazard determined to be outside of the 0.2% annual chance flood.

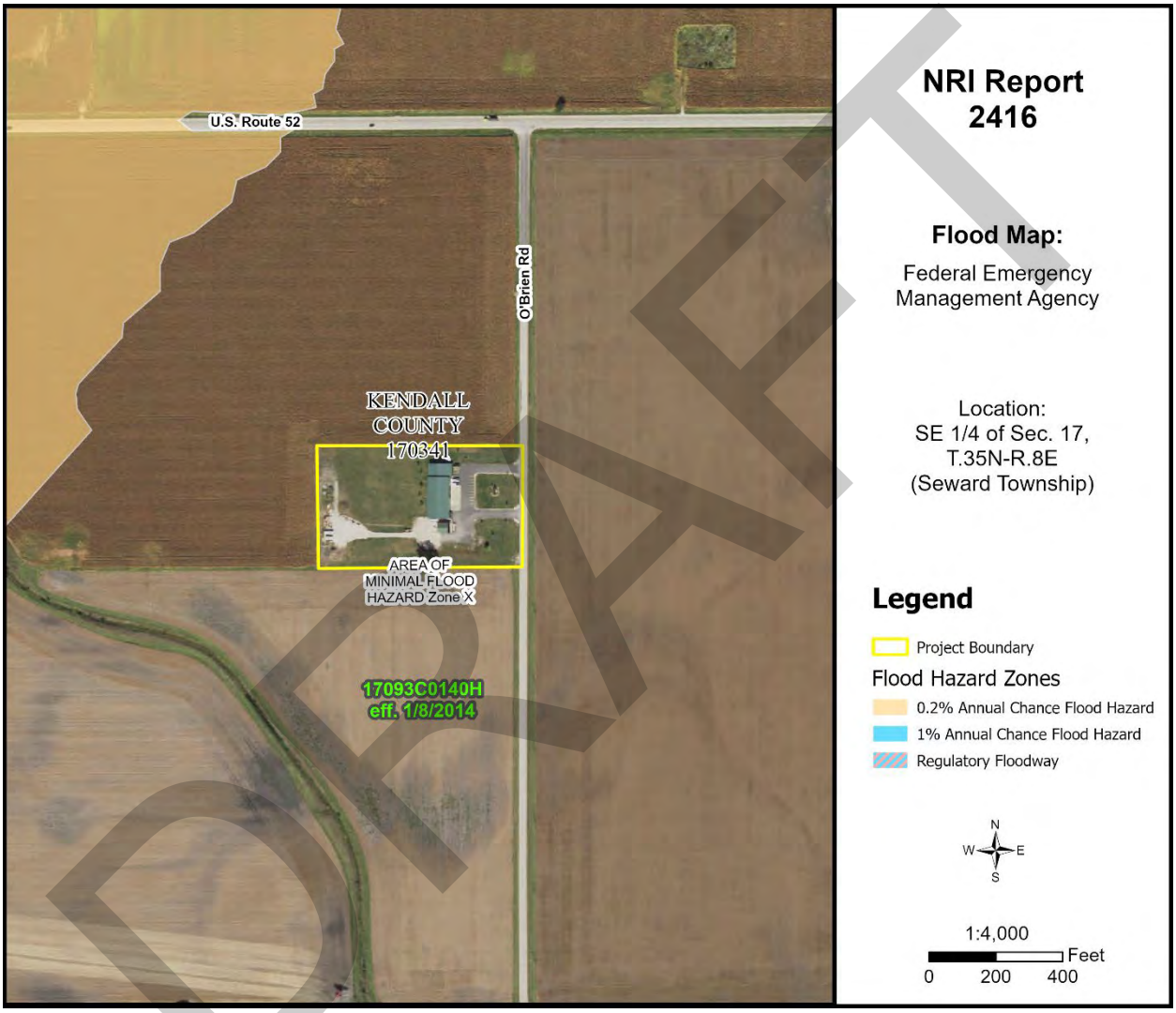


Figure 6: Flood Map

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TOPOGRAPHY

The parcel contains soils with slopes of 0-2% and is at an elevation of approximately 580'-584' above sea level. The highest point is at the western end and the lowest points are at the southern and eastern ends of the parcel.

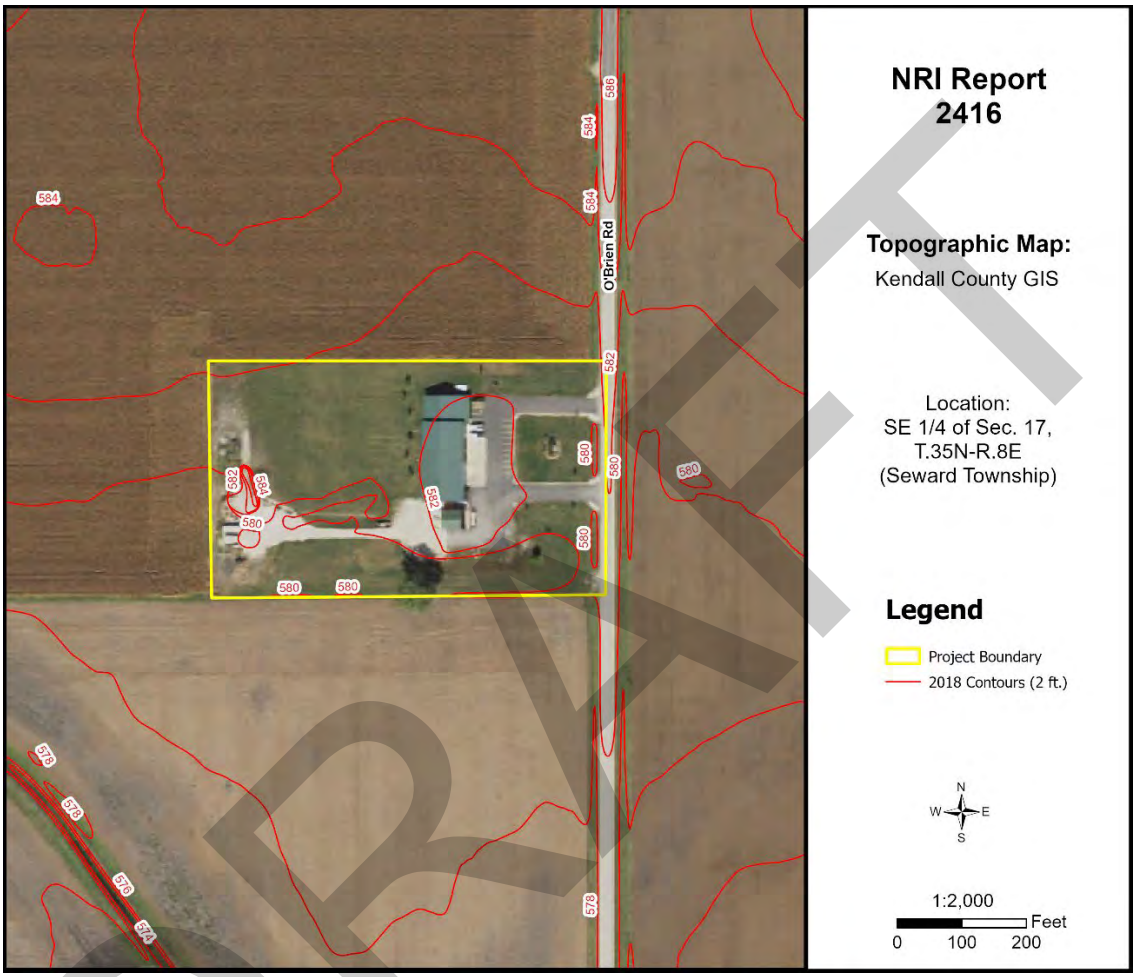


Figure 7: Topographic Map

SEDIMENT AND EROSION CONTROL

Development on this site should include an erosion and sediment control plan in accordance with local, state, and federal regulations. Soil erosion on construction sites is a resource concern because suspended sediment from areas undergoing development is a primary nonpoint source of water pollution. Please consult the *Illinois Urban Manual* (https://illinoisurbanmanual.org/) for appropriate best management practices.

STORMWATER POLLUTION

A National Pollutant Discharge Elimination System (NPDES) permit (Permit No. ILR10) from the Illinois Environmental Protection Agency (IEPA) is required for stormwater discharges from construction sites that will disturb 1 or more acres of land. Conditions of the NPDES ILR10 permit require the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) to reduce stormwater pollutants on the construction site before they can cause environmental issues.

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LAND USE FINDINGS

The Kendall County Soil and Water Conservation District (SWCD) Board has reviewed the proposed site plans for petitioner Seward Township. The petitioner is requesting a major amendment to an A-1 Agricultural Special Use Permit from Kendall County for the addition of a storage building on the parcel (Parcel Index Number 09-17-400-005). The site is in Section 17 of Seward Township (T.35N – R.8E), Kendall County in the 3rd Principal Meridian. This site was previously reviewed by the Kendall County SWCD in 2009 when the Seward Township office/maintenance building was proposed (NRI Report 0908). Based on the information provided by the petitioner and a review of natural resource related data available to the Kendall County SWCD, the SWCD Board presents the following information.

The Kendall County SWCD has always had the opinion that Prime Farmland should be preserved whenever feasible due to their highly productive qualities for growing agriculturally important crops in our community. This site is a governmental facility building that hasn't been farmed in several years, however, the soils onsite are designated as prime farmland or prime farmland if drained. A land evaluation (LE), which is a part of the Land Evaluation and Site Assessment (LESA), was conducted on this parcel. The soils on this parcel scored an 86 out of a possible 100 points indicating that the soils are well suited for agricultural uses. The total LESA score for this site is 191 out of a possible 300, which indicates a low level of protection for the proposed project site. Selecting the project site with the lowest total points will generally protect the best farmland located in the most viable areas and maintain and promote the agricultural industry in Kendall County.

Soils found on the project site are rated for specific uses and can have potential limitations. Soil types with severe limitations do not preclude the ability to develop the site for the proposed use, but it is important to note the limitation that may require soil reclamation, special design/engineering, or maintenance to obtain suitable soil conditions to support development with significant limitations. This report indicates that for soils located on the parcel, 100% are classified as very limited for supporting shallow excavations and local roads & streets and 85.7% are classified as very limited for supporting small commercial buildings and lawns/landscaping. The remaining soils are considered somewhat limited for these uses. This information is based on the soil in an undisturbed state. If the scope of the project may include the use of onsite septic systems, please consult with the Kendall County Health Department.

This site is located within the Upper Illinois River watershed and the Town of Seward – Aux Sable Creek sub watershed. If development occurs on this site, please ensure that a soil erosion and sediment control plan be implemented during construction. It is critical to have vegetative cover during and after construction to protect the soil from erosion. Sediment may become a primary non-point source of pollution; eroded soils during the construction phase can create unsafe conditions on roadways, degrade water quality and destroy aquatic ecosystems lower in the watershed.

For intense use it is recommended that a drainage tile survey be completed on the parcel to locate subsurface drainage tile. That survey should be taken into consideration during the land use planning process. Drainage tile expedites drainage and facilitates farming. It is imperative that these drainage tiles remain undisturbed. Impaired tile may affect a few acres or hundreds of acres of drainage.

The information that is included in this Natural Resources Information Report is to assure that the landowners take into full consideration the limitations of the site. Guidelines and recommendations are also a part of this report and should be considered in the planning process. The Natural Resource Information Report is required by the Illinois Soil and Water Conservation District Act (Ill. Complied Statues, Ch. 70, Par 405/22.02a).

_____ _____

SWCD Board Representative Date

DRAFT

KENDALL COUNTY
REGIONAL PLANNING COMMISSION

Kendall County Office Building
Rooms 209 and 210
111 W. Fox Street, Yorkville, Illinois

Unapproved - Meeting Minutes of May 22, 2024 - 7:00 p.m.

Chairman Bill Ashton called the meeting to order at 7:00 p.m.

ROLL CALL
Members Present: Bill Ashton, Eric Bernacki, Tom Casey, Dave Hamman (Arrived at 7:08 p.m.), Larry Nelson, Ruben Rodriguez, Claire Wilson, and Seth Wormley (Arrived at 7:40 p.m.)
Members Absent: Karin McCarthy-Lange and Bob Stewart
Staff Present: Matthew H. Asselmeier, Director, and Wanda A. Rolf, Office Assistant
Others Present: Tim O'Brien, Dave Koehler, Joan Soltwisch, Marcia Rousonelo, Ray Jackinowski, Kyle Barry, Erin Bowen, Katherine Carlson, Tom Huddleston, Paul Yearsley, Joy Lieser, Greg Henderson, Carrie Kennedy, Andrew Daylor, Kristine Henderson, Michael Korst, Bruce Miller, and Gloria Foxman

PETITIONS
Petition 24-09 Tim O'Brien on Behalf of Seward Township
Mr. Asselmeier summarized the request.

On August 18, 2009, the County Board approved Ordinance 2009-31, granting a special use permit for a governmental building and facility at 14719 O'Brien Road.

The Petitioner is proposing to amend the site plan approved in Ordinance 2009-31 by a constructing an approximately eight thousand four hundred (8,400) square foot pole-type maintenance/storage building to the west of the existing Seward Township building and installing an asphalt driveway connecting the existing parking lot to the new building. For reference, the existing building is approximately nine thousand six hundred (9,600) square feet in size and is used for maintenance, storage, and offices.

Though not shown on the site plan approved in 2009, Seward Township received a permit and installed a sign on the property in 2010. The sign is shown on the proposed site plan.

No other changes to the site were proposed.

The application materials, proposed site plan, and Ordinance 2009-31 were provided.

The property was approximately five (5) acres in size.

The existing land use was Public/Institutional.

The future land use was Commercial.

O'Brien Road was a Township Road classified as a Local Road.

There were no trails planned in the area.

There are no floodplains or wetlands on the property.

The adjacent properties were used as Agricultural.

The adjacent properties were zoned A-1.

The Land Resource Management Plan calls for the area to be Commercial, Rural Estate Residential, and Rural Residential.

Properties within one half (1/2) of a mile were zoned A-1 and A-1 SU.

There is one (1) home located within one half (1/2) mile of the subject property.

The special use to the west is for a banquet facility and related uses.

EcoCat submitted on April 23, 2024, and consultation was terminated.

A NRI application was submitted on April 30, 2024. The LESA Score was 191 indicating a low level of protection.

Seward Township was emailed information on April 30, 2024.

The Lisbon-Seward Fire Protection District was emailed information on April 30, 2024. No comments received.

ZPAC reviewed the proposal at their meeting on May 7, 2024. ZPAC recommended approval of the proposal by a vote of nine (9) in favor and zero (0) in opposition with one (1) member absent. The minutes of the meeting were provided.

Member Wormley arrived at this time (7:40 p.m.).

The proposed building will have to obtain applicable building permits.

As required in the special use permit from 2009, the subject property has fifteen (15) parking spaces, including one (1) handicapped parking space. Given that the proposed amendment will not increase public visitation at the property, the number of parking spaces should be adequate.

The Petitioner submitted an application for a stormwater permit.

In 2009, the Petitioner was granted a variance to the stormwater runoff storage facilities by Ordinance 2009-26, which was provided. An amendment to this variance, the installation of stormwater storage facilities, submittal of a fee-in-lieu payment, or some combination thereof will be required. A letter from WBK Engineering was provided. The Petitioner was considering a variance to the Stormwater Management Ordinance, but they were looking to add a stormwater detention, which was not shown on the site plan.

The proposed Findings of Fact were as follows:

That the establishment, maintenance, or operation of the special use will not be detrimental to or endanger the public health, safety, morals, comfort, or general welfare. The expansion will improve the public health, safety, comfort, and general welfare because the new building will allow the township to do its work inside a new facility.

That the special use will not be substantially injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted, nor substantially diminish and impair property values within the neighborhood. The Zoning classification of property within the general area of the property in question shall be considered in determining consistency with this standard. The proposed use shall make adequate provisions for appropriate buffers, landscaping, fencing, lighting, building materials, open space and other improvements necessary to insure that the proposed use does not adversely impact adjacent uses and is compatible with the surrounding area and/or the County as a whole. The existing use has been in place since 2009. The adjacent land uses are agricultural and the construction of a maintenance building will not injury the use and enjoyment of neighboring land owners.

That adequate utilities, access roads and points of ingress and egress, drainage, and/or other necessary facilities have been or are being provided. This is true except for drainage. Drainage concerns can be addressed through a stormwater permit.

That the special use shall in all other respects conform to the applicable regulations of the district in which it is located, except as such regulations may in each instance be modified by the County Board pursuant to the recommendation of the Zoning Board of Appeals. This is true.

That the special use is consistent with the purpose and objectives of the Land Resource Management Plan and other adopted County or municipal plans and policies. Seward Township has used the subject property for public/institutional purposes since 2009. Accordingly, allowing the Township expand its facilities is consistent with a goal found on Page 9-20 of the Kendall County Land Resource Management Plan which calls for "mutually supportive, non-adversarial team of municipal, township, . . . county, and other governments working toward the benefit of everyone in Kendall County."

Staff recommended approval of the requested amendments to the existing special use permit for a governmental building and facility, pending resolution of Kendall County Stormwater Ordinance issues subject to the following conditions and restrictions:

1. The site plan attached as Group Exhibit A of Ordinance 2009-31 is hereby amended to include the submitted site plan.

2. None of buildings or structures allowed by this major amendment to an existing special use permit shall be considered agricultural structures and must secure applicable permits.
3. The remaining conditions and restrictions contained in Ordinance 2009-31 shall remain valid and effective.
4. The use allowed by this major amendment to an existing special use permit shall follow all applicable federal, state, and local laws.
5. Failure to comply with one or more of the above conditions or restrictions could result in the amendment or revocation of the special use permit.

6. If one or more of the above conditions or restrictions is declared invalid by a court of competent jurisdiction, the remaining conditions shall remain valid.

7. These major amendments to an existing special use permit shall be treated as covenants running with the land and are binding on the successors, heirs, and assigns as to the same special uses conducted on the property.

Member Wilson requested that her earlier comments apply to this Petition (Member Wilson stated that, as a representative of Seward Township, she felt Seward Township proposed the change to the site plan in awful manner with unclear notice and little information provided prior to the meeting. She had no objection to expanding the building.)

Member Nelson asked if large quantities of salt would be stored inside the building. Bruce Miller, Engineer for Seward Township, said salt storage was already available at the property. Salt would not be stored in the building.

Member Nelson made a motion, seconded by Member Rodriguez, to recommend approval of the major amendment to an existing special use permit with an amendment to include a site detention area on the site plan.

The votes were as follows:
Ayes (8): Ashton, Bernacki, Casey, Hamman, Nelson, Rodriguez, Wilson, and Wormley
Nays (0): None
Absent (2): McCarthy-Lange and Stewart
Abstain (0): None

The proposal goes to the Kendall County Zoning Board of Appeals on May 28, 2024.

CITIZENS TO BE HEARD/PUBLIC COMMENT
None

OTHER BUSINESS/ANNOUNCEMENTS
Mr. Asselmeier reported that Petition 24-10 and 24-11 will be on the agenda for the June meeting.

ADJOURNMENT
Member Wilson made a motion, seconded by Member Nelson, to adjourn. With a voice vote of seven (7) ayes, the motion carried.

The Kendall County Regional Planning Commission meeting adjourned at 9:59 p.m.

Respectfully submitted by,
Wanda A. Rolf, Administrative Assistant

KENDALL COUNTY
REGIONAL PLANNING COMMISSION
MAY 22, 2024

IF YOU WOULD LIKE TO BE CONTACTED ON FUTURE MEETINGS REGARDING THIS TOPIC, PLEASE PROVIDE YOUR ADDRESS OR EMAIL ADDRESS

NAME	ADDRESS (OPTIONAL)	EMAIL ADDRESS (OPTIONAL)
Jeri O'Brien	[redacted]	
DAVE Koehler		
BRUCE MILLER		
Joan Sotkiewicz		
Marcia Rousonelos		
Ray Sackenreuter 5124 RT 52		
Kyle Barry		
Gloria Foxman		

KENDALL COUNTY
REGIONAL PLANNING COMMISSION
MAY 22, 2024

IF YOU WOULD LIKE TO BE CONTACTED ON FUTURE MEETINGS REGARDING THIS TOPIC, PLEASE PROVIDE YOUR ADDRESS OR EMAIL ADDRESS

NAME	ADDRESS (OPTIONAL)	EMAIL ADDRESS (OPTIONAL)
Erin Bowen	[redacted]	
Katherine Carlson		
TOM HUDDLESTON		
Paul Yeardley		
DAVE Koehler		
Jay Lieser		

DEPARTMENT OF PLANNING, BUILDING & ZONING
111 West Fox Street • Room 203
Yorkville, IL • 60560
(630) 553-4141 Fax (630) 553-4179

MEMORANDUM

To: Kendall County Zoning Board of Appeals
From: Matthew H. Asselmeier, AICP, CFM, Planning Director
Date: 5/23/2024
Subject: New Proposed Future Land Use Map for Seward Township

In an effort to preserve the agricultural character of the Township and protect the Aux Sable Creek Watershed, Seward Township has proposed the attached new Future Land Use Map. The existing Future Land Use Map is also attached.

The proposed changes are as follows:

1. All of the land west Arbeiter and Hare Roads will be reclassified to Agricultural. The Commercial area at the intersection of Route 52 and Grove Road will be retained and the Commercial area at the intersection of Arbeiter Road and Route 52 will also be retained.

2. The Seward Township Building on O'Brien Road, the church on Van Dyke Road, and lands owned by the Kendall County Forest Preserve District and Conservation Foundation west of Arbeiter and Hare Roads will be classified as Public/Institutional.

3. The residentially planned areas east of Arbeiter and Hare Roads will be reclassified to Rural Estate Residential.

4. The floodplain of the Aux Sable Creek was added to the map.

5. Text contained in the Land Resource Management Plan in conflict the above changes will be amended.

The Seward Township Planning Commission approved this proposal at their meeting on February 5, 2024. The Seward Township Board approved this proposal at their meeting on March 12, 2024. Seward Township held a community forum on the proposal on April 18, 2024. The Kendall County Comprehensive Land Plan and Ordinance Committee also reviewed the proposal at their meetings in February and April 2024.

A composite future land use map of the County and the municipalities' comprehensive plans is attached.

This proposal was sent to Plattville, Minooka, Shorewood, and Joliet on April 30, 2024. This proposal was sent to the Bristol-Kendall, Lisbon-Seward, Minooka, Troy, and Joliet Fire Departments on April 30th.

ZPAC reviewed this proposal at their meeting on May 7, 2024. Mr. Guritz said that he attended the forum in Seward Township and felt that the meeting was well attended and attendees seemed in favor of the proposal. ZPAC recommended approval of the proposal by a vote of nine (9) in favor and zero (0) in opposition with one (1) member absent. The minutes of the meeting are attached.

The Kendall County Regional Planning Commission held a public hearing on this proposal on May 22, 2024. Other than the Petitioner, no other person testified in favor or in objection to the proposal. One (1) person asked what a comprehensive plan was and another person requested clarification regarding the land use classifications along Route 52 between County Line and Ridge Roads. Seward Township explained

the public's involvement in the proposal, to date. Discussion occurred regarding the removal of the Commercial area near the intersection of Route 52, O'Brien, and McKanna Roads and the retention of the Commercial area at the intersection of Grove Road and Route 52; the area was retained for traffic and trail reasons. Discussion occurred regarding the impact of property owners to ask for map amendments, if the proposal was approved. The Kendall County Regional Planning Commission recommended approval of the proposal by a vote of six (1) in favor, one (1) in opposition, and three (3) absent. The minutes of the hearing are attached.

If you have any questions regarding this memo, please let me know.

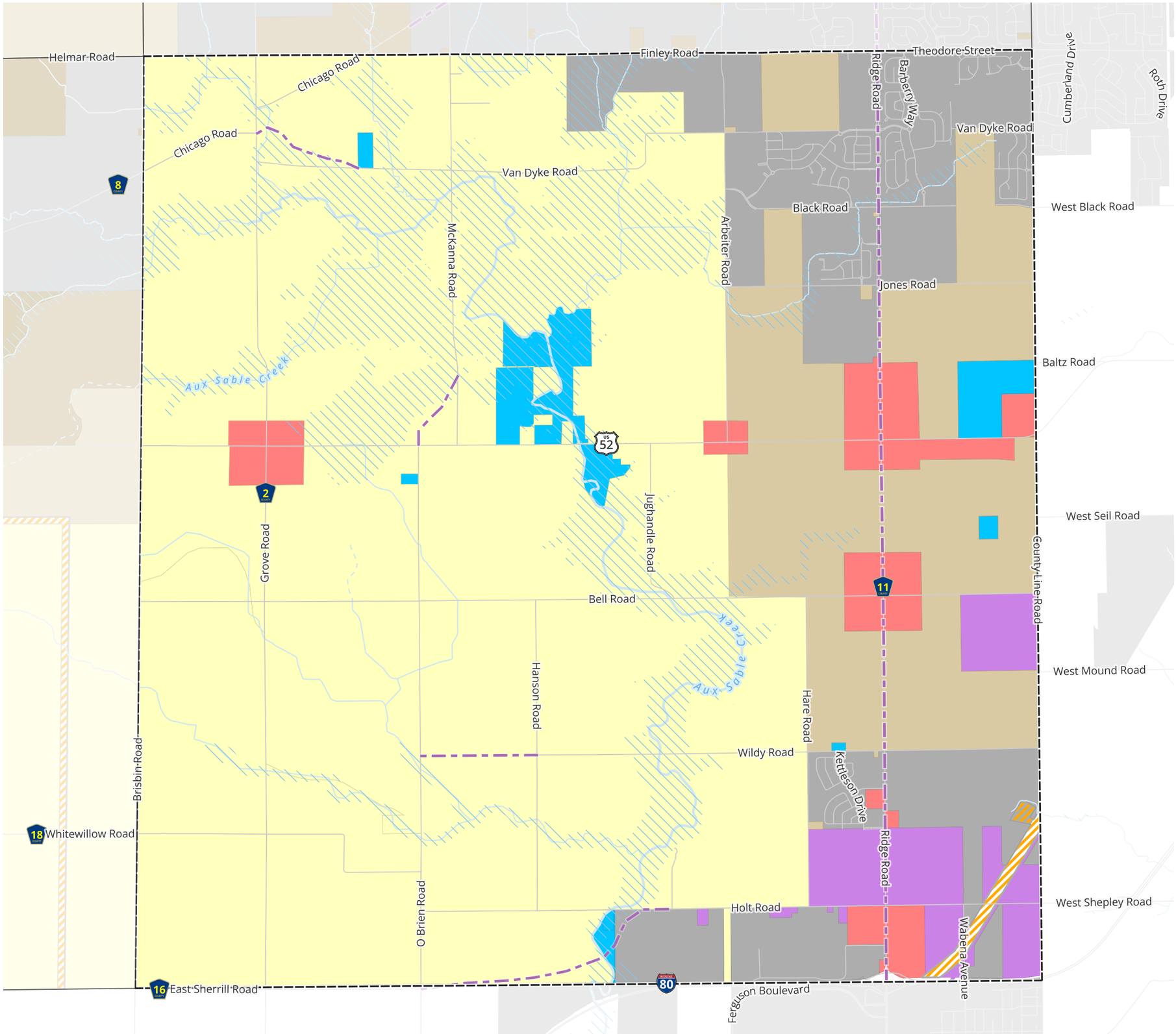
Thanks,

MHA

Encs.: Proposed Future Land Use Map
Existing Future Land Use
Composite Future Land Use Map
May 7, 2024, ZPAC Meeting Minutes (This Petition Only)
May 22, 2024, Kendall County Regional Planning Commission Hearing Minutes (This Petition Only)

Seward Township

Future Land Use Drafts / Proposals



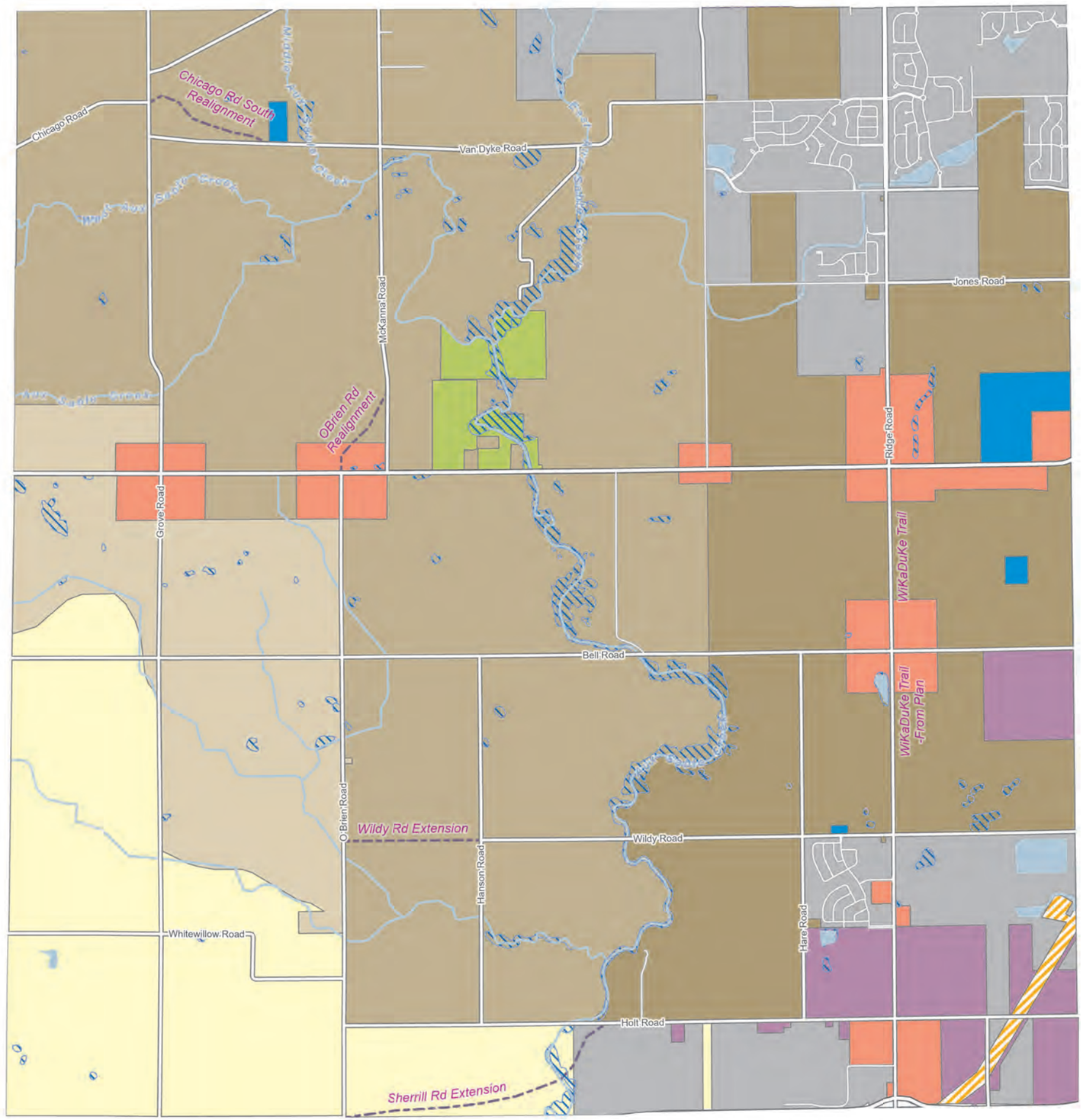
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- Proposed Roadway Improvements
- Floodplain

LRMP Management Areas

- Urbanized Communities
- Suburban Residential
- Rural Residential
- Rural Estate Residential
- Countryside Residential
- Hamlet
- Rural Community
- Commercial
- Public / Institutional
- Open Space
- Natural Resource Area
- Agriculture
- Mining
- Potential Mining District
- Mixed Use Business
- Transportation Corridors
- Utility Right of Way
- Agricultural Conservation Area

Basemap data © OpenStreetMap | Map Created 25-Apr-2024



FUTURE LANDUSE SEWARD TOWNSHIP 2023

Legend

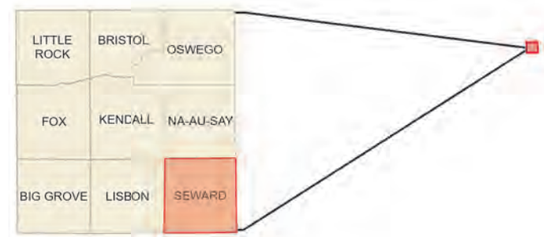
Wetlands

Floodplains

Proposed Roadway Improvements

Land Resource Management Plan Management Areas

- Utility Right of Way
- Urbanized Communities
- Suburban Residential
- Rural Residential
- Rural Estate Residential
- Commercial
- Agricultural Conservation Areas
- Mixed Use Business
- Public / Institutional
- Open Space
- Agriculture



N

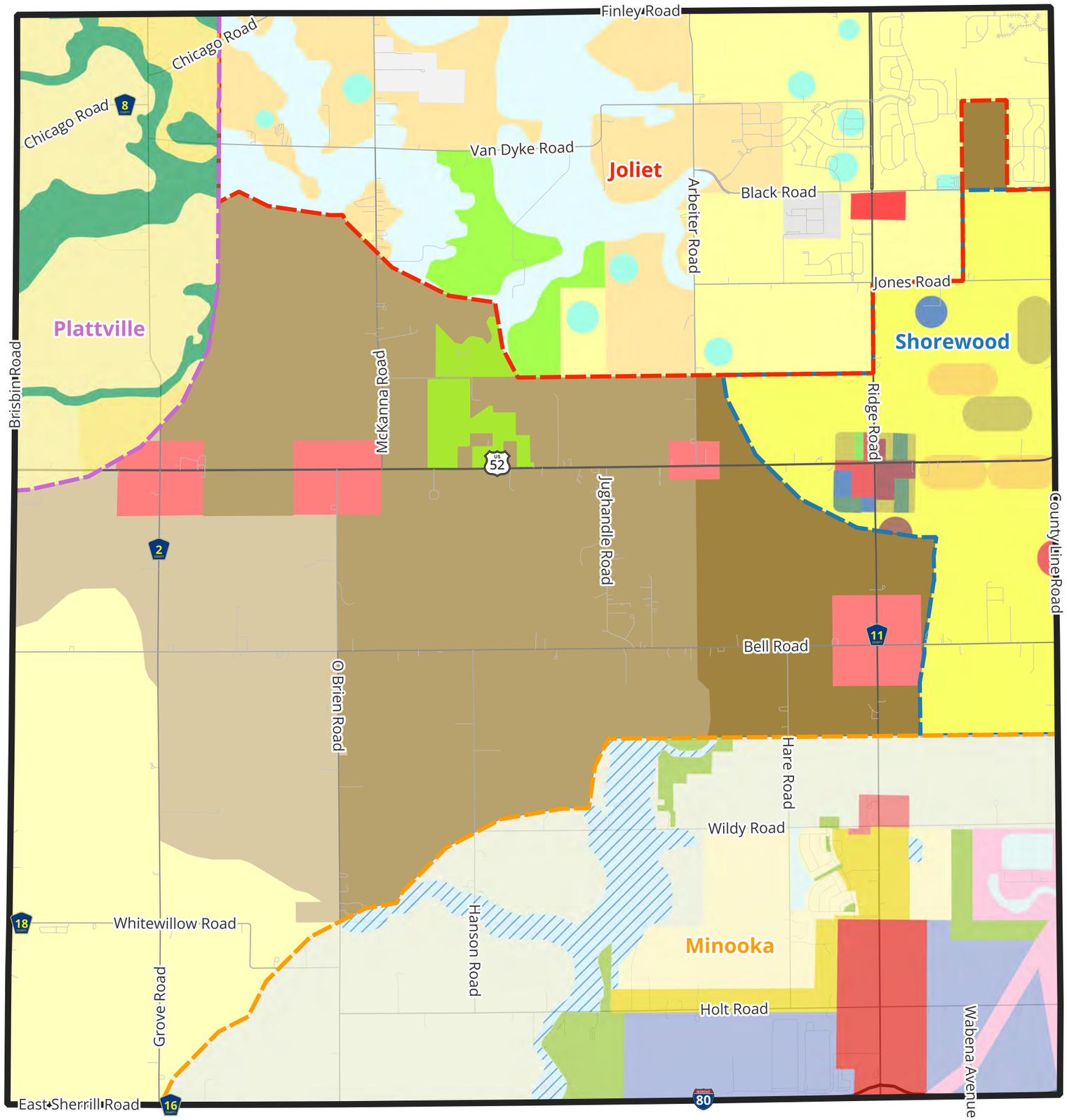
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Kendall County
Planning, Building & Zoning Department
111 Fox Street
Yorkville, Illinois 60560

Basemap Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri Community Maps contributors, Map layer by Esri

Kendall County GIS | Created: 8/28/2023 9:27 AM

Seward Township
Future Land Use Plan



Seward Township Boundary

Kendall County
- Suburban Residential
- Rural Residential
- Rural Estate Residential
- Commercial
- Open Space
- Agriculture

City of Joliet
- Residential - Various Density Conditions
- Residential - Aux Sable Design Corridor
- Local Commercial
- Community Commercial
- Municipal / Institutional
- Utilities
- Parks
- Flood Plain
- Planning Area

Village of Plattville
- Low Density Residential
- Medium Density Residential
- Parks & Open Space
- Planning Area

Village of Minooka
- Single Family - Detached
- Single Family - Attached
- Agriculture
- Industrial
- Utilities
- Commerical Corridor
- Community Commercial
- Flood Area
- Parks
- Water Bodies
- Planning Area

Village of Shorewood
- Single Unit - Detached
- Single Unit - Attached
- Multi-Unit
- Corridor Commercial
- Community Commercial
- Institution
- Mixed Use
- Conservation
- Recreation
- Planning Area

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Created: 03/11/2024

ZONING, PLATTING & ADVISORY COMMITTEE (ZPAC)
May 7, 2024 – Unapproved Meeting Minutes

PBZ Chairman Seth Wormley called the meeting to order at 9:00 a.m.

Present:
Matt Asselmeier – PBZ Department
Meagan Briganti – GIS Department
David Guritz – Forest Preserve (Arrived at 9:02 a.m.)
Brian Holdiman – PBZ Department
Fran Klaas – Highway Department
Commander Jason Langston – Sheriff's Department
Alyse Olson – Soil and Water Conservation District (Arrived at 9:02 a.m.)
Aaron Rybski – Health Department
Seth Wormley – PBZ Committee Chair

Absent:
Greg Chismark – WBK Engineering, LLC

Audience:
Tim O'Brien, Pete Fleming, Michael Korst, Jim Filotto, Ryan Solum, Bruce Miller, Alex Schuster, and Gloria Foxman

PETITIONS

Petition 24-14 Tim O'Brien on Behalf of Seward Township
Mr. Asselmeier summarized the request.

In an effort to preserve the agricultural character of the Township and protect the Aux Sable Creek Watershed, Seward Township has proposed the attached new Future Land Use Map. The existing Future Land Use Map is also attached.

The proposed changes were as follows:

1. All of the land west Arbeiter and Hare Roads will be reclassified to Agricultural. The Commercial area at the intersection of Route 52 and Grove Road will be retained and the Commercial area at the intersection of Arbeiter Road and Route 52 will also be retained.

2. The Seward Township Building on O'Brien Road, the church on Van Dyke Road, and lands owned by the Kendall County Forest Preserve District and Conservation Foundation west of Arbeiter and Hare Roads will be classified as Public/Institutional.

3. The residentially planned areas east of Arbeiter and Hare Roads will be reclassified to Rural Estate Residential.

4. The floodplain of the Aux Sable Creek was added to the map.

5. Text contained in the Land Resource Management Plan in conflict the above changes will be amended.

The Seward Township Planning Commission approved this proposal at their meeting on February 5, 2024. The Seward Township Board approved this proposal at their meeting on March 12, 2024. Seward Township held a community forum on the proposal on April 18, 2024. The Kendall County Comprehensive Land Plan and Ordinance Committee also reviewed the proposal at their meetings in February and April 2024.

A composite future land use map of the County and the municipalities' comprehensive plans is attached.

This proposal was sent to Plattville, Minooka, Shorewood, and Joliet on April 30, 2024. This proposal was sent to the Bristol-Kendall, Lisbon-Seward, Minooka, Troy, and Joliet Fire Departments on April 30th.

Mr. Asselmeier noted that he would add a disclaimer to text of the Seward Township portion of the Land Resource Management Plan noting that if conflicts arise between the text and the Future Land Use Map, the Future Land Use Map would take precedence.

Mr. Guritz stated that he attended the public meeting in Seward Township and felt that it was well attended and most people in attendance were in favor of the proposal. The addition of the floodplain gives the map a different perspective.

Mr. Guritz made a motion, seconded by Mr. Rybski, to recommend approval of the request.

The votes were follows:
Ayes (9): Asselmeier, Briganti, Guritz, Holdiman, Klaas, Langston, Olson, Rybski, and Wormley
Nays (0): None
Abstain (0): None
Absent (1): Chismark

The motion passed.

The proposal goes to the Kendall County Regional Planning Commission on May 22, 2024.

PUBLIC COMMENT

None

ADJOURNMENT

Mr. Guritz made a motion, seconded by Mr. Rybski, to adjourn.

With a voice vote of nine (9) ayes, the motion carried.

The ZPAC, at 9:54 a.m., adjourned.

Respectfully Submitted,
Matthew H. Asselmeier, AICP, CFM
Director

Enc.

#1

KENDALL COUNTY
ZONING & PLATTING ADVISORY COMMITTEE
MAY 7, 2024

IF YOU WOULD LIKE TO BE CONTACTED ON FUTURE MEETINGS REGARDING THIS TOPIC, PLEASE PROVIDE YOUR ADDRESS OR EMAIL ADDRESS

NAME	ADDRESS (OPTIONAL)	EMAIL ADDRESS (OPTIONAL)
Jim O'Brien	[redacted]	
Pete Fleming		
Michael Kost		
Jim Filotto		
Ryan Solum		
BRUCE MILLER		
ALEX Schuster		

KENDALL COUNTY
REGIONAL PLANNING COMMISSION

Kendall County Office Building
Rooms 209 and 210
111 W. Fox Street, Yorkville, Illinois

Unapproved - Meeting Minutes of May 22, 2024 - 7:00 p.m.

Chairman Bill Ashton called the meeting to order at 7:00 p.m.

ROLL CALL
Members Present: Bill Ashton, Eric Bernacki, Tom Casey, Dave Hamman (Arrived at 7:08 p.m.), Larry Nelson, Ruben Rodriguez, Claire Wilson, and Seth Wormley (Arrived at 7:40 p.m.)
Members Absent: Karin McCarthy-Lange and Bob Stewart
Staff Present: Matthew H. Asselmeier, Director, and Wanda A. Rolf, Office Assistant
Others Present: Tim O'Brien, Dave Koehler, Joan Soltwisch, Marcia Rousonelo, Ray Jackinowski, Kyle Barry, Erin Bowen, Katherine Carlson, Tom Huddleston, Paul Yearsley, Joy Lieser, Greg Henderson, Carrie Kennedy, Andrew Daylor, Kristine Henderson, Michael Korst, Bruce Miller, and Gloria Foxman

The Kendall County Regional started their review of Petition 24-14 at 7:02 p.m.

PUBLIC HEARING
Petition 24-14 Tim O'Brien on Behalf of Seward Township
Mr. Asselmeier summarized the request.

In an effort to preserve the agricultural character of the Township and protect the Aux Sable Creek Watershed, Seward Township has proposed a new Future Land Use Map, which was provided. The existing Future Land Use Map was provided.

The proposed changes were as follows:

1. All of the land west Arbeiter and Hare Roads will be reclassified to Agricultural. The Commercial area at the intersection of Route 52 and Grove Road will be retained and the Commercial area at the intersection of Arbeiter Road and Route 52 will also be retained.

2. The Seward Township Building on O'Brien Road, the church on Van Dyke Road, and lands owned by the Kendall County Forest Preserve District and Conservation Foundation west of Arbeiter and Hare Roads will be classified as Public/Institutional.

3. The residentially planned areas east of Arbeiter and Hare Roads will be reclassified to Rural Estate Residential.

4. The floodplain of the Aux Sable Creek was added to the map.

5. Text contained in the Land Resource Management Plan in conflict the above changes will be amended. Mr. Asselmeier said a disclaimer would added to the text of Seward Township portion of the Land Resource Management to note that the map would take precedent over the text, in the event of conflict.

The Seward Township Planning Commission approved this proposal at their meeting on February 5, 2024. The Seward Township Board approved this proposal at their meeting on March 12, 2024. Seward Township held a community forum on the proposal on April 18, 2024. The Kendall County Comprehensive Land Plan and Ordinance Committee also reviewed the proposal at their meetings in February and April 2024.

A composite future land use map of the County and the municipalities' comprehensive plans were provided.

This proposal was sent to Plattville, Minooka, Shorewood, and Joliet on April 30, 2024. This proposal was sent to the Bristol-Kendall, Lisbon-Seward, Minooka, Troy, and Joliet Fire Departments on April 30th. No comments were received.

ZPAC reviewed this proposal at their meeting on May 7, 2024. Mr. Guritz said that he attended the forum in Seward Township and felt that the meeting was well attended and attendees seemed in favor of the proposal. ZPAC recommended approval of the proposal by a vote of nine (9) in favor and zero (0) in opposition with one (1) member absent. The minutes of the meeting were provided.

Member Nelson asked if any notice would be given regarding the date when the map would become effective. Mr. Asselmeier responded that no specific notice would be given. The map would automatically become effective upon approval by the County Board.

Member Wilson stated that, as a representative of Seward Township, she felt Seward Township proposed the change to the site plan in awful manner with unclear notice and little information provided prior to the meeting. She had no objection to expanding the building. Chairman Ashton said that matter will be discussed later in the meeting.

Member Hamman arrived at this time (7:08 p.m.).

Chairman Ashton opened the public hearing at 7:08 p.m.

Joan Soltwisch, Seward Township Planning Commission, said that twenty-two (22) people completed the evaluation form and sixteen (16) people attended the Seward Township public meeting. She said the Seward Township Supervisor and two (2) Seward Township Trustees attendees. She said that David Guritz from the Kendall County Forest Preserve, Dan Lobbes from the Conservation Foundation, Mike Hoffman from Teska Associates, Dan Duffy and Ryan Anderson from the Village of Minooka, and Natalie Engel from the Village of Shorewood. Five (5) maps were explored. The following maps were presented the Aux Sable Creek Watershed Map, the Zoning Map, the Hydric Soil Map, and the proposed Future Land Use Map. All comments were positive. The parties agreed to continue to work together on future development. The minutes of the Seward Township meetings were submitted for the record.

Marcia Rousonelo asked what the Comprehensive Plan was. Chairman Ashton responded that it was land use plan for the Township for forward looking development.

Member Nelson noted that, if the plan is adopted, that people wanting the build in the agricultural designated areas, the County would not entertain rezoning requests in those areas. The Land Resource Management Plan would need to be changed and the rezoning request would have to be submitted, if someone wanted to rezone their property in that area.

Member Bernacki asked about the impact of switching residential lands to the agricultural classification. Mr. Asselmeier presented the current Future Land Use Map for Seward Township. The impacted properties would not be able to rezone their properties unless the Land Resource Management Plan was amended. Presently, a property could ask to rezone those properties, if the map allowed.

Member Bernacki asked if it be easier for landscaping businesses to open if a property was zoned agricultural. Mr. Asselmeier said that businesses allowed in the agricultural district would have to secure applicable permits. If a property needed to be rezoned to A-1 to open a business, that process could occur, if the map was approved.

Ray Jackinowski asked about the locations of County Line Road and Route 52 on the map. He was shown those locations.

Discussion occurred regarding the impact of Chatham annexations.

Ray Jackinowski asked about rezoning for a storage facility along Route 52 near County Line Road. Mr. Asselmeier said that area was already shown as commercial on the Future Land Use Map.

Member Bernacki asked why the commercial area was removed from the O'Brien-McKanna-Route 52 interchange. Ms. Soltwisch said that the change was made to protect the Aux Sable watershed. It was unknown if the landowner(s) knew about the proposed reclassification. No timetable was known regarding the road realignment of O'Brien and McKanna Roads. The water engineering study for the realignment area was conducted by the USDA. Further studies will occur when the road alignment is examined. Discussion occurred regarding flooding in the area.

Member Wilson asked why the commercial remained at the Grove Road intersection. Ms. Soltwisch said it remained in the plan because of traffic and trail considerations.

Member Nelson made motion, seconded by Member Hamman to close the public hearing.

With a voice vote of seven (7) ayes, the motion carried.

Chairman Ashton closed the public hearing at 7:31 p.m.

Member Nelson made a motion, seconded by Member Bernacki, to recommend approval of the proposal provided that all the maps and minutes of the various Seward Township meetings be included in the record.

Member Bernacki asked why Seward Township shaded the floodplain areas instead of having different coloring distinctions like Joliet's map had. The reason for the shading was to reduce clutter on the map and make it easier to read.

The vision of Seward Township has changed over the years.

Member Casey asked how much land was required to build a house on Suburban Residential and Rural Residential land. Mr. Asselmeier said that R-1 required approximately two point nine-nine (2.99) acres unless

it is part of a planned development. Member Casey asked how much land was required to build a house on Agricultural Land. Mr. Asselmeier said that A-1 required forty (40) acres.

The votes were as follows:
Ayes (6): Ashton, Bernacki, Casey, Hamman, Nelson, and Rodriguez
Nays (1): Wilson
Absent (3): McCarthy-Lange, Stewart, and Wormley
Abstain (0): None

The proposal goes to the Kendall County Zoning Board of Appeals on May 28, 2024.

The Kendall County Regional Planning Commission concluded their review of Petition 24-14 at 7:37 p.m.

CITIZENS TO BE HEARD/PUBLIC COMMENT
None

OTHER BUSINESS/ANNOUNCEMENTS
Mr. Asselmeier reported that Petition 24-10 and 24-11 will be on the agenda for the June meeting.

ADJOURNMENT
Member Wilson made a motion, seconded by Member Nelson, to adjourn. With a voice vote of seven (7) ayes, the motion carried.

The Kendall County Regional Planning Commission meeting adjourned at 9:59 p.m.

Respectfully submitted by,
Wanda A. Rolf, Administrative Assistant

KENDALL COUNTY
REGIONAL PLANNING COMMISSION
MAY 22, 2024

IF YOU WOULD LIKE TO BE CONTACTED ON FUTURE MEETINGS REGARDING THIS TOPIC, PLEASE PROVIDE YOUR ADDRESS OR EMAIL ADDRESS

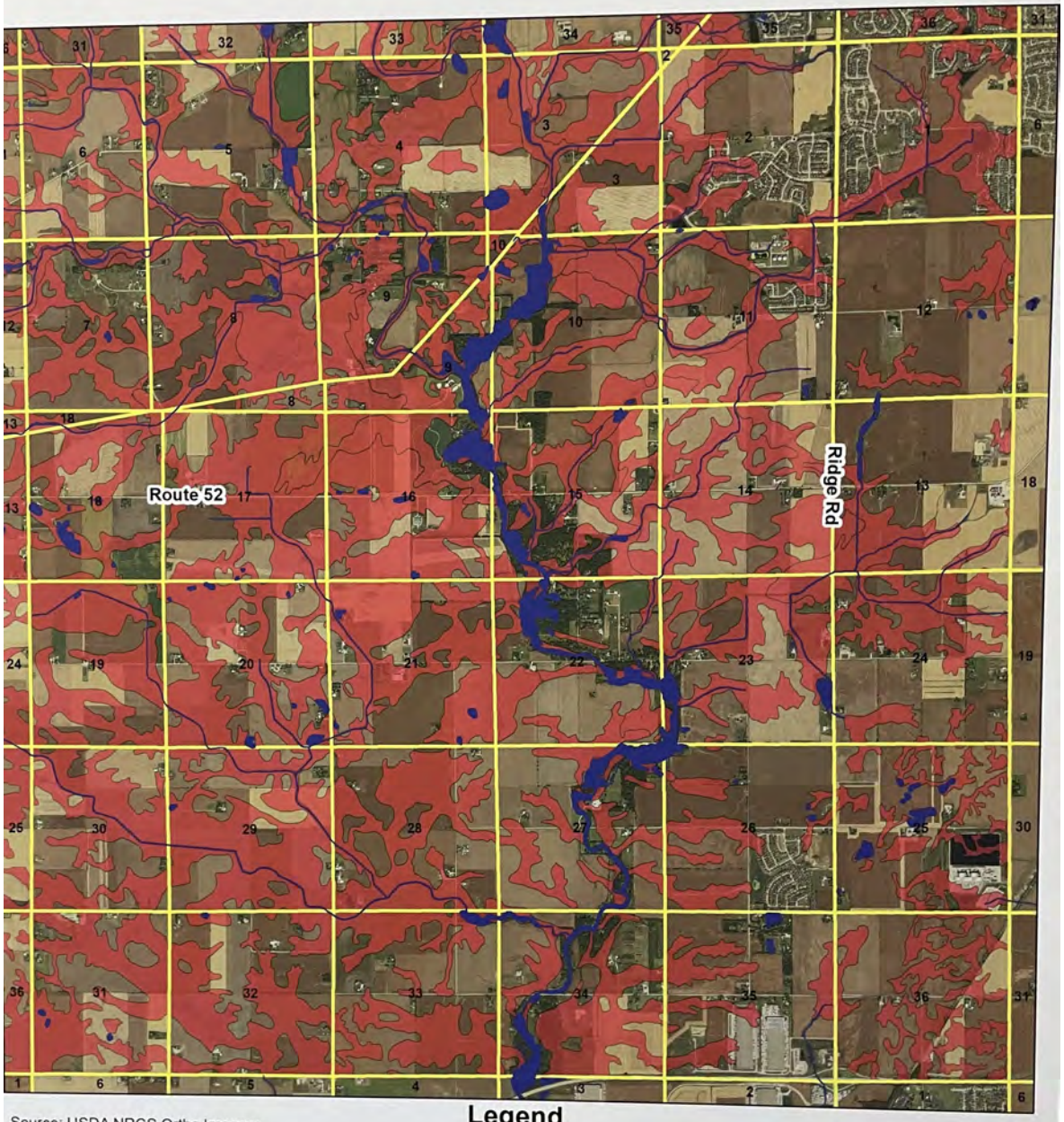
NAME	ADDRESS (OPTIONAL)	EMAIL ADDRESS (OPTIONAL)
Jeri O'Brien	[redacted]	
DAVE Koehler		
BRUCE MILLER		
Joan Sotkiewicz		
Marcia Rousonelos		
Ray Sackenreuter 5124 RT 52		
Kyle Barry		
Gloria Foxman		

KENDALL COUNTY
REGIONAL PLANNING COMMISSION
MAY 22, 2024

IF YOU WOULD LIKE TO BE CONTACTED ON FUTURE MEETINGS REGARDING THIS TOPIC, PLEASE PROVIDE YOUR ADDRESS OR EMAIL ADDRESS

NAME	ADDRESS (OPTIONAL)	EMAIL ADDRESS (OPTIONAL)
Erin Bowen	[redacted]	
Katherine Carlson		
TOM HUDDLESTON		
Paul Yeardley		
DAVE Koehler		
Jay Lieser		

Seward Township Hydric Soils & Wetlands/Waterways



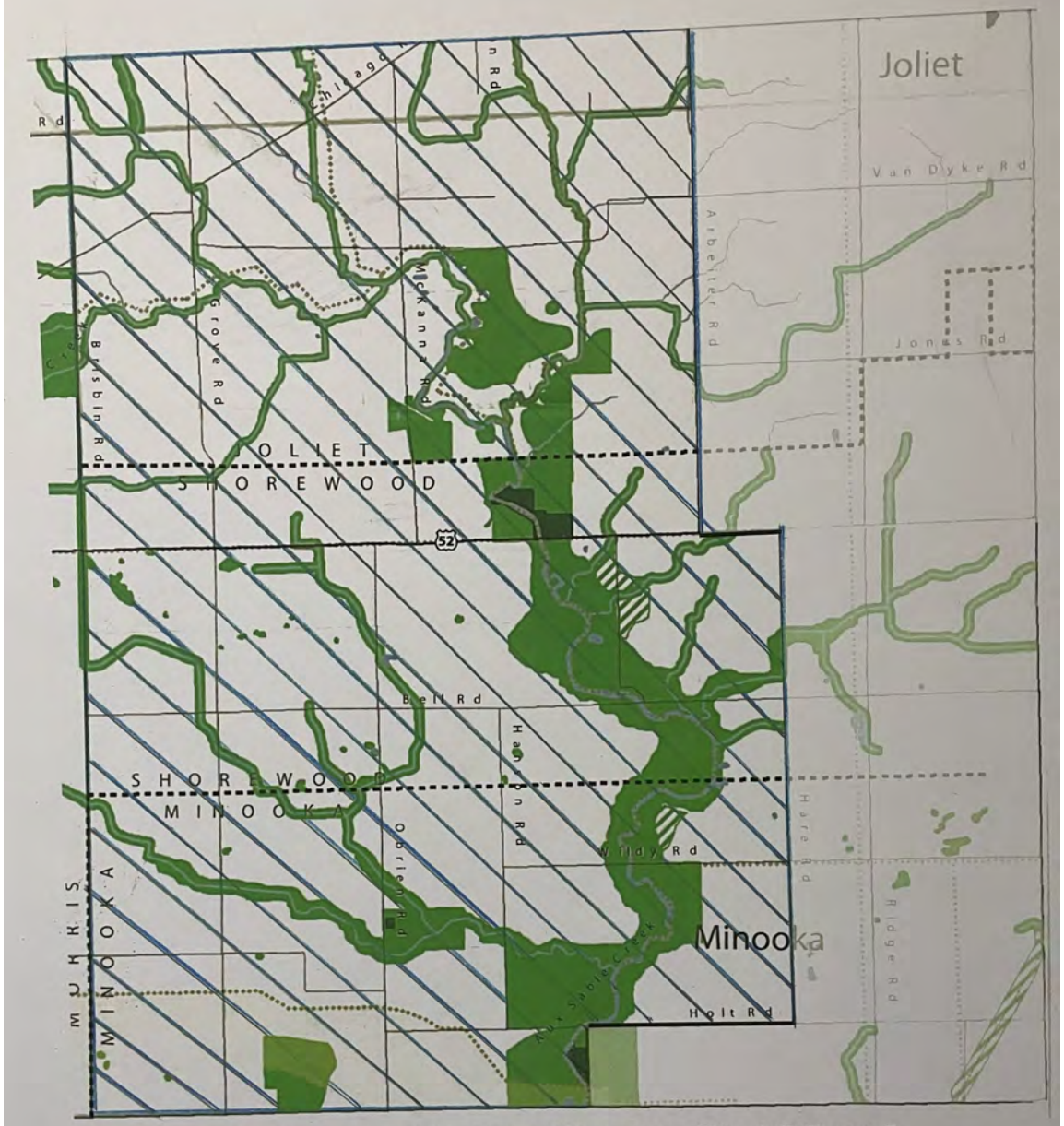
Source: USDA NRCS Ortho Imagery

Legend

- NWI Wetlands Upper IL Watershed
- NWI Wetlands Des Plaines Watershed
- Section Lines
- Hydric Soil

0 2,750 5,500 11,000 Feet

N



Excerpted from "The Natural Treasures of Kendall County"



SEWARD TOWNSHIP LAND RESOURCE PLANNING COMMITTEE; MONTHLY MEETING FEBRUARY 05, 2024

Call to Order: Time 6:32 P.M.

Location: Seward Township Building
1479 O'Brien Road
Minooka, Illinois, 60447

Pledge of Allegiance was lead by Mr. Fleming

Roll Call: Called by Ms. Soltwisch
Present at meeting: Peter Fleming, Jessica Nelson, Joan Soltwisch
Absent at the meeting: Ron Miller, excused.
Guests: Debrae Chow, Mike Cook, Garrett Cook

Approval of the January 16th Minutes: Ms. Nelson moved, Ms. Soltwisch seconded. **Motion Carried.**

Public Comment:

New Business:

1. Presentation by Cook Engineering Group on re-zoning property along the East side of Ridge Road, North of Bell Road, adjacent to the Rusty Ridge Vet Clinic, from A-1 to B-3. Ms. Chow and Mr. Cook discussed that they wanted to be re-zoned by Kendall County, and thought that the properties plan would be an asset to the township. Ms. Nelson moved to approve the plan, as presented. Ms. Soltwisch seconded. **Motion Carried**. Mr. Cook and Ms. Chow asked that our committee recommend an approval of their plan to the Seward Township Board.

2. Our committee was made aware that several solar farm sitings were in progress in Seward Township. We were told that these farms would not be zoned through the Kendall County Zoning Board. The companies involved were originally asked to come to our resource Planning Committee with their plans. Instead they will be approved, for siting, by the municipalities of Joliet. Minooka and Shorewood. Ms. Soltwisch noted that at the Kendall County Planning, Building & Zoning Annual meeting, on February 3rd. 2024, the Mayor of Shorewood spoke and stated that their zoning board denied the siting of the solar farm on Seil Road. The board thought that the plan did not fit their land use, for Best Management.

3. Ms. Soltwisch, and Mr. Fleming will attend the next Kendall County Regional Planning Commission, to discuss our Seward Township zoning map change. We have been asked to meet with them on February 28th, 5:00 P.M. Our Seward Township supervisor, Tim O'Brien will be asked to attend with us.

We will also announce, to the Regional Planning Commission, that our township will host a Panel Discussion, to cover topics of land preservation, along the Aux Sable Creek, and open space map zoning changes. We will ask representatives from Shorewood and Minooka, as well as representatives

from the Kendall Forest Preserve, Teska and Associates, and The Conservation Foundation. The panel will take place at the Seward Township. There will be no cost to the township.

Mr. Fleming called for a motion to approve our amended Seward Township zoning map. Ms. Nelson moved and Ms. Soltwisch seconded. **Motion carried.**

Old Business: There is no old business at this time.

Other Business/Announcements: There was no further business or announcements at this time.

The next monthly meeting of the Seward Township Land Resource Planning Committee will be Monday, March 11, 2024, at 6:30 P.M.

Adjournment: Mr. Fleming called for an adjournment of the meeting Ms. Nelson moved and Ms. Soltwisch seconded. **Motion carried**. Meeting adjourned at 7:21 P.M.

Minutes submitted by Joan Kathryn Soltwisch

SEWARD TOWNSHIP LAND RESOURCE PLANNING COMMITTEE; MONTHLY MEETING MARCH 25, 2024

Call to Order: Time 6:32 P.M.

Location: Seward Township Building
14719 O'Brien Road
Minooka, Illinois, 60447

Pledge of Allegiance was lead by Mr. Fleming

Roll Call: Called by Ms. Soltwisch
Present at meeting: Peter Fleming, Jessica Nelson, Joan Soltwisch Ron Miller

Approval of the February 5th 2024 Minutes: Ms. Nelson moved, Ron Miller seconded. **Motion Carried.**

Public Comment: There was no public comment at this time.

New Business:

Ms. Soltwisch, and Mr. Fleming, and Seward Township Supervisor, Tim O'Brien, attended the Kendall County Regional Plan Commission, February 28th 2024. We were asked to go back to the Township to discuss our Zoning Map change, and bring back an evaluation so that the County could get a feel for resident support, of our Proposed Map.

Our township will host a Panel Discussion, and invite the residents of Seward to engage in conversation over topics of land preservation, along the Aux Sable Creek, and open space map zoning changes, with representatives from Shorewood and Minooka, as well as representatives from the Kendall Forest Preserve, Teska and Associates, and The Conservation Foundation. The panel will take place at the Seward Township, on April 18th, at 5:00 P.M., at the Seward Township Hall, 14719 O'Brien Road, Minooka IL. There will not be a cost to the township. Ms. Soltwisch will make arrangements to post the meeting in the Kendall County Record. We will ask Mr. Scott Cryder, Road Commissioner to furnish water. Mr. Fleming will bring a vegetable tray and Ms. Nelson decaf coffee. Ms. Soltwisch will bring a fruit and vegetable tray. Ms. Miller will also bring cookies and vegetable trays. Mr. Fleming will bring copies of the current zoning map, as well as updated proposed map. We will make 30 handouts with evaluation choices.

Old Business: There is no old business at this time.

Other Business/Announcements: There was no further business or announcements at this time.

The next monthly meeting of the Seward Township Land Resource Planning Committee will be Monday, May 14, 2024, at 6:30 P.M.

Adjournment: Mr. Fleming called for an adjournment of the meeting Ms. Nelson moved and Mr. Miller seconded. **Motion carried**. Meeting adjourned at 7:21 P.M.

Minutes submitted by Joan Kathryn Soltwisch

SEWARD TOWNSHIP PLANING COMMITTEE MEETING PROGRAM EVALUATION APRIL 18TH 2024

1. Did your knowledge of our township map proposed change increase, as a result of this program.
   (Y/N) 22 persons replied yes to this questions, out of 22 attending.
   Did your knowledge level increase as to the relationship with the township and Kendall County's role in zoning change, as a result of this discussion?
   (Y/N) 3 persons said no to this question, 19 out of twenty two attending said yes.
   If so what was your knowledge, before, on a scale from 1 to 5? How about after? Knowledge level before? 1 2 3 4 5 Knowledge level after 1 2 3 4 5
   2,7,3,5 persons answered respectively to knowledge level before. 0,1,2,6,6, persons answered respectively to knowledge after the meeting. The result was that overall knowledge increased.
2. Annexation agreements were discussed. Was that discussion helpful for you?
   All but three answered a firm yes, to this question. One said, not applicable, one said not really.
3. The need to keep open space and farm ground protection go hand in hand, in our area. Do you feel that this is important? Was this discussion helpful?
   (Y/N) All present said yes, to this answer.
4. The Aux Sable Watershed is a protected class A stream. There is a "Protect Kendall Now" map depicting the buffer of protection. Do you feel that this is important? (Y/N) All said yes to this question.
5. Would you like to stay informed on the planing of our area?
   All voted a positive **YES**, to stay informed on the planing of our area.

Twenty two people signed the e-mail and contact sheet. There were a few more in attendance, as the family questioning dividing property, for their grown children did not all sign, just the parents, Irma and Loya Quezada.

The guests present that were from Seward Township totaled 16 persons. One person was, the Seward Township Supervisor, and two were Seward Township Trustees. * They were all in favor.

The guests present that were asked to weigh in on behalf of the map change totaled five. They were David Guritz, Kendall Forest Preserve. Dan Lobbes, The Conservation Foundation. Mike Hoffman, senior urban planner, Teska and Assoc. Dan Duffy, Manager, The Village of Minooka, Ryan Anderson, Public Works, The Village of Minooka. Natalie Engel, Community Development, The Village Of Shorewood.

A total of five maps were explored. One showing a vision of changing zoning areas slated for residential back to agriculture, with discussion of the one and 40 rule. One map showed the Aux Sable Watershed with buffered areas, commonly called, The Protect Kendall Now map. One map showed the current map showing currently zoned areas, and one map showed the hydric soils, in degrees in Seward Township, most notably in the tributaries, and close to the Aux Sable Creek.

It was a very informative meeting. The five professionals that engaged with the residents of Seward Township all thought positively that the map change reflected their comprehensive plans, with good urban planning and that vision would be productive in saving farm ground, a good fit for future development, forest preserves, and good planning for working forward together. It was generally agreed to continue this dialog and work together, in the future.

Sincerely, Peter Fleming, Jessica Nelson, Ron Miller, Joan Soltwisch, Seward Township Planing Board.

* One trustee was absent from Seward Township Board, as she was stuck in a two hour traffic jam on I 80, but had planned to attend. One trustee was absent due to farming in Central Illinois.

SEWARD TOWNSHIP LAND RESOURCE PLANNING COMMITTEE; MONTHLY MEETING MAY 14, 2024

Call to Order: Time 6:45 P.M.

Location: Seward Township Building
14719 O'Brien Road
Minooka, Illinois, 60447

Pledge of Allegiance was lead by Mr. Fleming

Roll Call: Called by Ms. Soltwisch
Present at meeting: Peter Fleming, Joan Soltwisch, Ron Miller

Absent approved: Jessica Nelson

Approval of the March 25, 2024 Minutes: Mr. Miller moved, Ms. Soltwisch seconded. **Motion Carried.**

Public Comment: There was no public comment at this time.

New Business:

1. Proposed Commercial Roofing Business to be located on Route 52 (East of Ridge Road, and West of County Line Road.) Plans were sent to members to review. Project had been approved, by the Kendall County Zoning, Planning Board of Appeals. Mr. Fleming called for a motion to approve the project, upon recommended light design and landscape ordinance plan submission. Mr. Miller moved and Ms. Soltwisch seconded. **Motion carried**

Old Business:

1. The Panel discussion held April 18th to consider comments and make recommendations regarding the amendments, to the future land use map and in the Kendall County Land Resource Management Plan, by adopting a new Future Land Use Map was a success. The evaluations from the special meeting were positive. The guests that were present, from Seward Township totaled 16 persons. One person was the Seward Township Supervisor and two trustees were present. Guests present, that were asked to comment on behalf of the proposed map update were, David Guritz, Kendall County Forest Preserve, Dan Lobbes, The Conservation Foundation, Mike Hoffman, Senior Planner, Teska and Associates, Dan Duffy, Manager, Village of Minooka, Ryan Anderson, Village of Minooka Public Works, and Natalie Engel, Community Development, the Village of Shorewood. All were in favor of the changes, and thought that the proposed map change was a good fit for future best management and future land use. It fit well with the areas comprehensive planes. It was generally agreed to continue this dialog and work together, in the future.

2. Public notice was sent to Seward Township, from the Kendall County Regional Plan Commission to hold hearing on May 22nd, 2024, at 7:00 P.M., to consider comments and make recommendations regarding Petition # 24-14, a request from Seward Township for Amendments to the Future Land Use Map and related text changes from the Seward Township Land Resource Management Plan. The Kendall County zoning Board of Appeals will hold theri meeting on May 28, 2024 at 7:00 P.M. to

consider the same Amendments that our Seward Township requests. Both meetings will be held at the Kendall County Office Building, Rooms 209 and 210, at 111 Fox Street, Yorkville, IL.

Other Business/Announcements: There was no further business or announcements at this time.

The next monthly meeting of the Seward Township Land Resource Planning Committee will be Monday, June 3, 2024, at 6:30 P.M.

Adjournment: Mr. Fleming called for an adjournment of the meeting Mr. Miller moved and Ms. Soltwisch seconded. **Motion carried**. Meeting adjourned at 7:05 P.M.

Minutes submitted by Joan Kathryn Soltwisch

DEPARTMENT OF PLANNING, BUILDING & ZONING
111 West Fox Street • Room 204
Yorkville, IL • 60560
(630) 553-4141 Fax (630) 553-4179

MEMORANDUM

To: Kendall County Zoning Board of Appeals
From: Matthew H. Asselmeier, AICP, CFM, Director
Date: May 23, 2024
Re: Petition 24-11 Proposed Map Amendment for Property between 276 and 514 Route 52

James W. Filotto on Behalf of Oakland Avenue Storage, LLC submitted a request to rezone the property between 276 and 514 Route 52 (PIN: 09-13-400-011) in Seward Township from A-1 Agricultural District to B-3 Highway Business District with the intention of placing a construction/contractor's office (specifically a roofing company) at the subject property.

On the afternoon of May 22, 2024, the Village of Shorewood submitted an email to the County requesting the Kendall County Regional Planning Commission to recommend denial of the map amendment.

At the Kendall County Regional Planning Commission meeting on May 22, 2024, the Petitioner's Attorney requested that the matter be laid over until the June 26, 2024, Kendall County Regional Planning Commission meeting in order to give the Petitioner an opportunity to meet with Shorewood and resolve Shorewood's concerns. The Kendall County Regional Planning Commission agreed to this request.

Accordingly, the Petitioner is requesting a continuation of the public hearing on this proposal to July 1, 2024.

If you have any questions regarding this memo, please let me know.

MHA

DEPARTMENT OF PLANNING, BUILDING & ZONING
111 West Fox Street • Room 203
Yorkville, IL • 60560
(630) 553-4141 Fax (630) 553-4179

Petition 24-13
James C. Marshall on Behalf of TurningPointEnergy, LLC Through TPE IL KE240 (Tenant) and Frank J. Santoro (Owner) A-1 Special Use Permit for Commercial Solar Energy Facility and Variance to Allow the Facility on Land Within 1.5 Miles of a Municipality Without an Annexation Agreement

INTRODUCTION

The Petitioner is seeking a special use permit for a commercial solar energy facility and a variance to Section 7:01.D.17.a of the Kendall County Zoning Ordinance to allow a commercial solar energy facility on land within one point five (1.5) miles of municipality without an annexation agreement.

The application materials are attached. The list of appendices of the application can be found on Page 3 of Appendix B of the application materials.

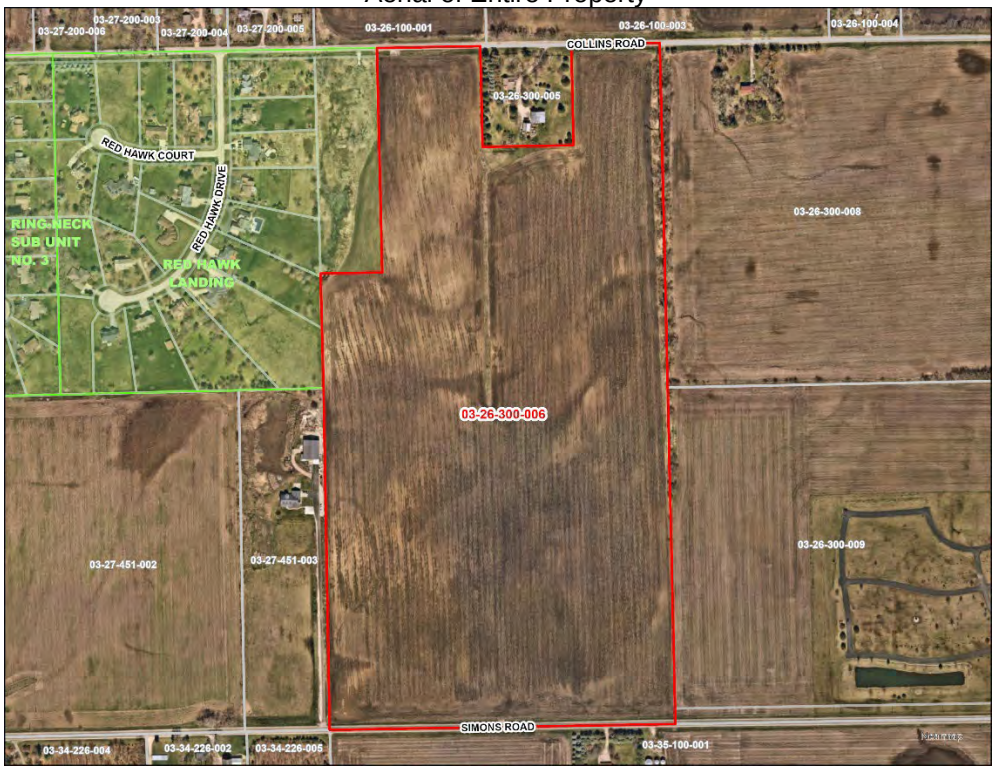
SITE INFORMATION

PETITIONER: James C. Marshall on Behalf of TurningPointEnergy, LLC Through TPE IL KE240 (Tenant) and Frank J. Santoro (Owner)

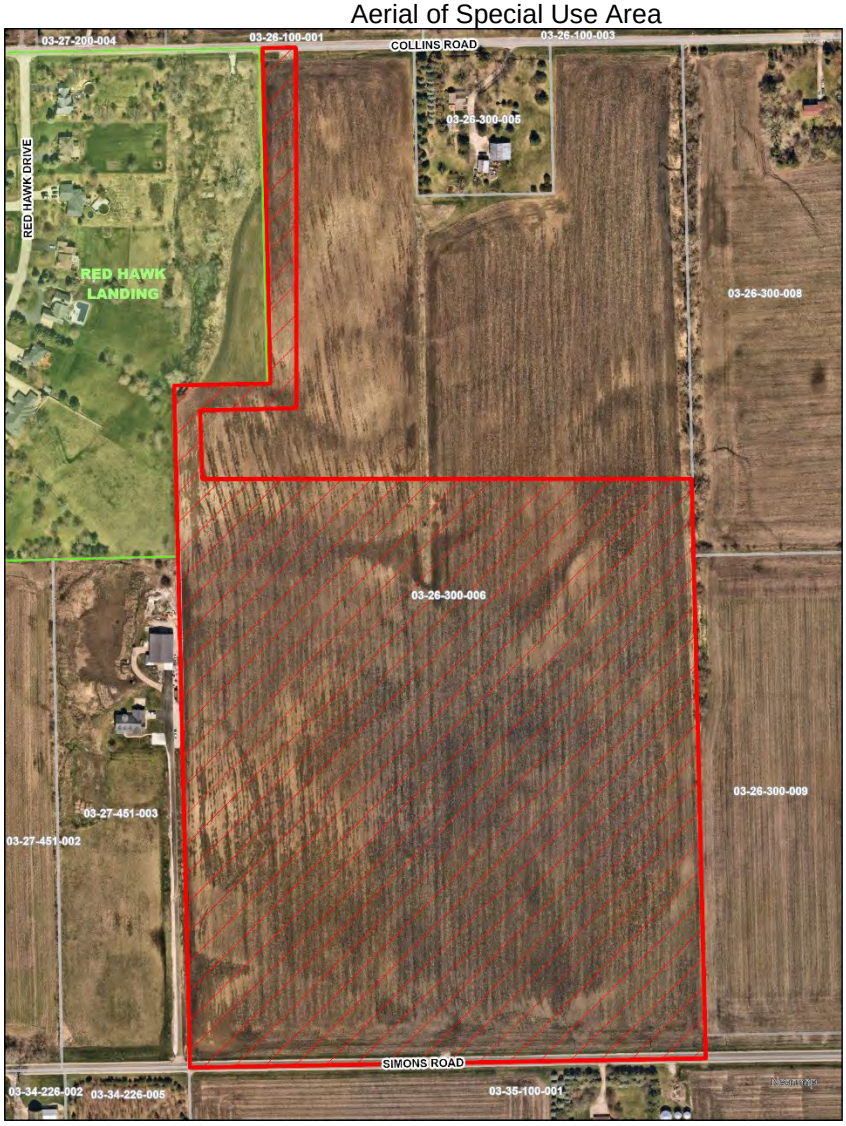
ADDRESS: East of 2025 Simons Road, Oswego

LOCATION: Approximately 0.5 Miles East of Douglas Road on the North Side of Simons Road

Aerial of Entire Property



Aerial of Special Use Area



TOWNSHIP: Oswego

PARCEL #: 03-26-300-006

LOT SIZE: 73.0 +/- Acres (Total Parcel) 38 +/- (Fenced Area)

EXISTING LAND USE: Agricultural

ZONING: A-1

LRMP:

Future Land Use	Rural Residential (Max 0.60 DU/Acre) (County) Countryside Residential (Plainfield)
Roads	Simons Road is a Local Road maintained by Oswego Township.
Trails	The Village of Plainfield has a trail planned along Simons Road.
Floodplain/ Wetlands	There are no floodplains on the property. There are two (2) farmed wetlands in the vicinity of the proposed use.

REQUESTED ACTIONS: Special Use Permit for a Commercial Solar Energy System

Variance to Allow a Commercial Solar Energy System on Land with One Point Five (1.5) Miles of a Municipality without an Annexation Agreement

APPLICABLE REGULATIONS: Section 7:01.D.17 – A-1 Special Uses

Section 13:04 – Variance Procedures

Section 13:08 – Special Use Procedures

SURROUNDING LAND USE

Location	Adjacent Land Use	Adjacent Zoning	Land Resource Management Plan	Zoning within ½ Mile
North	Agricultural/Farmstead	A-1	Rural Residential (Max 0.60 DU/Acre) and Suburban Residential (Max 1.0 DU/Acre)	A-1, A-1 SU, and R-3 (County)
South	Agricultural/Farmstead	A-1	Suburban Residential (County) Low Density Residential (Plainfield)	A-1
East	Public/Institutional (Cemetery)	A-1 and A-1 SU	Suburban Residential (County) Medium Density Residential (Plainfield)	A-1 and A-1 SU (County) R-1 and R-1 PUD (Plainfield)
West	Agricultural/Farmstead/Single-Family Residential	A-1 and R-3	Rural Residential (County) Countryside Residential (Plainfield)	A-1, R-1, and R-3

The A-1 special use permits to the north are for the sale of agricultural products not grown on the premises and a kennel. The A-1 special use permit to the east is for a cemetery.

The Douglas Hill, Quail Run, Ring-Neck, Red Hawk Landing, and Eichs subdivisions are located near the subject property. Approximately nine (9) homes not inside a subdivision are located within a half mile (0.5) miles of the subject property.

PHYSICAL DATA

ENDANGERED SPECIES REPORT

EcoCAT Report was submitted on September 27, 2023, and consultation was terminated, see Appendix F of the application.

NATURAL RESOURCES INVENTORY

The LESA Score for the property was 227 indicated a high level of protection. The NRI Report is included as Appendix E of the application.

ACTION SUMMARY

OSWEGO TOWNSHIP

Petition information was sent to Oswego Township on May 1, 2024. Prior to formal application submittal, Oswego Township submitted an email requesting a thirty-thirty foot (33') deep right-of-way dedication from the center of Simons Road and a road use agreement. The Petitioner already secured an access permit, see Appendix Y of the Application. As of the date of this memo, a road use agreement had not been finalized. The Oswego Township Planning Commission reviewed this proposal at their meeting on May 22, 2024, and took no action.

VILLAGE OF PLAINFIELD

Petition information was sent to the Village of Plainfield on May 1, 2024. Prior to formal application submittal, the Village of Plainfield submitted a letter stating they will pursue an annexation agreement after the County reviews the application, see Appendix X.

OSWEGO FIRE PROTECTION DISTRICT

Petition information was sent to the Oswego Fire Protection District on May 1, 2024. The Oswego Fire Protection District submitted an email expressing no objections to the request. The email is attached.

ZPAC

ZPAC reviewed this proposal at their meeting on May 7, 2024. Discussion occurred regarding Plainfield's plans to annex the property. The solar panels would likely stay at the property for the duration of the special use permit; no mass upgrade would likely occur. A forty foot (40') right-of-way dedication was recommended. The panels would be monitored remotely and a regular maintenance schedule would occur. Herbicides and chemicals would not be used; someone would be hired to maintain the vegetation. The area below the panels would be planted in pollinator friendly plants. If approved, construction would start in 2025. ZPAC recommended forwarding the proposal to the Regional Planning Commission with the amendment to the right-of-way dedication amount by a vote of nine (9) in favor and zero (0) in opposition with one (1) member absent. The minutes of the meeting are attached.

RPC

The Kendall County Regional Planning Commission reviewed this proposal at their meeting on May 22, 2024. Mr. Asselmeier read a letter from State Representative Jed Davis. State Representative Davis asked the County deny this proposal. The Petitioner provided a power point presentation on the proposal. It was noted that no commercial solar projects had reached the end of their lifespan. Several neighbors expressed concerns about placing solar panels in a rural residential neighborhood. They were concerned about safety, aesthetics, loss of property value, drainage, spinning capacity (which is costly for the utility), and health of residents. A neighbor wanted the project to incorporate battery storage onsite; the project does not call for onsite battery storage. A neighbor asked if the panels where the panels were made. Discussion occurred regarding the life expectancy of the panels. Discussion occurred regarding the calculation of the decommissioning bond, which entity would hold the bond, and the review timetable of the bond. Discussion occurred regarding fencing; the fencing would be of agricultural style and would not have barbed wire. The Petitioner's drain tile expert explained the deliverables of the drain tile study and the upgrades to the drain tile that would occur. The project was placed on the south side of the property to have minimal impact on neighboring residences. The wires would be underground in most of the project area; wells would not be impacted. An article regarding the dark side of solar power was provided. Discussion occurred regarding the annexation requirement with Plainfield and enforcement of the rules connected to the special use permit. The Kendall County Regional Planning Commission recommended denial of the project by a vote of zero (0) in favor, seven (7) in opposition, and three (3) absent. The minutes of the meeting are attached.

GENERAL INFORMATION

Per Section 7:01.D.17 of the Kendall County Zoning Ordinance, commercial solar energy facilities businesses can be special uses on A-1 zoned property subject to the following conditions (Staff Comments in Bold):

a. All commercial solar energy facilities and test solar energy systems located within one point five (1.5) miles of a municipality shall either annex to the municipality or obtain an annexation agreement with the municipality requiring the municipality's regulations to flow through the property. **Petitioner is**

requesting a variance. Pre-annexation likely within ninety (90) days of approval of the special use permit, see Appendix X of the Application.

b. The setbacks for commercial solar energy facilities shall be measured from the nearest edge of any component of the facility as follows:

Occupied Community Buildings or Dwellings on Nonparticipating Properties-One hundred fifty feet (150') from the nearest point on the outside wall of the structure

Boundary Lines of Participating Properties-None

Boundary Lines of Nonparticipating Properties- Fifty feet (50') to the nearest point on the property line of the nonparticipating property

Public Road Rights-Of-Way-Fifty feet (50') from the nearest edge

The above setbacks do not exempt or excuse compliance with electric facility clearances approved or required by the National Electrical Code, the National Electrical Safety Code, Commerce Commission, Federal Energy Regulatory Commission, and their designees or successors. **Per the site plan, see Appendix I, the commercial solar energy facility is greater than one hundred fifty feet (150') from the closest non-participating structure. The perimeter fence is setback fifty feet (50') from the adjoining property line and road, except where the farmed wetlands are located (in which cases the setbacks are larger). The panels are twenty feet (20') from the fences on the north, west, and east side of the property and thirty feet (30') from the fence to the south.**

c. A commercial solar energy facility's perimeter shall be enclosed by fencing having a height of at least six feet (6') and no more than twenty-five feet (25'). **This is true. Per the site plan, see Appendix I, the fence seven feet (7') in height.**

d. No component of a solar panel as part of a commercial solar energy facility shall have a height of more than twenty feet (20') above ground when the solar energy facility's arrays are at full tilt. **Petitioner indicated that this is correct, see Appendix B, Page 8.**

e. The above setback, fencing, and component height requirements may be waived subject to written consent of the owner of each affected nonparticipating property. This written consent shall be submitted at the time of application submittal. **No such consent requested or needed.**

f. Sound limitations for components in commercial solar energy facilities shall follow the sound limitations established by the Illinois Pollution Control Board. **Petitioner indicated that they will follow these limitations, see Appendix R regarding the noise study.**

g. The County shall not require standards for construction, decommissioning, or deconstruction of a commercial solar energy system or related financial assurances to be more restrictive than agricultural impact mitigation agreement set in State law. The amount of any decommissioning payment shall be limited to the cost identified in the decommissioning or deconstruction plan, as required by the agricultural impact mitigation agreement, minus the salvage value of the project. A copy of the agricultural impact mitigation agreement shall be submitted with the application materials. **The decommissioning plan is included as Appendix O. As noted on page 5 of Appendix O, the decommissioning bond is set at One Hundred Thirty-One Thousand, Seven Hundred Six-Nine Dollars and Twelve Cents ($131,769.12). The payment of the bond is outlined in the Agricultural Impact Mitigation Agreement (AIMA) on page 11 of Appendix V.**

h. A vegetative screening shall be placed around the commercial solar energy facility. **The landscaping plan was provided as Appendix J. An open area pollinator seed mix is purposed around the perimeter of the property. The performance standards and ground cover maintenance requirements were included in the landscaping plan.**

i. Commercial solar energy facility applicants shall provide the results and recommendations from

consultations with the Illinois Department of Natural Resources obtained through the Ecological Compliance Assessment Tool (EcoCat) or a comparable successor tool. The commercial solar energy facility applicant shall adhere to the recommendations provided through this consultation. **The EcoCat was submitted and consultation was terminated without any specific recommendations.**

j. Commercial solar energy facility applicants shall provide the results of the United States Fish and Wildlife Service's Information for Planning and Consulting environmental review or a comparable successor toll that is consistent with the U.S. Fish and Wildlife Service's Land-Based Wind Energy Guidelines and any applicable United States Fish and Wildlife Service solar wildlife guidelines that have been subject to public review. **This was provided starting as Page 34 in Appendix L. The Indiana bat, tricolored bat, whooping crane, monarch butterfly, and eastern prairie fringed orchid were in the area. No impacts were anticipated.**

k. A facility owner shall demonstrate avoidance of protected lands as identified by the Illinois Department of Natural Resources and the Illinois Nature Preserve Commission or consider the recommendations of the Illinois Department of Natural Resources for setbacks from protected lands, including areas identified by the Illinois Nature Preserve Commission. **This is true. The site is designed around the farmed wetlands.**

l. A facility owner shall provide evidence at the time of application submittal of consultation with the Illinois State Historic Preservation Office to assess potential impacts on State-registered historic sites under applicable State law. **No potential impacts to State-registered historic sites exists, see Appendix M.**

m. A commercial solar energy facility owner shall plant, establish, and maintain for the life of the facility vegetative ground cover consistent with State law and the guidelines of the Illinois Department of Natural Resources' vegetative management plans. The vegetation management plan shall be required at the time of application submittal. **The vegetation management plan is included as part of the landscaping, including timelines for planting and maintenance of the vegetation, see Appendix J.**

n. The facility owner shall enter into a road use agreement with the jurisdiction having control over the applicable roads. The road use agreement shall follow applicable law. The facility owner shall supply the Kendall County Planning, Building and Zoning Department with a copy of the road use agreement. This provision shall be waived if the jurisdiction having control over the applicable roads does not wish to enter into an agreement. **As of the date of this memo, the road use agreement negotiations are ongoing. The transportation and access plan was provided as Appendix U.**

o. The facility owner shall repair or pay for the repair of all damage to the drainage system caused by the construction of the commercial solar energy system within a reasonable time after construction of the commercial solar energy facility is complete. The specific time shall be set in the special use permit. **No information was provided regarding drain tile. A drain tile survey is required, per the AIMA.**

BUILDINGS AND BUILDING CODES
No buildings are planned for the site. Any structures proposed for the site, including the solar arrays, shall obtain applicable permits.

ENVIRONMENTAL HEALTH
The property is presently farmland. No wells, septic systems, or refuse collection points were identified.

STORMWATER
The Petitioner submitted an application for a stormwater permit. Also, the Petitioner is designing the site per the Village of Plainfield's regulations.

The Petitioner provided groundwater studies, see Appendix S.

ACCESS
Per the site plan (Appendix I), the Petitioner's propose one (1) thirty foot (20') wide access road. Oswego

Township has granted an access permit.

The Petitioner is agreeable to right-of-way dedication and the Petitioner submitted a transportation and access plan.

PARKING AND INTERNAL TRAFFIC CIRCULATION
No parking is proposed.

LIGHTING
No lighting was proposed.

SIGNAGE
Per Appendix B, Page 8, a warning sign will be placed at the facility entrance and along the perimeter fence. These signs shall include address of the subject property and a twenty-four (24) hour emergency contact phone number.

GLARE
The Petitioner provided a glare study, see Appendix Q.

IMPACT ON PROPERTY VALUES
The Petitioner provided a property values study, Appendix T.

ODORS
No odors were foreseen.

RELATION TO OTHER SPECIAL USES
If approved, this would be the second special use permit for a commercial solar energy facility in unincorporated Kendall County.

FINDINGS OF FACT-SPECIAL USE PERMIT
§ 13:08.J of the Zoning Ordinance outlines findings that the Zoning Board of Appeals must make in order to recommend in favor of the applicant on special use permit applications. They are listed below in *italics.* Staff has provided findings in **bold** below based on the recommendation:

The establishment, maintenance, or operation of the special use will not be detrimental to or endanger the public health, safety, morals, comfort, or general welfare. **The Project will generate clean, renewable electricity while producing no air, noise, or water pollution, or ground contamination. The landscape buffer and existing vegetation around the site will be provided and preserved to screen the project from the view of neighbors and roads. The Petitioner proposes to use pollinator-friendly ground cover underneath the Project and native plantings around the perimeter. These include clover and grass species that promote the establishment and long-term health of bee populations. The Petitioner submitted a landscaping plan outlining the types of vegetation that will be planted, the timing of planting, and a maintenance plan for the vegetation. The Petitioner provided a report regarding the proposed landscaping plan and water quality. In addition, the proposal will promote the general welfare of Kendall County by supplying new jobs, new tax revenue and will be a source of generation of sustainable, clean, pollution-free renewable electricity.**

The special use will not be substantially injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted, nor substantially diminish and impair property values within the neighborhood. The Zoning classification of property within the general area of the property in question shall be considered in determining consistency with this standard. The proposed use makes adequate provisions for appropriate buffers, landscaping, fencing, lighting, building materials, open space and other improvements necessary to insure that the proposed use does not adversely impact adjacent uses and is compatible with the surrounding area and/or the County as a whole. **The proposal will not interfere with the use and enjoyment of nearby properties. The surrounding properties are zoned primarily A-1 and will not be prevented from continuing any existing use or from pursuing future uses. The proposal's operations would be quiet and would be utilizing pollinator friendly seeding, native plants, and vegetative screening. The landscape buffer will reduce any visual impact on neighbors who live nearby. The Petitioner provided**

a property value study showing no impact to the values of property near these types of projects.

Adequate utilities, access roads and points of ingress and egress, drainage, and/or other necessary facilities have been or are being provided. **The proposal will have adequate utility interconnections designed in collaboration with ComEd. The proposal does not require water, sewer, or any other public utility facilities to operate. The Petitioner will also build all roads and entrances at the facility and will enter into an agreement with Oswego Township regarding road use. After initial construction traffic, landscape maintenance and maintenance to the Project components are anticipated to occur on an as-needed basis, consistent with the Landscaping Plan. Existing traffic patterns will not be impacted in the post-construction operations phase. A drain tile survey will be completed prior to construction and foundation design will work around or reroute any identified drain tiles to ensure proper drainage. The Project will also be designed in a manner that will not materially modify existing water drainage patterns around its facilities.**

The special use shall in all other respects conform to the applicable regulations of the district in which it is located, except as such regulations may in each instance be modified by the County Board pursuant to the recommendation of the Zoning Board of Appeals. **If the requested variance is granted, the proposal meets all applicable regulations.**

The special use is consistent with the purpose and objectives of the Land Resource Management Plan and other adopted County or municipal plans and policies. **The proposal is also consistent with a goal and objective found on page 3-34 of the Land Resource Management Plan**, **"Support the public and private use of sustainable energy systems (examples include wind, solar, and geo-thermal)." The Kendall County Regional Planning Commission believes the proposal is inconsistent with the Land Resource Management Plan because the County's Plan and Plainfield's Plan call for this area to be Residential. (Amended after RPC).**

FINDINGS OF FACT-VARIANCE
§ 13.04.A.3 of the Zoning Ordinance outlines findings that the Zoning Board of Appeals must make in order to grant variations. They are listed below in *italics.* Staff has provided findings in **bold** below based on the recommendation:

The particular physical surroundings, shape, or topographical condition of the specific property involved would result in a particular hardship or practical difficulty upon the owner if the strict letter of the regulations were carried out. **The subject property is located within one point five (1.5) miles of the Village of Plainfield. The Village of Plainfield provided a letter stating they will enter into a pre-annexation agreement in the future.**

The conditions upon which the requested variation is based would not be applicable, generally, to other property within the same zoning classification. **Other A-1 zoned properties within one point five (1.5) miles of a municipality could request a similar variance, if the municipality refuses to annex or enter into a pre-annexation agreement.**

The alleged difficulty or hardship has not been created by any person presently having an interest in the property. **The difficulty was created because the Village of Plainfield did not wish to enter into a pre-annexation agreement or annex the property in a timely manner before application submittal.**

The granting of the variation will not materially be detrimental to the public welfare or substantially injurious to other property or improvements in the neighborhood in which the property is located. **Granting the variance would not be detrimental to the public or substantially injurious to other properties.**

That the proposed variation will not impair an adequate supply of light and air to adjacent property, or substantially increase the congestion in the public streets or increase the danger of fire, or endanger the public safety or substantially diminish or impair property values within the neighborhood. **The proposed variance would not impair light or air on adjacent property, cause congestion, increase the danger of fire, or negatively impact property values.**

RECOMMENDATION
Staff recommends approval of the requested special use permit and variance subject to the following conditions and restrictions. As of the date of this memo, the Petitioner has not agreed to these conditions and restrictions:

1. The site shall be developed substantially in accordance with the submitted site plan (Appendix I), landscaping plan, (Appendix J), operations and management plan (Appendix N), decommissioning plan, (Appendix O), road access plan (Appendix U), and Agricultural Impact Mitigation Agreement (Appendix V).
2. Within ninety (90) days of the approval of the special use permit, the owners of the subject property shall dedicate a strip of land ~~**thirty-three feet (33')**~~ **forty feet (40')** in depth along the southern property line to Oswego Township. The Kendall County Planning, Building and Zoning Committee may grant an extension to this deadline. **(Amended at ZPAC)**
3. Within ninety (90) days of the approval of the special use permit, the owner of the subject property shall enter into a pre-annexation agreement with the Village of Plainfield. The Kendall County Planning, Building and Zoning Committee may grant an extension to this deadline.
4. None of the vehicles or equipment parked or stored on the subject property allowed by the special use permit shall be considered agricultural vehicles or agricultural equipment.
5. All of the vehicles and equipment stored on the subject property allowed by the special use permit shall be maintained in good condition with no deflated tires and shall be licensed if required by law.
6. Any structures, included solar arrays, constructed, installed, or used allowed by this special use permit shall not be considered for agricultural purposes and must secure applicable building permits.
7. One (1) warning sign shall be placed at the facility entrance and one (1) warning sign shall be placed along the perimeter fence. These signs shall include, at minimum, the address of the subject property and a twenty-four (24) hour emergency contact phone number. Additional signage may be installed, if required by applicable law.
8. The operators of the use allowed by this special use permit acknowledge and agree to follow Kendall County's Right to Farm Clause.
9. The property owner and operator of the use allowed by this special use permit shall follow all applicable Federal, State, and Local laws related to the operation of this type of use.
10. Failure to comply with one or more of the above conditions or restrictions could result in the amendment or revocation of the special use permit.
11. If one or more of the above conditions is declared invalid by a court of competent jurisdiction, the remaining conditions shall remain valid.
12. This special use permit and variance shall be treated as a covenant running with the land and is binding on the successors, heirs, and assigns as to the same special use conducted on the property.

ATTACHMENTS
Application Materials
May 7, 2024, ZPAC Meeting Minutes (This Petition Only)
May 7, 2024, Email from the Oswego Fire Protection District
May 22, 2024, Kendall County Regional Planning Commission Minutes (This Petition Only)

DEPARTMENT OF PLANNING, BUILDING & ZONING
111 West Fox Street • Yorkville, IL • 60560
(630) 553-4141 Fax (630) 553-4179

APPLICATION

PROJECT NAME TPE IL KE240, LLC **FILE #:**_____

NAME OF APPLICANT (Including First, Middle Initial, and Last Name)
TPE IL KE240, LLC

CURRENT LANDOWNER/NAME(s)
Frank J. Santoro

SITE INFORMATION ACRES	SITE ADDRESS OR LOCATION	ASSESSOR'S ID NUMBER (PIN)
73.07	SEC 26-37-8	03-26-300-006

EXISTING LAND USE	CURRENT ZONING	LAND CLASSIFICATION ON LRMP
Agricultural	A-1	

REQUESTED ACTION (Check All That Apply):

_____SPECIAL USE ___ MAP AMENDMENT (Rezone to ____) X VARIANCE

____ADMINISTRATIVE VARIANCE ___ A-1 CONDITIONAL USE for:_____ ___ SITE PLAN REVIEW

___ TEXT AMENDMENT ___ RPD (___Concept; ___ Preliminary; ___ Final) ___ ADMINISTRATIVE APPEAL
___ PRELIMINARY PLAT ___ FINAL PLAT ___ OTHER PLAT (Vacation, Dedication, etc.)

___ AMENDMENT TO A SPECIAL USE (____Major; _____Minor)

[1]PRIMARY CONTACT	PRIMARY CONTACT MAILING ADDRESS	PRIMARY CONTACT EMAIL
Gloria Foxman	[redacted]	[redacted]

PRIMARY CONTACT PHONE #	PRIMARY CONTACT FAX #	PRIMARY CONTACT OTHER #(Cell, etc.)
[redacted]		

[2]ENGINEER CONTACT	ENGINEER MAILING ADDRESS	ENGINEER EMAIL
Jason Cooper		

ENGINEER PHONE #	ENGINEER FAX #	ENGINEER OTHER # (Cell, etc.)
[redacted]		

I UNDERSTAND THAT BY SIGNING THIS FORM, THAT THE PROPERTY IN QUESTION MAY BE VISITED BY COUNTY STAFF & BOARD/ COMMISSION MEMBERS THROUGHOUT THE PETITION PROCESS AND THAT THE PRIMARY CONTACT LISTED ABOVE WILL BE SUBJECT TO ALL CORRESPONDANCE ISSUED BY THE COUNTY.

I CERTIFY THAT THE INFORMATION AND EXHIBITS SUBMITTED ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND THAT I AM TO FILE THIS APPLICATION AND ACT ON BEHALF OF THE ABOVE SIGNATURES. **THE APPLICANT ATTESTS THAT THEY ARE FREE OF DEBT OR CURRENT ON ALL DEBTS OWED TO KENDALL COUNTY AS OF THE DATE OF THE APPLICATION.**

SIGNATURE OF APPLICANT [redacted] **DATE** 3/19/24
James Marshall, Authorized Representative

FEE PAID:$ 1,255
CHECK #: Avidia Bank

[1]*Primary Contact will receive all correspondence from County*
[2]*Engineering Contact will receive all correspondence from the County's Engineering Consultants*

Date Stamp Here If Checklist Is Complete

DEPARTMENT OF PLANNING, BUILDING & ZONING
111 West Fox Street • Yorkville, IL • 60560
(630) 553-4141 Fax (630) 553-4179

SPECIAL USE APPLICATION CHECKLIST

- [X] Completed Application Form
- [X] Application Fee
- [X] Detailed description of proposed use including business plan (hours of operation, number of employees, etc.)
- [X] Legal Description of Property Involved (submitted either on CD or email to PBZ Dept.)
- [X] Proof of Ownership (Deed or Title Insurance Policy)
- [ ] A Beneficiary Disclosure Statement for Property, if held in trust
- [X] Proof of Application to Soil and Water Conservation District for Natural Resource Inventory
- [X] Endangered Special Consultation Report if Zoned A-1 (http://dnrecocat.state.il.us/ecopublic/)
- [X] Special Use Findings of Fact (To be completed by petitioner)
- [ ] Engineering Consultants Fee Deposit Form (if engineering review is needed)
- [X] **15** Copies of a Plat of Survey less than five years old depicting the following items*:
  - [X] Title
  - [X] Scale of Drawing
  - [X] "North Arrow" showing north at top of the drawing
  - [X] Location Map
  - [X] Date of drawing (as well as dates of any and all revisions)
  - [X] Names of Developer/Owner
  - [X] Names of Designer/Surveyor
  - [X] All existing structures on the property and all structures on adjacent properties within 100' of property line

Adjacent structure information included in separate file

  - [ ] Utilities on the property and adjacent properties
  - [ ] Existing easements (location, width and purpose)
  - [X] Existing streets and other rights-of-way
  - [X] Topography at 1 or 2 foot contours

Topography on site plan

  - [ ] Wooded areas (if present)
  - [ ] Natural drainage to, from and on the property
  - [ ] Base Flood Elevation (if present on the property)
  - [X] Wetlands (if present on the property)
  - [X] Present zoning classification and PIN on subject property and all adjacent properties on plat or separate plan

*if submitting copies of 11"x17" or smaller, one additional 24"x36" copy is requested for display purposes.

- [X] Copy of the Plat of Survey must be submitted in PDF format on CD or emailed to PBZ Dept.

X **15** Copies of a Site Plan for the property involved depicting the following*:

- X Title/Project name
- X Scale of Drawing
- X "North Arrow" showing north at top of the drawing
- _____ Location and dimensions of all proposed structures (including square footage, seating capacity, etc.)
- _____ Proposed parking including stall dimensions as well as width of circulation aisles, driveways
- _____ Location of proposed signage (If applicable)
- X Location and details of proposed fencing (If applicable)
- _____ Location and details of proposed screening of proposed refuse area (if applicable)

X Copy of the proposed Site Plan must be submitted in PDF format on CD or emailed to PBZ Dept.

_____ Site data including the following:

- _____ Total Acres
- _____ Number of proposed parking stalls
- _____ Number of required parking stalls
- _____ Number of proposed handicap parking stalls
- _____ Number of required handicap parking stalls

(*if submitting copies of 11"x17" or smaller, one additional 24"x36" copy is requested for display purposes.)

_____ **2** Copies of a Photometric Plan (if proposed parking exceeds 30 stalls) including fixture details and pole mounting heights

X **3** Copies of a Landscape Plan including existing and proposed vegetation

_____ Phasing Plan (if applicable)

_____ Building Elevations showing all four sides indicating height, building materials, and colors

X Any other information requested by the Planning, Building and Zoning Department (i.e. Traffic Studies, Tree Surveys, Wetland Delineation, Pedestrian Circulation Plan, etc.)

THE FOLLOWING ITEMS MUST BE SUBMITTED PRIOR TO THE REGIONAL PLAN COMMISSION MEETING AND THE SPECIAL USE HEARING:

- _____ Copy of Letter of Notification(staff will help put together)
- _____ Proof of publication 15 to 30 days before the public hearing
- _____ Proof of notification to recipients (i.e. green/white receipts)
- _____ List of notice recipients
  (Within 750' excluding existing road R.O.W. if property is zoned as A-1 Agricultural, surrounding properties if existing zoning is other than A-1)

NOTE: PRIOR TO BEING PLACED ON THE REGIONAL PLAN COMMISSION AGENDA, THE PETITION MUST BE HEARD AND DISCUSSED BY THE AFFECTED TOWNSHIP AND MUNICIPALITY AT THEIR RESPECTIVE BOARD MEETINGS.

DEPARTMENT OF PLANNING, BUILDING & ZONING
111 West Fox Street • Yorkville, IL • 60560
(630) 553-4141 Fax (630) 553-4179

APPLICATION

PROJECT NAME TPE IL KE240, LLC **FILE #:**_____

NAME OF APPLICANT (Including First, Middle Initial, and Last Name)
TPE IL KE240, LLC

CURRENT LANDOWNER/NAME(s)
Frank J. Santoro

SITE INFORMATION ACRES	SITE ADDRESS OR LOCATION	ASSESSOR'S ID NUMBER (PIN)
73.07	SEC 26-37-8	03-26-300-006

EXISTING LAND USE	CURRENT ZONING	LAND CLASSIFICATION ON LRMP
Agricultural	A-1	

REQUESTED ACTION (Check All That Apply):

_____SPECIAL USE ___ MAP AMENDMENT (Rezone to ____) X VARIANCE

____ADMINISTRATIVE VARIANCE ___ A-1 CONDITIONAL USE for:_____ ___ SITE PLAN REVIEW

___ TEXT AMENDMENT ___ RPD (___Concept; ___ Preliminary; ___ Final) ___ ADMINISTRATIVE APPEAL
___ PRELIMINARY PLAT ___ FINAL PLAT ___ OTHER PLAT (Vacation, Dedication, etc.)

___ AMENDMENT TO A SPECIAL USE (____Major; _____Minor)

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Gloria Foxman	[redacted]	[redacted]

PRIMARY CONTACT PHONE #	PRIMARY CONTACT FAX #	PRIMARY CONTACT OTHER #(Cell, etc.)
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[2]ENGINEER CONTACT	ENGINEER MAILING ADDRESS	ENGINEER EMAIL
Jason Cooper		

ENGINEER PHONE #	ENGINEER FAX #	ENGINEER OTHER # (Cell, etc.)
[redacted]		

I UNDERSTAND THAT BY SIGNING THIS FORM, THAT THE PROPERTY IN QUESTION MAY BE VISITED BY COUNTY STAFF & BOARD/ COMMISSION MEMBERS THROUGHOUT THE PETITION PROCESS AND THAT THE PRIMARY CONTACT LISTED ABOVE WILL BE SUBJECT TO ALL CORRESPONDANCE ISSUED BY THE COUNTY.

I CERTIFY THAT THE INFORMATION AND EXHIBITS SUBMITTED ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND THAT I AM TO FILE THIS APPLICATION AND ACT ON BEHALF OF THE ABOVE SIGNATURES. **THE APPLICANT ATTESTS THAT THEY ARE FREE OF DEBT OR CURRENT ON ALL DEBTS OWED TO KENDALL COUNTY AS OF THE DATE OF THE APPLICATION.**

SIGNATURE OF APPLICANT [redacted] **DATE** 3/19/24
James Marshall, Authorized Representative

FEE PAID:$ 1,255
CHECK #: Avidia Bank

[1]*Primary Contact will receive all correspondence from County*
[2]*Engineering Contact will receive all correspondence from the County's Engineering Consultants*

Date Stamp Here If
Checklist Is Complete

DEPARTMENT OF PLANNING, BUILDING & ZONING
111 West Fox Street • Yorkville, IL • 60560
(630) 553-4141 Fax (630) 553-4179

VARIANCE APPLICATION CHECKLIST

- X Completed Application Form
- X Application Fee
- X Legal Description of Property Involved (submitted either on CD or email to PBZ Dept.)
- X Proof of Ownership (Deed or Title Insurance Policy)
- X A Beneficiary Disclosure Statement for Property, if held in trust
- _____ Variance Findings of Fact (To be completed by petitioner)
- X **12** Copies of a Plat of Survey less than five years old depicting the following items*:
  - X Title
  - X Scale of Drawing
  - _____ "North Arrow" showing north at top of the drawing
  - X Date of drawing
  - X Developer/Owner
  - X Designer/Surveyor
  - X All existing structures on the property and adjacent properties
  - _____ Location and dimensions of all <u>proposed</u> structures including square footage
  - X Utilities on the property and adjacent properties
  - X Easements, location, width and purpose
  - X Streets and other rights-of-way
  - X Topography at 1 or 2 foot contours
  - _____ Wooded areas (if present)
  - X Natural drainage to, from and on the property
  - X Base Flood Elevation (if present on the property)
  - X Wetlands (if present on the property)
  - _____ Location Map
  - _____ Present zoning classification and PINs on property and all adjacent properties

  *if submitting copies of 11"x17" or smaller, one additional 24"x36" copy is requested for display purposes.)
- X A copy of the plat of survey must be submitted in PDF format either on CD or email to PBZ Dept.
- X Supplemental Information as requested by Staff (i.e. building plans, building elevations, sign details, fence details, etc.)

THE FOLLOWING ITEMS MUST BE SUBMITTED PRIOR TO THE ZONING BOARD OF APPEALS HEARING:

- X Copy of Letter of Notification
- X Proof of publication 15 to 30 days before the public hearing
- X Proof of notification to recipients (i.e. green/white receipts)
- X List of notice recipients
  (Within 500' if property is zoned as A-1 Agricultural, surrounding properties if existing zoning is other than A-1)

KENDALL COUNTY
DISCLOSURE OF BENEFICIARIES FORM

1. Applicant TPE IL KE240, LLC

Address [redacted]

City [redacted] State [redacted] Zi[redacted]

2. Nature of Benefit Sought Special Use Permit and Variance

3. Nature of Applicant: (Please check one)
   - ___ Natural Person (a)
   - X Corporation (b)
   - ___ Land Trust/Trustee (c)
   - ___ Trust/Trustee (d)
   - ___ Partnership (e)
   - ___ Joint Venture (f)

4. If applicant is an entity other than described in Section 3, briefly state the nature and characteristics of the applicant:
   N/A

5. If your answer to Section 3 you have checked letter b, c, d, e, or f, identify by name and address each person or entity who is a 5% shareholder in case of a corporation, a beneficiary in the case of a trust or land trust, a joint venture in the case of a joint venture, or who otherwise has proprietary interest, interest in profits and losses or right to control such entity:

NAME	ADDRESS	INTEREST
Please see attached information.		

6. Name, address, and capacity of person making this disclosure on behalf of the applicant:
   Adam Beal, Manager, c/o TPE Development, LLC, 3720 S. Dahlia St., Denver, CO 80237

[redacted]ZRIFICATION

I, Adam Beal [redacted], being first duly sworn under oath that I am the person making this disclosure on behalf of the applicant, that I am duly authorized to make the disclosure, that I have read the above and foregoing Disclosure of Beneficiaries, and that the statements contained therein are true in both substance and fact.

Subscribed and sworn to before me this 22nd day of April, A.D. 2024

(seal)

STEVEN M KRATZ
NOTARY PUBLIC - STATE OF MICHIGAN
COUNTY OF MASON
My Commission Expires April 23, 2024
Acting in the County of Kalamazoo

[redacted]
Notary Public

TPE IL KE240, LLC OWNERS

APPLICANT: TPE IL KE240, LLC

OWNERS: TPE Development, LLC (Manager and Sole Member)

Turning Point Energy, LLC (Managing Member, TPE Development, LLC)
Jared Schoch – Managing Member
[redacted]

Lighthouse Advisers, LLC (Member, TPE Development, LLC)
Adam Beal – Managing Member
[redacted]

Marshall Consulting, LLC (Member, TPE Development, LLC)
James Marshall – Managing Member
[redacted]

SolCom Energy, LLC (Member, TPE Development, LLC)
Salar Naini – Managing Member
[redacted]

BT Energy Consulting, LLC (Member, TPE Development, LLC)
Bruce Tang – Managing Member
[redacted]

Proposed 4.99 Megawatt AC Ground-Mount Community Solar Facility

Kendall County, IL

TPE IL KE240, LLC
c/o TurningPoint Energy, LLC
3720 South Dahlia Street
Denver, CO 80237

Project Manager: Gloria Foxman
Phone: (646) 229-5041
Email: gfoxman@tpoint-e.com

April 23, 2024

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- I – Site Plan
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- K – Wetland Delineation
- L – Environmental Constraints Memorandum
- M – SHPO Correspondence
- N – Operations and Maintenance Plan
- O – Decommissioning Plan
- P – FEMA FIRM Map
- Q – Glare Study and FAA Notice Criteria Filing
- R – Noise Study
- S – Contaminant and Water Studies
- T – Property Value Impact Study
- U – Transportation and Access Plan
- V – AIMA
- W – Owner Letter
- X – Plainfield Permitting Letter
- Y – Road Access Permit

1.0 INTRODUCTION

1.1 Project Overview

TurningPoint Energy, LLC d/b/a TPE Development (TPE) through its affiliated entity TPE IL KE240, LLC (the "Applicant"), proposes the development of a 4.99-megawatt (MW) AC solar photovoltaic system on a parcel of land between Simons Road and Collins Road in Kendall County, Illinois (the Project). The Project will consist of a single axis tracking ground-mounted solar array, associated electrical equipment, an access driveway, and fencing covering approximately 38 acres of the 73.07-acre host parcel (ID 03-26-300-006).

The Project intends to participate in the Illinois Adjustable Block Community Solar Program and, if constructed, will power the equivalent of approximately 800-850[1] homes. Community Solar allows residents of Illinois to purchase credits for locally generated clean electricity at a discount to current electric rates without having to install panels on their roof.

The Project's host parcel is located in the A-1 (Agricultural) zoning district within unincorporated Kendall County. The Kendall County Zoning Ordinance (Ordinance) allows for the construction and operation of commercial solar energy facilities by Special Use Permit (SUP) in the A-1 District. The Project is designed to comply with all setbacks prescribed in the Ordinance to ensure a sufficient buffer is maintained between the array and neighboring property lines and rights-of-way. The Project is therefore seeking approval of a SUP to construct, operate and maintain a 4.99 MW AC solar photovoltaic system in the A-1 zoning district. The Project is also seeking a variance to receive this Special Use Permit through Kendall County and then complete a pre-annexation agreement with the village of Plainfield within 90 days, in order to comply with the Kendall County Zoning Ordinance requirement that all commercial energy facilities located within one point five (1.5) miles of a municipality shall either annex to the municipality or obtain an annexation agreement with the municipality. This request for variance is made pursuant to the written request of the village of Plainfield, due to the hardship that their ordinance does not address solar projects of this type.

If approved, the Project will bring significant and consistent benefits to Kendall County and the community surrounding the Project. Specifically, the Project will create approximately 50-75 jobs during the projected 12- to 18-month development period and will generate property tax revenue in amounts estimated at more than $650,000 over 25 years and more than $1,000,000 over 40 years. Property tax revenue in Year 1 of the Project's operations is expected to be over 11 times the amount currently generated for local applicable taxing jurisdictions. Unlike nearly all other forms of development (residential, commercial, or industrial), the local community will benefit from the significant economic benefits mentioned above without straining community infrastructure – no new children in schools, no use of water and sewer systems, extremely limited use of roads, and little to no need for police or fire departments.

1.2 About Turning Point Energy

Formed in 2014, TPE is a privately held, independent company transforming our energy future by creating freedom to choose a smarter, cleaner, more flexible way forward through community solar. As a privately

[1] Calculation based on data provided by the U.S. Energy Information Administration (EIA): https://www.eia.gov/energyexplained/use-of-energy/electricity-use-in-homes.php

held and independent company, TPE customizes projects to the unique needs of each client. Its team has financed and/or built over 2 Gigawatts (GW) of the solar projects operating in the U.S. today. Since 2017, TPE has focused these services on the expanding community solar market in states including Illinois, Maine, Maryland, Delaware, Pennsylvania, New Mexico, Texas, and Rhode Island. TPE's development and investment portfolio now includes over 169MW of community solar projects in construction or operation, with an additional 840MW in solar projects under development.

TPE is a "triple bottom line" company; we believe that our business should create financial, environmental, and community value in every project we create. Our intent is to be long-term members of the communities where our projects are developed. Upon successful permitting and utility interconnection, TPE donates to local charities and/or non-profits that support those in need.

2.0 SITE LOCATION & EXISTING CONDITIONS

TPE, in coordination with its engineering consultant, Kimley-Horn and Associates Inc (Kimley-Horn), has prepared and compiled information from numerous sources to form the basis of design for the proposed Project. A summary of existing conditions and the design elements that avoid and or minimize impact to the environment and surrounding community is presented in the following subsections.

2.1 Existing Conditions

The proposed Project will occupy approximately 38 acres of 73.07 acres of agricultural land in Kendall County. The site is located between Simons Road and Collins Road east of Red Hawk Drive. A map showing the Project's footprint is included in the NRI Report in **Appendix E.** The host parcel is surrounded on the north, east and south side by agricultural fields, on the west and north by residential homes, and on the east by a cemetery. Based on the results of a Level 1 Wetland delineation of the subject site, potential agricultural wetlands in the northwestern, northeastern, and southern portion of the study area and potential waterways in the central portion of the study area were identified. Per the Natural Resources Conservation Services (NRCS), the onsite soils consist primarily of soil group C with some C/D and B/D loams.

2.2 Site Control

The landowner and TPE IL KE240, LLC entered into a Real Estate Lease Option Agreement on May 8, 2023. The Agreement grants permission to the Applicant to construct, operate and maintain a solar photovoltaic system on the host parcels.

2.3 Natural Resources and Consultations with State and Federal Authorities

2.3.1 Natural Resource Inventory ("NRI")

Kimley-Horn submitted the Natural Resource Inventory (NRI) packet in February 2024 to the Kendall County Soil & Water Conservation District (SWCD). The NRI report was finalized in March 2024. A copy of the report is included as **Appendix E**. See **Appendix S** for the beneficial impacts of a solar farm on the soil.

2.3.2 Wetlands and Floodplain

The Project will be designed to avoid impacts to USACE-jurisdictional waters. A Level 1 Wetland Delineation was completed in February 2024 and identified potential agricultural wetlands in the northwestern, northeastern and southern portion of the parcel. Kendall County requires all development activities impacting wetlands to comply with the Kendall County Stormwater Management Plan. The Project is designed to avoid all wetlands. Please see the Wetland Delineation in **Appendix K** for additional information.

Per FEMA FIRM Map Panel 17093C0070G (effective February 4, 2009), the entire limit of disturbance for the development is in Zone X, an Area of Minimal Flood Hazard. Therefore, the Project area is not within a FEMA flood zone. Refer to **Appendix P** for a copy of the FEMA FIRMette.

2.3.3 U.S. Fish & Wildlife Service ("USFWS")

The Project will be designed such that no federally listed species will be significantly impacted. Solar projects typically impose only minimal impacts on wildlife species. The Project's potential to impact federally protected species was evaluated as part of an Environmental Constraints Memorandum, which is included as **Appendix L**. The assessment indicated that five federally listed species should be considered in an effects analysis for the Project, including the Indiana bat, tricolored bat, whooping crane, monarch butterfly, and eastern prairie fringed orchide. Due to the highly disturbed nature of the existing use (agricultural field), no impacts are anticipated to the listed species.

Prior to construction, consultation with the USFWS will occur to confirm a "No Effect" determination.

2.3.4 Illinois Department of Natural Resources (IDNR) State Ecological Review

The Applicant consulted with IDNR for potential impacts to state threatened or endangered species. This consultation was conducted pursuant to IDNR's Ecological Compliance Assessment Tool (EcoCAT). The Applicant submitted an EcoCAT review request to IDNR in September 2023. IDNR concluded that adverse impacts to state listed species or protected resources are unlikely. Accordingly, IDNR terminated consultation pursuant to 17 Ill. Adm. Code Part 1075. The Project will comply with all IDNR recommendations where possible. Refer to **Appendix F** for a copy of the IDNR EcoCAT.

2.3.5 Illinois State Historic Preservation Office

Under the Illinois State Agency Historic Resources Protection Act, the State Historic Preservation Office (SHPO) division at IDNR is responsible for studying possible Project effects on archaeological and/or architectural (cultural) resources. Agencies requiring SHPO evaluation concurrent with their review include the Illinois Environmental Protection Agency (IEPA), IDNR, and the USACE. The Applicant received a response in February 2024 indicating that the Project is exempt from further review, which is included as **Appendix M**.

2.3.6 Illinois Department of Agriculture (IDOA)

The Illinois Counties Code (ILCS 5/5-12020(c)) requires the owner of a commercial solar energy facility to enter into an Agricultural Impact Mitigation Agreement (AIMA) with the Illinois Department of Agriculture prior to the date of any required public hearing for the Project's permits. The intent of the AIMA is to

preserve and/or restore the integrity of affected agricultural land during construction and decommissioning activities. On April 19, 2024, TPE received a signed AIMA from the Department of Agriculture, which is included in this application submittal as **Appendix V.**

2.4 Community Outreach & Benefits

TPE likes to proactively engage the communities in which we work early in the process to determine what questions and concerns potential neighbors might have and give us adequate time to educate and address them prior to the public process.

We typically place calls, send letters and door knock on adjacent properties to our planned community solar site as well as meet with local officials, a process we began in August 2023 for this project

Community solar projects such as TPE IL KE240, LLC enable residents to receive savings on their electricity bills from signing up to participate in a community scale solar project without installing solar on their rooftops.

In 2018, The State of Illinois enacted a statute that imposes a standardized, state assessment of fair cash value for solar energy projects designed to cover both the improvements (Project equipment) and the land. As a result, once constructed and operational, this Project will pay property taxes of more than $650,000 over 25 years split between the Kendall County and applicable school, fire, and other taxing authorities.

The Project will create approximately 50-75 jobs during the development and construction phases of the Project, which should take approximately 12 to 18 months, prior to the start of Project operations. A regional operations and maintenance firm will service the facility over its working life cycle.

Unlike nearly all other forms of development (residential, commercial, or industrial), the community will benefit from the significant economic benefits mentioned above without straining community infrastructure – no new children in schools, no use of water and sewer systems, limited use of roads, and little to no need for police or fire departments.

2.5 Existing Drain Tile Systems

The Applicant has retained Tom Huddleston with Huddleston McBride Professional Land Drainage Services (Huddleston) to consult on drain tile issues. Huddleston will complete an existing drain tile survey prior to construction and work closely with the Applicant to ensure proper drainage and maintain and/or improve the existing surface and subsurface drainage to the extent practicable. Huddleston will work closely with the Applicant to remove and replace any drain tiles within the solar array footprint while ensuring proper drainage and maintaining the existing and subsurface drainage.

3.0 PERFORMANCE STANDARDS

3.1 Project Description & Design Standards

The Project will consist of a 4.99 MW ground-mounted solar array. The solar array will be comprised of Tier 1 graded solar panels attached to single-axis trackers installed on top of driven steel pier foundations

or ground screw foundations, depending on the subsurface composition. An Illinois licensed engineer will certify the foundation and design of the solar racking system is suitable to meet local soil and climate conditions.

At full tilt, the racking system with modules attached will not exceed twenty (20) feet in height. In addition to the modules and racking, the Project will include the installation of string-inverters and one medium voltage step-up transformer (600V:12.5KV). The point of interconnection for the Project will be located on Collins Road. ComEd will install new utility-owned poles perpendicular to the existing infrastructure. Please refer to the site plan in **Appendix I** for additional detail.

The Project will be constructed by a licensed Engineering Procurement and Construction ("EPC") Contractor. The design and construction process will comply with all federal, state, and local appliable building, electrical and fire codes, as well as the National Electrical Code ("NEC"). The EPC Contractor shall also possess all professional and trade licenses required by the state and local authorities.

The EPC Contractor will create and maintain a health and safety manual in accordance with OSHA requirements which establishes appropriate rules and procedures concerning workplace safety.

Noise from construction activities will be managed in accordance with all applicable local and state regulations.

The inverter and transformers will be located on one or more concrete pads or piles. Utility poles at the point of interconnection will be above ground. The Project footprint area covers approximately 38 acres.

The panels will be surrounded by a seven (7) foot-high fence for safety and security purposes, as well as a landscape buffer to provide vegetative screening using native, pollinator-friendly plants. Entry into the fenced areas will be through gates with Knox Boxes for emergency access.

The Project design and planning has focused on minimizing any potential impacts to the surrounding neighborhood, in compliance with the Environmental Performance Standards listed in Section §16.60.040 of the Ordinance. The Project will produce electricity without requiring any combustion of materials. As a result, the community solar array will not cause or emit odors, dust, gas, smoke, or fumes. Further, the Project will have very few moving parts and will generate electricity primarily in a passive manner – collecting the sun's rays and converting energy associated with the rays into electricity. There will be no vibrations generated by the solar panels or racking during the operating period of the Project. There may be de minimis vibrations produced by the inverter, and any such vibrations will not extend beyond the host parcels' property lines. The array was designed to meet all required setbacks from neighboring properties and rights of way in compliance with the Ordinance.

A warning sign shall be provided at the facility entrance and along the perimeter fence including the facility's 911 address and a 24-hour emergency contact number. No outdoor storage is planned for the Project at this time. In the event outdoor storage is needed, the Project will apply for the necessary approvals for the contemplated storage.

The scope of work includes but is not limited to:

- Preservation of existing topsoil onsite
- Construction of a gravel access road
- Construction of project equipment pads
- Construction of a temporary staging area(s)

- Installation of solar panels and associated support equipment and structures
- Landscape work including pollinator plants, native plants, and landscape buffers

3.2 Noise

The Project will operate in accordance with the applicable noise limits of the Illinois Pollution Control Board (IPCB). Solar panels themselves do not produce any noise. The only components in the array that generate noise are the inverters and transformers. The inverter pad location and design will ensure that any noise emitting components will be positioned at a sufficient distance and directed away from neighboring parcels. Kimley-Horn prepared a noise study that evaluated the projected sound levels generated by the string inverters that are likely to be deployed for the Project. The Noise Study is included as **Appendix R**. The Noise Study concludes that the Project, as designed, will more than comply with the IPCB's noise limitations. Likewise, final inverter placement and system configuration will ensure compliance with Illinois Pollution Control Board standards. Accordingly, the Project, as designed, will more than comply with the ICPB's noise limits.

3.3 Vibration

There will be no vibrations generated by the solar panels or racking during the operating period of the Project. There may be de minimis vibrations produced by the inverter, but any such vibrations will not extend beyond the host parcel's property lines. The Project's comprehensive maintenance plan includes routine inspections to assess and correct any malfunctioning equipment.

3.4 Environmental Impact

The Project will not emit any air pollution. It will, in fact, provide a net environmental carbon benefit. According to the EPA Clean Energy Equivalencies Calculator the Project will avoid the environmental equivalent of 8,090 metric tons of carbon emissions annually, which is comparable to:

- Carbon sequestered by 9,446 acres of forest
- 910,352 gallons of gasoline consumed each year
- 1,926 passenger vehicles removed from our streets

A commitment to wildlife-sensitive construction and operation practices during and after construction will allow for increased local biodiversity. TPE proposes to use pollinator-friendly ground cover underneath the Project and native plantings around the perimeter. These include clover and grass species that promote the establishment and long-term health of bee populations. The Project will not use any pesticides for vegetation management.

3.5 Toxic substances

There are no toxic substances in the panels. The Project will incorporate Tier 1 silicon-based panels, which have been analyzed as follows by North Carolina State University:

> Well over 80% (by weight) of the content of a PV panel is the tempered glass front and the aluminum frame, both of which are common building materials. Most of the remaining portion are common plastics, including polyethylene terephthalate in the back

> sheet, EVA encapsulation of the PV cells, polyphenyl ether in the junction box, and polyethylene insulation on the wire leads. The active, working components of the system are the silicon photovoltaic cells, the small electrical leads connecting them together, and to the wires coming out of the back of the panel. The electricity generating and conducting components make up less than 5% of the weight of most panels. The PV cell itself is nearly 100% silicon, and silicon is the second most common element in the Earth's crust. The silicon for PV cells is obtained by high-temperature processing of quartz sand (SiO2) that removes its oxygen molecules. The refined silicon is converted to a PV cell by adding extremely small amounts of boron and phosphorus, both of which are common and of very low toxicity.

Please see **Appendix S** for the full report.

3.6 Fire Safety

The solar panels and racking, which comprise the majority of the Project's equipment, are not flammable. Tempered glass offers protection from heat and the elements, and the panels are designed to absorb heat as solar energy. As concluded by the North Carolina State University:

> …Concern over solar fire hazards should be limited because only a small portion of materials in the panels are flammable, and those components cannot self-support a significant fire. Flammable components of PV panels include the thin layers of polymer encapsulates surrounding the PV cells, polymer backsheets (framed panels only), plastic junction boxes on rear of panel, and insulation on wiring. The rest of the panel is composed of non-flammable components, notably including one or two layers of protective glass that make up over three quarters of the panel's weight.

Please see **Appendix S** for the full report.

3.7 Glare and Heat

As explained in Fire Safety **Section 3.6**, there is no heat generated by the Project.

A glare study was performed by TPE using ForgeSolar software to assess the possible effects of reflectivity created by the Project. ForgeSolar software incorporates GlareGauge, the leading solar glare analysis tool which meets Federal Aviation Administration ("FAA") standards and is used globally for glare analysis. It is based on the Solar Glare Hazard Analysis Tool licensed from Sandia National Laboratories.

As input to the software, two (2) Route Receptors were created along roadways in vicinity of the site. Height was assessed at five (5) feet above ground to emulate passengers in cars. Further, twelve (12) Observation Points were modeled at specific dwellings located around the perimeter of the solar array. Heights were modeled at ten (10) feet above ground to emulate residents on the first floor or doorsteps of dwellings and evaluate the glare impact.

A direct line of sight between the Project and the designated Route Receptors and Observation Receptors is required to produce any discernible glint/glare, so if there is existing or proposed vegetation between the receptor and the project, any glint/glare would be eliminated.

The model assumes the sun is shining 100% of the time it is above the horizon (during laylight hours). That is, it does not account for cloudy or overcast conditions when the sun is not shining. The results, therefore, are the maximum expected glint and glare during any single year.

Existing topography is taken into account in the simulation. Some of the planned vegetation is considered in the simulation. The model assumed the necessary vegetation that may screen the Project, so this must be considered when interpreting the study results. Existing vegetation was modeled.

To reduce glare in the east and west directions during low sun periods, a 5-degree tracker resting angle was implemented during these times, which eliminates the main source of glare for solar projects. This lower angle will position the panels in a near flat position, so they face upwards and do not reflect light from the rising or setting sun towards nearby buildings or cars.

Based on the project specific location, sun position throughout the year, and the above inputs/assumptions, no potential for glint or glare was identified in the analysis at any of the Route Receptors or neighboring Observation Receptors. As stated before, some vegetation is assumed in the model to help screen the Project, so this must be considered when interpreting the study results. It is important to note that existing vegetation and future vegetation growth will further screen the view of the project from nearby properties.

Please see **Appendix Q** for a more detailed analysis of the Forge Solar results as well as a copy of the ForgeSolar Assessment.

3.8 Setback Compliance, Landscape & Buffering Plan

3.8.1 Setback Compliance

This Project proposes to meet the following setback requirements as set forth by the Ordinance:

- Per §7:01.D.17b, solar panels, structures, and electrical equipment shall be erected no less than fifty (50) feet from any lot line or public road right-of-way and no less than one hundred fifty (150) feet from any occupied community building or dwelling, other than a residence on the same ownership parcel.

3.8.2 Landscape and Buffering Plan

Appendix J includes a Landscape Plan that complies with the following guidelines in the Ordinance:

- Per §7:01.D.17h, a vegetative screening shall be placed around the commercial solar energy facility.
- Per §7:01.D.17m, a commercial solar energy facility owner shall plant, establish, and maintain for the life of the facility vegetative ground cover consistent with State law and the guidelines of the Illinois Department of Natural Resources' vegetative management plans.

3.9 FAA Filing

The Project filed using the Notice Criteria Tool with the FAA and the results indicated the Project did not exceed the Notice Criteria. As a result, no additional filings are required with the FAA. Please see **Appendix Q** for a copy of the filing.

3.10 Safety and Security

The solar arrays will be enclosed by a 7-foot-high security fence and locked gates, as required by the Ordinance and the National Electrical Code (NEC). Emergency access to the fenced areas will be through Knox-Boxes to provide the required 24-hour access. The gravel drive has been designed to allow emergency vehicle access, including fire trucks.

Emergency responders will be provided with the key/code for the Knox-Boxes.

3.11 Interconnection

The proposed Project will interconnect to an existing 12 kV ComEd feeder on the distribution system. The utility will install approximately 150' of 12kV line extension along with multiple poles for metering and pole-top equipment.

3.12 Operations and Maintenance

The Operation and Maintenance Plan including a comprehensive vegetative management plan for the Project is included as **Appendix N**. Preventive maintenance will be conducted on a schedule based on manufacturer's recommendations and industry best practices and standards of care. Regular maintenance will include vegetation control, fence inspection and physical inspection of all system components. A mowing and rotational grazing schedule will be followed, based on the plant species in the seed mix, that is properly timed to balance avoiding the disturbance of wildlife and native pollinator-friendly vegetation with the need to avoid the establishment of weeds. This balance is enabled by the approval of the variance requests.

Vegetation underneath and between the solar panels will be well-maintained in the defined lease area to keep vegetation below the low edge of the solar panels at maximum tilt angle. Management should comply with any local ordinances or conditions of approval. Mowing and weed management schedules will be adjusted as needed to allow for flexibility based on based on the establishment of the seed mix, rainfall and vegetation growth. Any chemical control shall be used in accordance with Illinois noxious weed regulations. The Project will be monitored continuously for system failures via a Supervisory Control and Data Acquisition (SCADA) system and/or Data Acquisition System (DAS) system. Qualified and insured technicians will be dispatched to address any system failures.

3.13 Decommissioning Plan

A Decommissioning Plan has been included as **Appendix O**, which has been designed to meet the standards specified in the AIMA as well as the Ordinance. The AIMA references that "During the County permit process, or if none, then prior to the commencement of construction, the Facility Owner shall file with the County a Deconstruction Plan." The Deconstruction Plan will meet all the standards specified in the AIMA.

Upon review and approval of the decommissioning cost estimate by the Zoning Enforcement Officer, the required Financial Assurance documentation to cover the estimated costs of decommissioning and site reclamation of the Project will be provided to the Kendall County Planning, Building and Zoning Department, in accordance with the AIMA and the Ordinance.

Decommissioning will include removal of all structures (including panels, equipment, poles, piles, foundations, conduits, fencing, and roads) and restoration of soil and vegetation, to comply with the Ordinance. At the end of the operational life of the Project, the Project will be safely dismantled using conventional construction equipment. The Project consists of numerous materials that can be resold or recycled for significant scrap value, including steel, aluminum, glass, copper, and plastics. The solar panels are not considered hazardous waste. The panels used in the Project will contain silicon, glass, and aluminum, which have value for recycling. Often, current market salvage values of a Project exceed estimated decommissioning and site restoration expenses.

The site will be restored and reclaimed to approximately the pre-construction condition in conformance with the site lease agreement and the AIMA. It is assumed that the site will be returned to agricultural use after decommissioning and appropriate measures will be implemented to easily transition back to a use for agricultural purposes.

3.14 Avoidance and Mitigation of Damages to Public Infrastructure

Roads: Roadways improved in preparation for and during the construction of the commercial solar energy facility will be repaired and restored as required by applicable Kendall County ordinances at the reasonable cost of the Project if the roadways have degraded or were damaged as a result of construction-related activities.

Drainage Systems: A drain tile survey will be completed as required by the AIMA. The Project will ensure no permanent adverse impact to existing mutual drains and drainage patterns. Within the footprints of the solar array, the Project will endeavor to maintain or improve drainage over that which currently exists on site by rerouting drainage networks within the project footprint around footprints where necessary and by repairing or replacing damaged drain tiles.

4.0 SPECIAL USE REVIEW CRITERIA

4.1 Approval Standards for Special Use (Kendall County Zoning Ordinance §13:08.J)

1. *That the establishment, maintenance, and operation of the special use will not be detrimental to, or endanger, the public health, safety, morals, comfort, or general welfare.*

The Project will be beneficial for Kendall County residents. The Project will generate clean, renewable electricity while producing no air, noise, or water pollution, ground contamination or unsightly views. The landscape buffer and existing vegetation around the site will be provided and preserved to screen the Project from the view of neighbors and roads. TPE proposes to use pollinator-friendly ground cover underneath the Project and native plantings around the perimeter. These include clover and grass species that promote the establishment and long-term health of bee populations. Please refer to the Landscape Plan provided in **Appendix J** for more details. The replacement of row crops with a pollinator seed mix will be a net positive for stormwater. Per the Minnesota Rural Water Association, solar installations with native pollinator-friendly ground cover achieve positive impacts similar to soil conservation projects, which reduce soil erosion, reduce soil quality degradation, and improve water quality. This report is included in **Appendix S**. The Project will be designed to account for all existing features, environmental features, and the county's Ordinance. Please refer to **Appendix I** for the Site Plan. The Project's Operations and Maintenance Plan (see **Appendix N**) also demonstrates how it will manage vegetation and weed control to prevent any unwanted vegetation from encroaching upon neighboring properties. In addition, the Project will promote the general welfare of Kendall County by supplying new jobs, new tax revenue and will be a source of generation of sustainable, clean, pollution-free renewable electricity.

2. *That the special use will not be substantially injurious to the use and enjoyment of other properties in the immediate vicinity for the purposes already permitted, nor substantially diminish and impair property values within the neighborhood. The Zoning classification of property within the general area of the property in question shall be considered in determining consistency with this standard. The proposed use shall make adequate provisions for appropriate buffers, landscaping, fencing, lighting, building materials, open space and other improvements necessary to insure that the proposed use does not adversely impact adjacent uses and is compatible with the surrounding area and/or the County as a whole.*

The Project will not interfere with the use and enjoyment of nearby properties. The surrounding properties are zoned primarily AG-1 and will not be prevented from continuing any existing use or from pursuing future uses. Solar projects like this one are good neighbors: the Project's operations would be quiet and create a harmonious environment, utilizing pollinator friendly seeding, native plants, and vegetative screening. The landscape buffer will reduce any visual impact on neighbors who live nearby. Moreover, the Project will not be detrimental to the value of other properties or improvements in the vicinity. As indicated by the property value impact study, **Appendix T**, the existence of the Project will have no negative impact on neighboring property values, and therefore will not substantially diminish or impair property values in the vicinity of the Project. The CohnReznick property value impact study indicates that solar facilities located in similar areas, with similar land

uses, do not cause any negative impacts to adjacent real estate, based on a review of academic studies, CohnReznick's own paired sales data, and interviews with County Assessors and other Market Participants. The study further details how solar facilities are generally harmonious with surrounding uses.

3. *That adequate utilities, access roads and points of ingress and egress, drainage, and/or other necessary facilities have been or are being provided.*

The Project will have adequate utility interconnections designed in collaboration with ComEd. The Project does not require water, sewer, or any other public utility facilities to operate. The Project will also build all roads and entrances necessary to access its facilities. The Project will be designed to include all roads and road entrances necessary to provide adequate ingress and egress to its facilities. Construction traffic will include approximately 25 work trucks per day. Considering the low number of work trucks visiting the Project site over the construction phase, traffic patterns in the vicinity of the Project will not be impacted. The Project will have minimal traffic upon completion of construction. Landscape maintenance and maintenance to the Project components are anticipated to occur on an as-needed basis, consistent with the Maintenance and Operations Plan. Existing traffic patterns will not be impacted in the post-construction operations phase. A drain tile survey will be completed prior to construction and foundation design will work around or reroute any identified drain tiles to ensure proper drainage. The Project will also be designed in a manner that will not materially modify existing water drainage patterns around its facilities.

4. *That the special use shall in all other respects conform to the applicable regulations of the district in which it is located, except as such regulations may in each instance be modified by the County Board pursuant to the recommendation of the Zoning Board of Appeals.*

The Project will comply with all local, state, and federal regulations and will be operated in a safe manner at all times. The Project will not negatively impact the environment by creating air, noise, or water pollution; ground contamination; or unsightly views. Numerous studies have shown that solar arrays and their components do not have a negative environmental impact. Please refer to **Appendix S** for a copy of these studies. The Project will not emit any air pollution of any kind and any sound generated by the Project's operations (which occur only during the day) will more than comply with the Illinois Pollution Control Board's limitations on noise. Also, please refer to IDNR's response to the Project's EcoCAT submission in **Appendix F**.

5. *That the special use is consistent with the purpose and objectives of the Land Resource Management Plan and other adopted County or municipal plans and policies.*

Per the Land Resource Management Plan (LRMP) Map, this parcel is slated for future development as part of a Rural Residential Area. Per the LRMP, developments should "provide ample common open space and blend into the surrounding countryside." The LMRP also quotes Planning Policies that are aligned with the proposed Commercial Solar Energy Facility, such as "Preserve open space and protect

natural resources before, during and after development of land uses within the Rural Residential area" and "Limit development within areas not served by central water supply."

Further, the Project supports the County Values listed in the LRMP, such as the desire to see more private investment in businesses and avoiding traffic. The Project would help achieve the Planning Goal of "Support[ing] the public and private use of sustainable energy systems (examples include wind, solar, and geo-thermal).

5.0 VARIANCE REVIEW CRITERIA

5.1 Approval Standards for Variance (Kendall County Zoning Ordinance §13:04.A)

1. *That the particular physical surroundings, shape, or topographical condition of the specific property involved would result in a particular hardship or practical difficulty upon the owner if the strict letter of the regulations were carried out.*

The location of the host parcel creates a hardship for the property owner. A recent update to the Kendall County Zoning Ordinance requires that all commercial solar energy facilities located within one point five (1.5) miles of a municipality shall either annex to the municipality or obtain an annexation agreement with the municipality. However, the host parcel is not contiguous with the neighboring municipality and that village does not have a commercial solar ordinance, thus this municipality has requested that the project is permitted through the county and then pre-annexed into the village following the approval of the SUP. This request for variance is made pursuant to the written request of the village of Plainfield, which is included as **Appendix X**.

2. *That the conditions upon which the requested variation is based would not be applicable, generally, to other property within the same zoning classification.*

This variation is being sought based on the preference and written instruction of the municipality with planning authority over this parcel. This variation would not be applicable to other agricultural parcels in many situations: for applicants seeking an SUP for projects other than a commercial solar energy facility; for parcels that are not within 1.5 miles of a municipality; or for parcels within the jurisdiction of a municipality with a commercial solar energy facility ordinance, where the municipality completes the SUP process through the municipal government.

3. *That the alleged difficulty or hardship has not been created by any person presently having an interest in the property.*

This hardship has been created by the change in the Kendall County Zoning Ordinance, not by any person presently having an interest in the property.

4. *That the granting of the variation will not materially be detrimental to the public welfare or substantially injurious to other property or improvements in the neighborhood in which the property is located.*

The Project will be beneficial for Kendall County residents. The Project will generate clean, renewable electricity while producing no air, noise, or water pollution, ground contamination or unsightly views. The landscape buffer and existing vegetation around the site will be provided and preserved to screen the Project from the view of neighbors and roads. TPE proposes to use pollinator-friendly ground cover underneath the Project and native plantings around the perimeter. These include clover and grass species that promote the establishment and long-term health of bee populations. Please refer

to the Landscape Plan provided in **Appendix J** for more details. The replacement of row crops with a pollinator seed mix will be a net positive for stormwater. Per the Minnesota Rural Water Association, solar installations with native pollinator-friendly ground cover achieve positive impacts similar to soil conservation projects, which reduce soil erosion, reduce soil quality degradation, and improve water quality. This report is included in **Appendix S**. The Project will be designed to account for all existing features, environmental features, and the county's Ordinance. Please refer to Appendix I for the Site Plan. The Project's Operations and Maintenance Plan (see **Appendix N**) also demonstrates how it will manage vegetation and weed control to prevent any unwanted vegetation from encroaching upon neighboring properties. In addition, the Project will promote the general welfare of Kendall County by supplying new jobs, new tax revenue and will be a source of generation of sustainable, clean, pollution-free renewable electricity.

5. *That the proposed variation will not impair an adequate supply of light and air to adjacent property, or substantially increase the congestion in the public streets or increase the danger of fire, or endanger the public safety or substantially diminish or impair property values within the neighborhood*.

The Project will not interfere with the use and enjoyment of nearby properties. The surrounding properties are zoned primarily AG-1 and will not be prevented from continuing any existing use or from pursuing future uses. Solar projects like this one are good neighbors: the Project's operations would be quiet and create a harmonious environment, utilizing pollinator friendly seeding, native plants, and vegetative screening. The landscape buffer will reduce any visual impact on neighbors who live nearby. Moreover, the Project will not be detrimental to the value of other properties or improvements in the vicinity. As indicated by the property value impact study, Appendix T, the existence of the Project will have no negative impact on neighboring property values, and therefore will not substantially diminish or impair property values in the vicinity of the Project. The CohnReznick property value impact study indicates that solar facilities located in similar areas, with similar land uses, do not cause any negative impacts to adjacent real estate, based on a review of academic studies, CohnReznick's own paired sales data, and interviews with County Assessors and other Market Participants. The study further details how solar facilities are generally harmonious with surrounding uses. The Project will be designed to include all roads and road entrances necessary to provide adequate ingress and egress to its facilities. Construction traffic will include approximately 25 work trucks per day. Considering the low number of work trucks visiting the Project site over the construction phase, traffic patterns in the vicinity of the Project will not be impacted. The Project will have minimal traffic upon completion of construction. Landscape maintenance and maintenance to the Project components are anticipated to occur on an as-needed basis, consistent with the Maintenance and Operations Plan. Existing traffic patterns will not be impacted in the post-construction operations phase. Additionally, **Appendix S** contains a report showing that "concern over solar fire hazards should be limited because only a small portion of materials in the panels are flammable, and those components cannot self-support a significant fire."

Special Use Area Description
TPE IL KE240, LLC
Dated April 23, 2024

Being an area of land located in part of the west half of the southwest quarter of Section 26, Township 37 North, Range 8 East of the Third Principal Meridian, Kendall County, Illinois, said area of land being a portion of a tract of land that was conveyed to Frankie J. Santoro in document number 201900017724 in the Office of Kendall County Illinois Recorder, said area of land being described as follows:

BEGINNING a found 1-inch iron pipe on the north line of the west half of the southwest quarter of said Section 26 and being the northwesterly corner of the above referenced tract of land, thence along said north line, North 89°00'55" East a distance of 85.94 feet to a point

Thence leaving said north line of the west half of the southwest quarter of Section 26 and through the above referenced tract of land the following five (5) courses and distances:

1. South 00°26'29" East a distance of 181.15 feet to a point;
2. South 00°01'06" East a distance of 755.48 feet to a point;
3. South 88°40'22" West a distance of 250.43 feet to a point;
4. South 02°00'10" East a distance of 178.18 feet to a point;
5. North 90°00'00" East a distance of 1,270.34 feet to a point on the east line of the west half of the southwest quarter of said Section 26;

Thence along said east line of the west half of the southwest quarter of Section 26, South 01°22'41" East a distance of 1,505.69 feet to a point on the south line of the southwest quarter of said Section 26;

Thence along said south line of the southwest quarter of Section 26, South 88°59'45" West a distance of 1,339.81 feet to a found mag nail at the southwest corner of said Section 26;

Thence along the west line of the southwest quarter of said Section 26, North 01°18'20" West a distance of 1,772.18 feet to a point, said course passing through a found 1-inch iron pipe on line 16.34 feet from corner;

Thence leaving said west line of the southwest quarter and along the westerly side of the above referenced tract of land the following two (2) courses and distances:

1. North 88°48'44" East a distance of 249.96 feet to a found 1-inch iron pipe;
2. North 01°18'36" West a distance of 871.08 feet to the **POINT OF BEGINNING**;, said course passing through a found 1-inch iron rod on line 31.35 feet from corner;

Containing an area of 2,131,657 square feet or 48.936 acres more or less.

WARRANTY DEED

Statutory (Illinois)

201900017724
DEBBIE GILLETTE
RECORDER - KENDALL COUNTY, IL
RECORDED: 11/22/2019 09:57 AM
WD: 43.00 RHSPS FEE: 10.00
STATE TAX: 940.00
COUNTY TAX: 470.00
PAGES: 4

THE GRANTOR,
DALE L.KONICEK, LLC, an
Illinois Limited Liability Company
of Yorkville,
in the County of Kendall
and State of Illinois

for and in consideration of Ten and 00/100 Dollars in hand paid, **CONVEY AND WARRANT TO:**

Frankie J. Santoro - Grantee

whose address is: [redacted]

all interest in the following described Real Estate situated in the County of Kendall in the State of Illinois, to wit:

SEE ATTACHED LEGAL DESCRIPTION

1354

SUBJECT TO: Existing easements, covenants, and restrictions of record, and 2019 and subsequent years real estate taxes.

[redacted] hereby releasing and waiving all rights under and by virtue of the Homestead Exemption Laws of the State of Illinois.

Tax Parcel Number: 03-26-300-006

Address of Real Estate: 73 acres vacant farmland, Oswego Township, Kendall County, Illinois

Dated this 13th day of November, 2019.

DALE L.KONICEK, LLC, an
Illinois Limited Liability Company

[redacted] manager
DALE L. KONICEK, Manager

Unofficial

Warranty Deed - Statutory

STATE OF ILLINOIS)
) SS.
COUNTY OF Kendall)

I, the undersigned, a Notary Public in and for said County, in the State aforesaid, CERTIFY THAT Dale L. Konicek personally known to me to be the same person _ whose name is subscribed to the foregoing instrument, appeared before me this day in person, and acknowledged that he signed, sealed and delivered this instrument as his free and voluntary act, for the uses and purposes therein set forth, including the release and waiver of the right of homestead.

Given under my hand and notarial seal this 13th day of August, 2019.

[redacted]
Notary Public

"OFFICIAL SEAL"
DANIEL J KRAMER
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 4/2/2020

SEND SUBSEQUENT TAX BILLS TO:
Frankie J. Santoro Grantee
[redacted]

MAIL TO

AFTER RECORDING RETURN TO:
NEAR NORTH TITLE GROUP
222 NORTH LA SALLE STREET
SUITE 100 LOBBY LEVEL
CHICAGO, ILLINOIS 60601

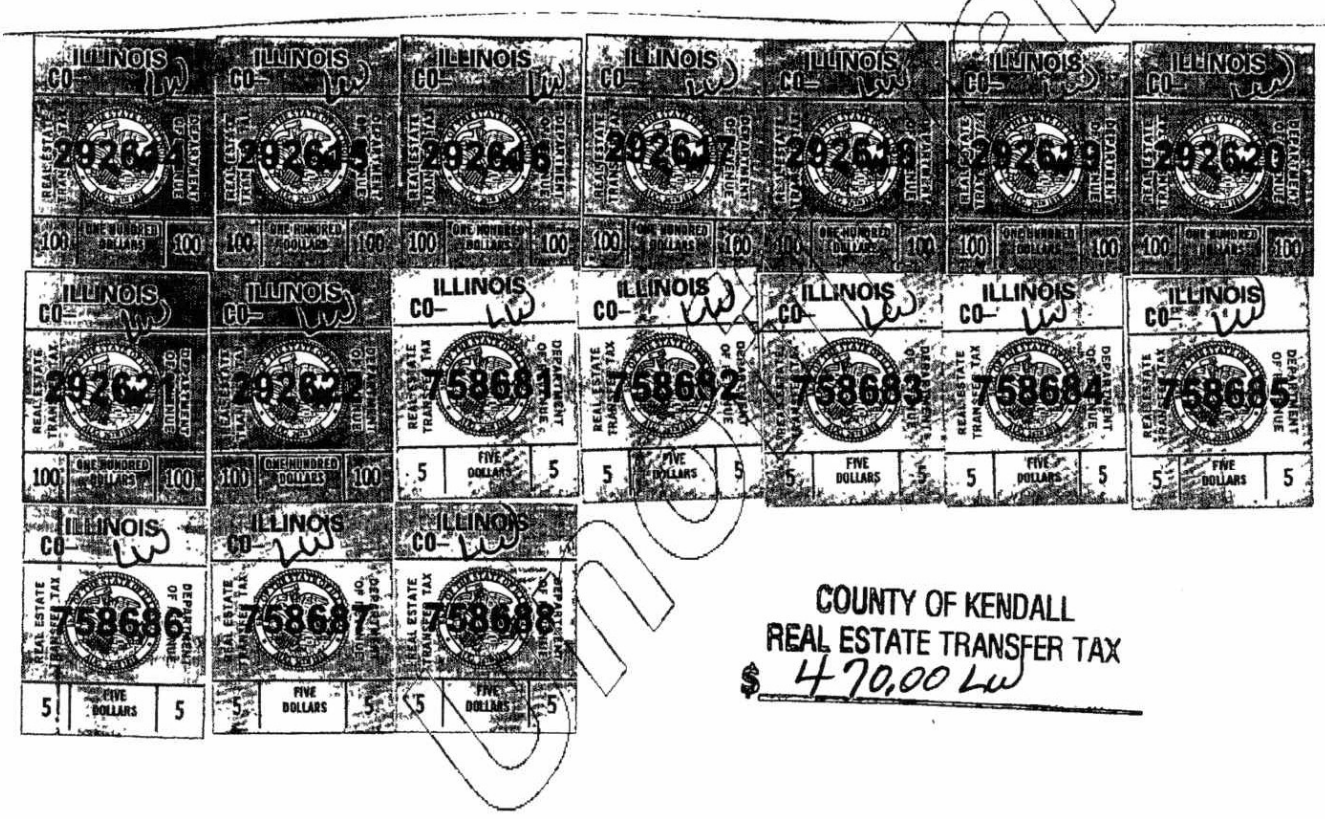
MAIL TO

PREPARED BY
Law Offices of Daniel J. Kramer
1107A S. Bridge Street
Yorkville, Illinois 60560
(630) 553-9500

Unofficial

THAT PART OF THE SOUTHWEST 1/4 OF SECTION 26, TOWNSHIP 37 NORTH, RANGE 8 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SOUTHWEST 1/4; THENCE EASTERLY ALONG THE NORTH LINE OF SAID SOUTHWEST 1/4, 250.0 FEET; THENCE SOUTHERLY, PARALLEL WITH THE WEST LINE OF SAID SOUTHWEST 1/4, 871.21 FEET FOR THE POINT OF BEGINNING; THENCE NORTHERLY ALONG SAID PARALLEL LINE, 871.21 FEET TO SAID NORTH LINE; THENCE EASTERLY, ALONG SAID NORTH LINE, 400.0 FEET; THENCE SOUTHERLY, AT RIGHT ANGLES TO SAID NORTH LINE, 392.04 FEET; THENCE EASTERLY, PARALLEL WITH SAID NORTH LINE, 350.0 FEET; THENCE NORTHERLY, AT RIGHT ANGLES TO THE LAST DESCRIBED COURSE, 392.04 FEET TO SAID NORTH LINE, THENCE EASTERLY ALONG SAID NORTH LINE, 336.67 FEET TO THE NORTHEAST CORNER OF THE WEST HALF OF SAID SOUTHWEST 1/4; THENCE SOUTHERLY ALONG THE EAST LINE OF THE WEST HALF OF SAID SOUTHWEST 1/4, 2643.46 FEET TO THE SOUTHEAST CORNER OF THE WEST HALF OF SAID SOUTHWEST 1/4; THENCE WESTERLY ALONG THE SOUTH LINE OF SAID SOUTHWEST 1/4, 1339.89 FEET TO THE SOUTHWEST CORNER OF SAID SOUTHWEST 1/4; THENCE NORTHERLY ALONG THE WEST LINE OF SAID SOUTHWEST 1/4, 1772.18 FEET TO A LINE DRAWN WESTERLY, PARALLEL WITH SAID NORTH LIME, FROM THE POINT OF BEGINNING; THENCE EASTERLY ALONG SAID PARALLEL LINE, 250.0 FEET TO THE POINT OF BEGINNING, IN OSWEGO TOWNSHIP, KENDALL COUNTY, ILLINOIS.



COUNTY OF KENDALL
REAL ESTATE TRANSFER TAX
$ 470.00 LW

PLAT ACT AFFIDAVIT
(FILE WITH THE RECORDER OF DEEDS OF KENDALL COUNTY)

STATE OF ILLINOIS)
)ss.
COUNTY OF KENDALL)

DOCUMENT #

DANIEL J. KRAMER, being duly sworn on oath, states that he resides at 1107A S. Bridge Street, Yorkville, IL 60560. That the attached deed represents:

1. The subject property is unsubdivided property.
2. A distinct separate parcel qualifying for a Kendall County building permit prior to August 10, 1971.
3. The division of subdivision of the land is into parcels or tracts of five acres or more in size which does not involve any new streets or easements of access.
4. The division is of lots or blocks of less than one acre in any recorded subdivision which does not involve any new streets or easements of access.
5. The sale of exchange of parcels of land is between owners of adjoining and contiguous land.
6. The conveyance is of parcels of land or interests therein for use as right of way for railroads or other public utility facilities, which does not involve any new streets or easement of access.
7. The conveyance is of land owned by a railroad or other public utility which does not involve any new streets or easements of access.
8. The conveyance is of land for highway or other public purposes or grants of conveyances relating to the dedication of land for public use or instruments relating to the vacation of land impressed with a public use.
9. The conveyance is made to correct descriptions in prior conveyances.
10. The sale or exchange is of parcels or tracts of land following the division into no more than two parts of a particular parcel or tract of land existing on July 17, 1959, and not involving any new streets or easements of access.
11. The sale is of a single lot of less than five acres from a larger tract, evidenced by a survey made by a registered surveyor which single lot is the first sale from said larger tract as determined by the dimensions and configurations thereof on October 1, 1973, and which sale does not violate any local requirements applicable to the subdivision of land.

CIRCLE NUMBER ABOVE WHICH IS APPLICABLE TO ATTACHED DEED.

Affiant further states that he makes this affidavit for the purpose of inducing the Recorder of Deeds of Kendall County, Illinois, to accept the attached deed for recording.

[redacted]
DANIEL J. KRAMER, Attorney at Law

SUBSCRIBED AND SWORN to before me

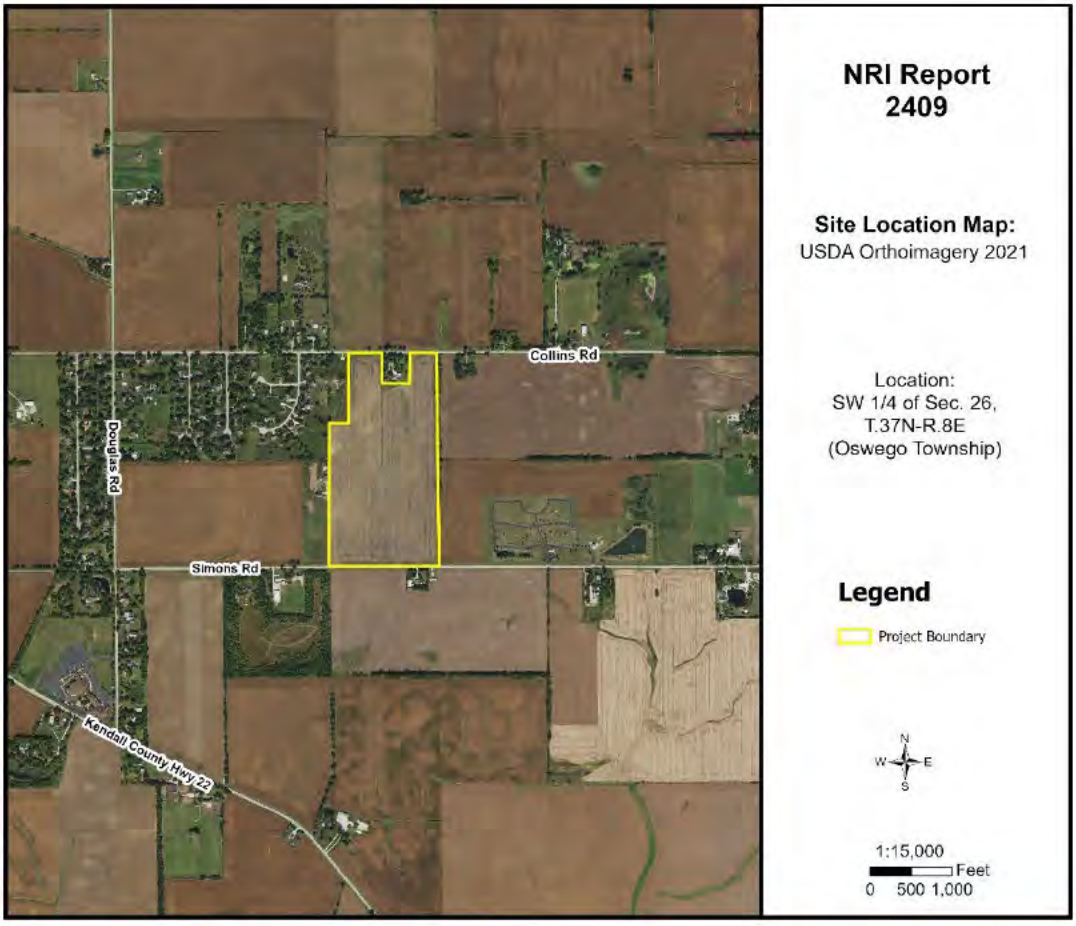
this 13th day of November, 2019.

[redacted]
Notary Public

"OFFICIAL SEAL"
COLLEEN HANSON
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 11/18/2022

Unofficial

NATURAL RESOURCE INFORMATION (NRI) REPORT: #2409



Mar. 2024

Petitioner: TPE IL KE240, LLC

Contact: Amy Henry (Kimley-Horn)

Prepared By:

Kendall County Soil & Water Conservation District

7775A Route 47
Yorkville, Illinois 60560
Phone: (630) 553-5821 x3
www.kendallswcd.org

KENDALL COUNTY SOIL AND WATER CONSERVATION DISTRICT
NATURAL RESOURCE INFORMATION (NRI) REPORT

Natural Resource Information Report Number	2409
Date District Board Reviews Application	March 2024
Applicant's Name	TPE IL KE240, LLC
Size of Parcel	(+/-) 73.20 acres
Current Zoning & Use	A-1 Agricultural; Cropland
Proposed Zoning & Use	A-1 Agricultural Special Use; Solar Facility
Parcel Index Number(s)	03-26-300-006
Contact Person	Amy Henry (Kimley-Horn)

Copies of this report or notification of the proposed land-use change was provided to:	**Yes**	**No**
The Applicant	X	
The Applicant's Legal Representation		X
The Local/Township Planning Commission	X	
The Village/City/**County** Planning and Zoning Department or Appropriate Agency	X	
The Kendall County Soil and Water Conservation District Files	X	

Report Prepared By: *Alyse Olson* Position: *Resource Conservationist*

PURPOSE AND INTENT

The purpose of this report is to provide officials of the local governing body and other decision-makers with natural resource information. This information may be useful when undertaking land use decisions concerning variations, amendments or relief of local zoning ordinances, proposed subdivision of vacant or agricultural lands and the subsequent development of these lands. This report is a requirement under Section 22.02a of the Illinois Soil and Water Conservation Districts Act.

The intent of this report is to present the most current natural resource information available in a readily understandable manner. It contains a description of the present site conditions, the present resources, and the potential impacts that the proposed change may have on the site and its resources. The natural resource information was gathered from standardized data, on-site investigations and information furnished by the petitioner. This report must be read in its entirety so that the relationship between the natural resource factors and the proposed land use change can be fully understood.

Due to the limitations of scale encountered with the various resource maps, the property boundaries depicted in the various exhibits in this report provide a generalized representation of the property location and may not precisely reflect the legal description of the PIQ (Parcel in Question).

This report, when used properly, will provide the basis for proper land use change decisions and development while protecting the natural resource base of the county. It should not be used in place of detailed environmental and/or engineering studies that are warranted under most circumstances, but in conjunction with those studies.

The conclusions of this report in no way indicate that a certain land use is not possible, but it should alert the reader to possible problems that may occur if the capabilities of the land are ignored. Any questions on the technical data supplied in this report or if anyone feels that they would like to see more additional specific information to make the report more effective, please contact:

Kendall County Soil and Water Conservation District
7775A Route 47, Yorkville, IL 60560
Phone: (630) 553-5821 ext. 3
E-mail: Alyse.Olson@il.nacdnet.net

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EXECUTIVE SUMMARY

Natural Resource Information Report Number	#2409
Petitioner	TPE IL KE240, LLC
Contact Person	Amy Henry (Kimley-Horn)
County or Municipality the Petition is Filed With	Kendall County
Location of Parcel	Southwest ¼ of Section 26, Township 37 North, Range 8 East (Oswego Township) of the 3rd Principal Meridian
Project or Subdivision Name	TPE IL KE240, LLC
Existing Zoning & Land Use	A-1 Agricultural; Cropland
Proposed Zoning & Land Use	A-1 Agricultural Special Use; Solar Facility
Proposed Water Source	Not applicable
Proposed Type of Sewage Disposal System	Not applicable
Proposed Type of Storm Water Management	Not indicated
Size of Site	(+/-) 73.20 acres
Land Evaluation Site Assessment (LESA) Score	227 (Land Evaluation: 91; Site Assessment: 136)

NATURAL RESOURCE CONSIDERATIONS

SOIL INFORMATION

Based on information from the United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) 2008 Kendall County Soil Survey, this project area contains the soil types shown in Figure 1 and Table 1. Please note this does not replace the need for or results of onsite soil testing. If completed, please refer to onsite soil test results for planning/engineering purposes.

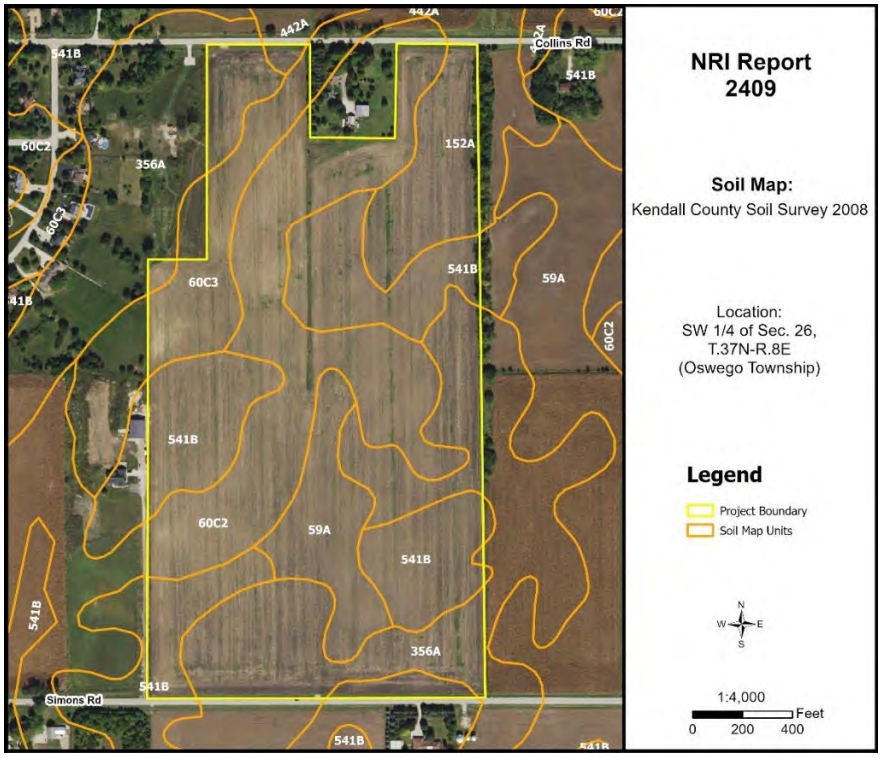


Figure 1: Soil Map

Table 1: Soils Information

Soil Type	Soil Name	Drainage Class	Hydrologic Group	Hydric Designation	Farmland Designation	Acres	% Area
59A	Lisbon silt loam, 0-2% slopes	Somewhat Poorly Drained	C/D	Non-Hydric w/ Hydric Inclusions	Prime Farmland	7.0	9.6%
60C2	La Rose silt loam, 5-10% slopes, eroded	Moderately Well Drained	C	Non-Hydric	Statewide Importance	18.7	25.6%
60C3	La Rose clay loam, 5-10% slopes, eroded	Moderately Well Drained	C	Non-Hydric	Statewide Importance	5.6	7.7%
152A	Drummer silty clay loam, 0-2% slopes	Poorly Drained	B/D	Hydric	Prime Farmland if Drained	6.4	8.7%
356A	Elpaso silty clay loam, 0-2% slopes	Poorly Drained	B/D	Hydric	Prime Farmland if Drained	16.5	22.6%
442A	Mundelein silt loam, 0-2% slopes	Somewhat Poorly Drained	B/D	Non-Hydric w/ Hydric Inclusions	Prime Farmland	0.3	0.4%
541B	Graymont silt loam, 2-5% slopes	Moderately Well Drained	C	Non-Hydric w/ Hydric Inclusions	Prime Farmland	18.5	25.4%

Hydrologic Soil Groups – Soils have been classified into four (A, B, C, D) hydrologic groups based on runoff characteristics due to rainfall. If a soil is assigned to a dual hydrologic group (A/D, B/D or C/D), the first letter is for drained areas and the second letter is for undrained areas.

- **Hydrologic group A:** Soils have a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.
- **Hydrologic group B:** Soils have a moderate infiltration rate when thoroughly wet, consist chiefly of moderately deep to deep, moderately well drained to well drained soils that have a moderately fine to moderately coarse texture. These soils have a moderate rate of water transmission.
- **Hydrologic group C:** Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.
- **Hydrologic group D:** Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Hydric Soils – A hydric soil is one that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile that supports the growth or regeneration of hydrophytic vegetation. Soils with hydric inclusions have map units dominantly made up of non-hydric soils that may have inclusions of hydric soils in the lower positions on the landscape. Of the soils found onsite, two are classified as hydric soil (152A Drummer silty clay loam and 356A Elpaso silty clay loam), two are classified as non-hydric soil (60C2 La Rose silt loam and 60C3 La Rose clay loam), and three are classified as non-hydric soil with hydric inclusions likely (59A Lisbon silt loam, 442A Mundelein silt loam, and 541B Graymont silt loam).

Prime Farmland – Prime farmland is land that has the best combination of physical and chemical characteristics for agricultural production. Prime farmland soils are an important resource to Kendall County and some of the most productive soils in the United States occur locally. Of the soils found onsite, three are designated as prime farmland (59A Lisbon silt loam, 442A Mundelein silt loam, and 541B Graymont silt loam), two are designated as prime farmland if drained (152A Drummer silty clay loam and 356A Elpaso silty clay loam), and two are designated as farmland of statewide importance (60C2 La Rose silt loam and 60C3 La Rose clay loam).

Soil Limitations – The USDA-NRCS Web Soil Survey rates the limitations of soils for dwellings, small commercial buildings, solar arrays, shallow excavations, lawns/landscaping, local roads and streets, etc. Soils have different properties which influence the development of building sites. The USDA-NRCS classifies soils as Not Limited, Somewhat Limited, and Very Limited. Soils that are Not Limited indicates that the soil has properties that are favorable for the specified use. They will perform well and will have low maintenance. Soils that are Somewhat Limited are moderately favorable, and their limitations can be overcome through special planning, design, or installation. Soils that are Very Limited have features that are unfavorable for the specified use, and their limitations cannot easily be overcome.

Table 2: Soil Limitations

Soil Type	Solar Arrays, Soil-Penetrating Anchor Systems	Solar Arrays, Ballast Anchor Systems	Shallow Excavations	Lawns/ Landscaping
59A	Very Limited	Very Limited	Very Limited	Somewhat Limited
60C2	Somewhat Limited	Somewhat Limited	Very Limited	Somewhat Limited
60C3	Somewhat Limited	Somewhat Limited	Very Limited	Somewhat Limited
152A	Very Limited	Very Limited	Very Limited	Very Limited
356A	Very Limited	Very Limited	Very Limited	Very Limited
442A	Very Limited	Very Limited	Very Limited	Somewhat Limited
541B	Very Limited	Very Limited	Somewhat Limited	Somewhat Limited

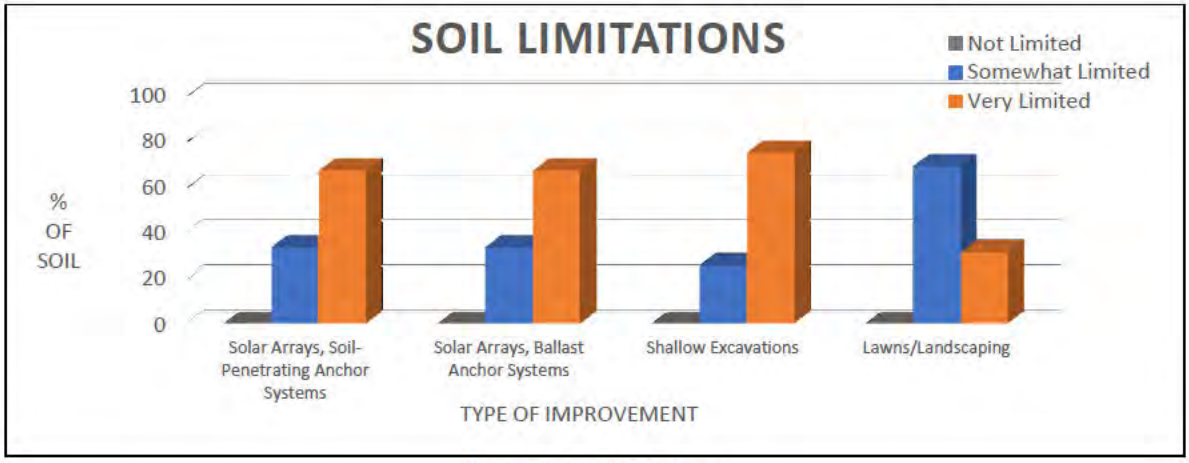


Figure 2: Soil Limitations

KENDALL COUNTY LAND EVALUATION AND SITE ASSESSMENT (LESA)

Decision-makers in Kendall County use the Land Evaluation and Site Assessment (LESA) system to determine the suitability of a land use change and/or a zoning request as it relates to agricultural land. The LESA system was developed by the United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) and takes into consideration local conditions such as physical characteristics of the land, compatibility of surrounding land-uses, and urban growth factors. The LESA system is a two-step procedure that includes:

- **Land Evaluation (LE)**: The soils of a given area are rated and placed in groups ranging from the best to worst suited for a stated agriculture use, cropland, or forestland. The best group is assigned a value of 100 and all other groups are assigned lower values. The Land Evaluation is based on data from the Kendall County Soil Survey. The Kendall County Soil and Water Conservation District is responsible for this portion of the LESA system.
    - The Land Evaluation score for this site is **91**, indicating that the soils are **well suited** for agricultural uses.
- **Site Assessment (SA)**: The site is numerically evaluated according to important factors that contribute to the quality of the site. Each factor selected is assigned values in accordance with the local needs and objectives. The Site Assessment value is based on a 200-point scale and accounts for 2/3 of the total score. The Kendall County LESA Committee is responsible for this portion of

the LESA system.

- The Site Assessment score for this site is **136**.

The **LESA Score for this site is 227 out of a possible 300, which indicates a high level of protection** for the proposed project site. Selecting the project site with the lowest total points will generally protect the best farmland located in the most viable areas and maintain and promote the agricultural industry in Kendall County.

WETLANDS

The U.S. Fish & Wildlife Service's National Wetlands Inventory map does not indicate the presence of wetland(s)/waters on the proposed project site. To determine if a wetland is present, a wetland delineation specialist, who is recognized by the U.S. Army Corps of Engineers, should determine the exact boundaries and value of the wetlands.

FLOODPLAIN

The Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) for Kendall County, Community Panel No. 17093C0070G (effective date February 4, 2009) was reviewed to determine the presence of floodplain and floodway areas within the project site. According to the map, the site does not likely contain areas of regulated floodplain or floodway.

SEDIMENT AND EROSION CONTROL

Development on this site should include an erosion and sediment control plan in accordance with local, state, and federal regulations. Soil erosion on construction sites is a resource concern as suspended sediment from areas undergoing development is a primary nonpoint source of water pollution. Please consult the *Illinois Urban Manual* (https://illinoisurbanmanual.org/) for appropriate best management practices.

STORMWATER POLLUTION

A National Pollutant Discharge Elimination System (NPDES) permit (Permit No. ILR10) from the Illinois Environmental Protection Agency (IEPA) is required for stormwater discharges from construction sites that will disturb 1 or more acres of land. Conditions of the NPDES ILR10 permit require the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) to reduce stormwater pollutants on the construction site before they can cause environmental issues.

ECOLOGICAL CONSIDERATIONS

Developers of solar project sites are encouraged to plant native groundcover. Native shrubs, grasses, and wildflowers offer benefits such as improved erosion control, pesticide avoidance, stormwater infiltration, wildlife habitat, and reduced overall maintenance. Naturalized areas, once established, are more drought tolerant, require little to no fertilization, and only need to be mowed once or twice a year. Native fruiting and flowering plants also provide a food source and habitat for native pollinators which offer the ecological service of pollinating our agricultural crops.

The District recognizes two potential sources of water pollution from solar farms including cracked panels and oil leaks or spills from transformers. Cracked panels can leach toxic materials if many broken panels are exposed to precipitation over a long period of time. To prevent this issue, solar farm operators should

regularly inspect for cracked panels. Cracked or broken panels must be immediately stored under protective cover and should be periodically transported offsite for recycling or proper offsite storage.

Electrical transformers are used to increase output voltage from solar farms to the electrical grid. These transformers contain oil, which can leak or spill resulting in environmental damage. To reduce environmental damage, biodegradable oil can be used in the transformers. Larger transformers typically use mineral-based oil unless biodegradable oil is specifically requested. Leaks and spills of biodegradable oil must still be prevented, but the risk for groundwater contamination would be reduced and clean-up efforts simplified in the event of a release. Secondary containment systems such as trays, membranes, or vaults can also be used in the event of a leak or spill. Containment systems must be designed to manage stormwater so adequate containment volume is maintained. This would be the responsibility of the solar developer.

LAND USE FINDINGS:

The Kendall County Soil and Water Conservation District (SWCD) Board has reviewed the proposed site plans for TPE IL KE240, LLC. The petitioner is requesting a Special Use Permit on one parcel (Parcel Index Number 03-26-300-006) to construct a 34-acre solar development within Oswego Township of Kendall County, IL located in Section 26, Township 37 North, and Range 8 East of the 3rd Principal Meridian. Based on the information provided by the petitioner and a review of natural resource related data available to the Kendall County SWCD, the SWCD Board presents the following information.

The Kendall County SWCD has always had the opinion that prime farmland soils should be preserved whenever feasible due to their highly productive qualities for growing agriculturally important grain and fiber crops in our community. Of the soils found onsite, 66.7% are designated as prime farmland or prime farmland if drained. A land evaluation (LE), which is a part of the Land Evaluation and Site Assessment (LESA), was conducted on this parcel. The soils on this parcel scored a 91 out of a possible 100 points indicating that the soils are well suited for agricultural uses. The total LESA score for this site is 227 out of a possible 300, which indicates a high level of protection for the proposed project site. Selecting the project site with the lowest total points will generally protect the best farmland located in the most viable areas and maintain and promote the agricultural industry in Kendall County.

Soils found on the project site are rated for specific uses and can have potential limitations for development. Soil types with severe limitations do not preclude the ability to develop the site for the proposed use, but it is important to note that the limitation may require soil reclamation, special design/engineering, or maintenance to obtain suitable soil conditions to support development with significant limitations. This report indicates that for soils located on the parcel, 74.6% are considered very limited for shallow excavations, 66.7% are very limited for solar arrays (soil-penetrating & ballast anchor systems), and 31.3% are very limited for lawns/landscaping. The remaining soils are considered somewhat limited for these types of developments/uses. This information is based on the soil in an undisturbed state.

This site is located within the Lower Fox River watershed and the Morgan Creek sub watershed. This development should include a soil erosion and sediment control plan to be implemented during construction. It is critical to have vegetative cover during and after construction to protect the soil from erosion. Sediment may become a primary non-point source of pollution; eroded soils during the construction phase can create unsafe conditions on roadways, degrade water quality and destroy aquatic ecosystems lower in the watershed.

The Kendall County SWCD strongly recommends the use of native ground cover, specifically plant varieties beneficial to pollinator species, be used to vegetate the site. Native vegetation benefits soil health, creates habitat, provides resiliency to drought and prolonged wet conditions, and reduces maintenance needs after successful establishment.

For intense use, it is recommended that a drainage tile survey be completed on the parcel to locate the subsurface drainage tile and should be taken into consideration during the land use planning process. Drainage tile expedites drainage and facilitates farming. It is imperative that these drainage tiles remain undisturbed. Impaired tile may affect a few acres or hundreds of acres of drainage.

The information that is included in this Natural Resources Information Report is to assure that the Land Developers take into full consideration the limitations of that land that they wish to develop. Guidelines and recommendations are also a part of this report and should be considered in the planning process. The Natural Resource Information Report is required by the Illinois Soil and Water Conservation District Act (Ill. Complied Statues, Ch. 70, Par 405/22.02a).

[redacted]

SWCD Board Representative

3-11-24

Date

PARCEL LOCATION

Southwestern ¼ of Section 26, Township 37 North, Range 8 East (Oswego Township). This parcel contains approximately 73.20 acres, of which 34 acres will be utilized for the solar facility. The site is located south of Collins Rd, west of Gilmore Rd, north of Simons Rd, and east of Douglas Rd in Oswego.

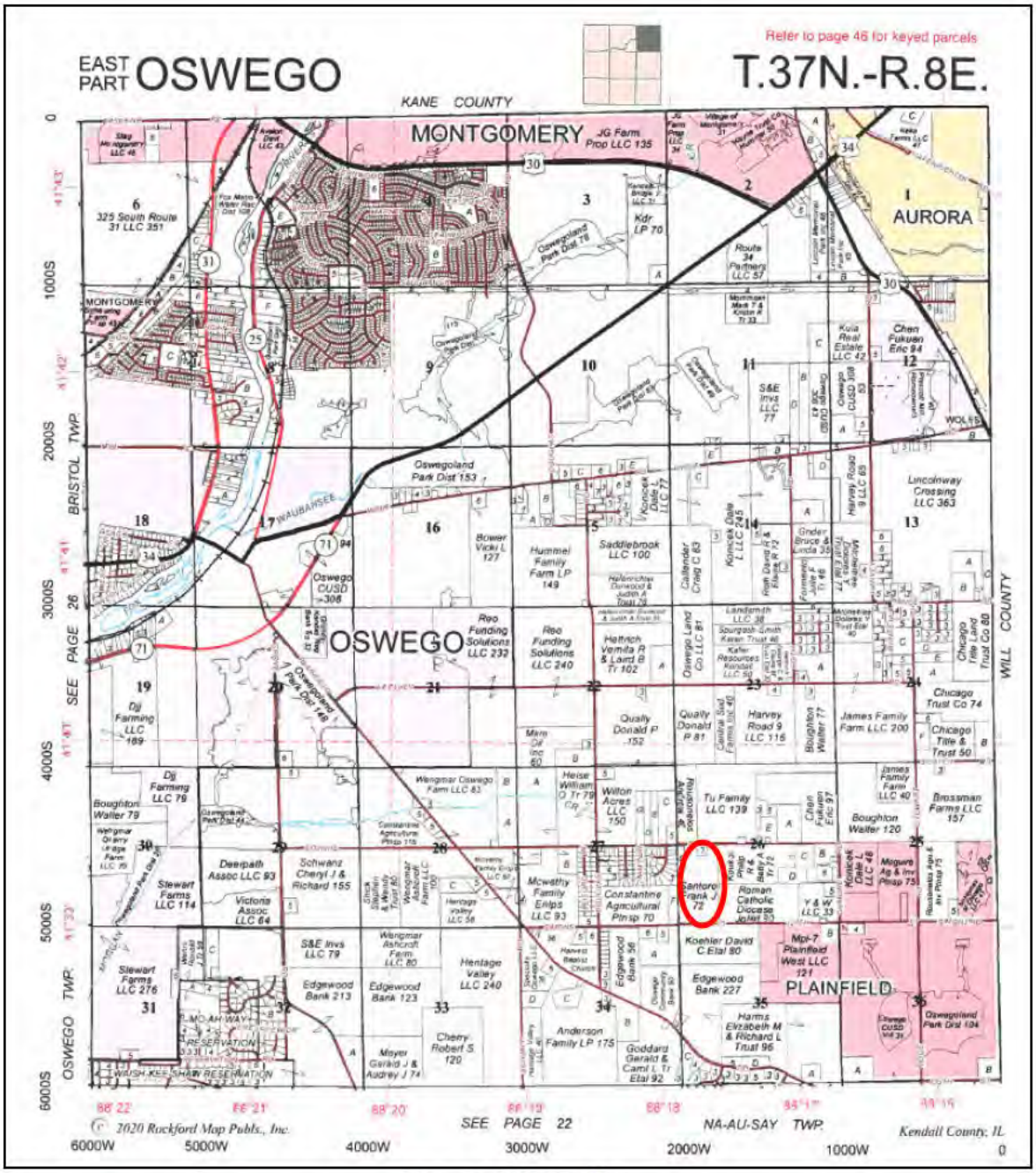


Figure 3: 2021 Plat Map

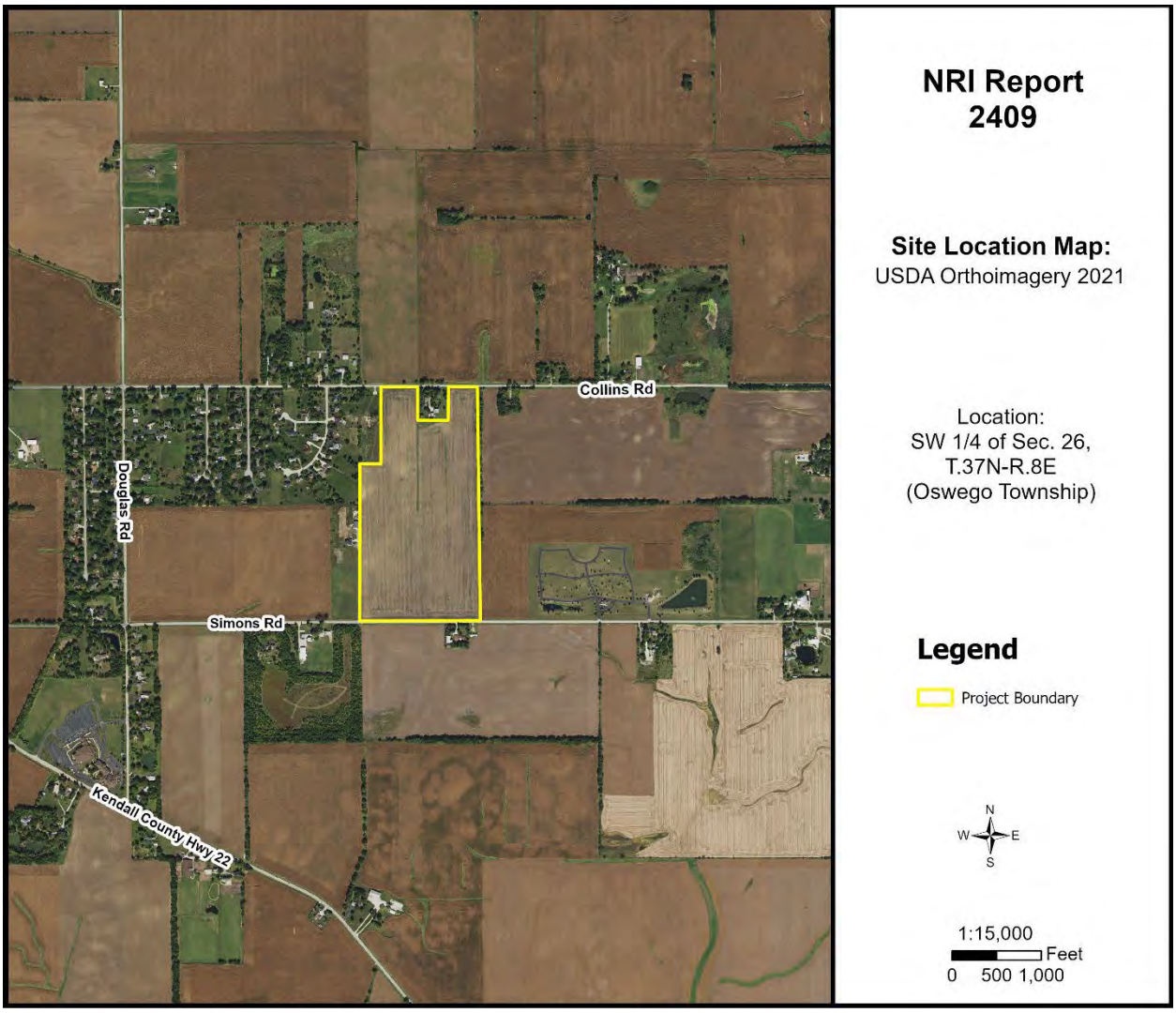


Figure 4: 2021 Aerial Map with NRI Project Boundary

ARCHAEOLOGIC/CULTURAL RESOURCES INFORMATION

Simply stated, cultural resources are all the past activities and accomplishments of people. They include the following: buildings; objects made or used by people; locations; and less tangible resources, such as stories, dance forms, and holiday traditions.

The Soil and Water Conservation District most often encounters cultural resources as historical properties. These may be prehistoric or historical sites, buildings, structures, features, or objects. The most common type of historical property that the Soil and Water Conservation District may encounter is non-structural archaeological sites. These sites often extend below the soil surface and must be protected against disruption by development or other earth moving activity if possible. Cultural resources are *non-renewable* because there is no way to "grow" a site to replace a disrupted site.

Landowners with historical properties on their land have ownership of that historical property. However, the State of Illinois owns all the following: human remains, grave markers, burial mounds, and artifacts associated with graves and human remains.

Non-grave artifacts from archaeological sites and historical buildings are the property of the landowner. The landowner may choose to disturb a historical property but may not receive federal or state assistance to do so. If an earth moving activity disturbs human remains, the landowner must contact the county coroner within 48 hours.

The Illinois State Historic Preservation Office has not been notified of the proposed land use change by the Kendall County SWCD. There may be historic features in the area. The applicant may need to contact them according to current Illinois law.

ECOLOGICALLY SENSITIVE AREAS

WHAT IS BIOLOGICAL DIVERSITY AND WHY SHOULD IT BE CONSERVED?[1]

Biological diversity, or biodiversity, is the range of life on our planet. A more thorough definition is presented by botanist Peter H. Raven: "At the simplest level, biodiversity is the sum total of all the plants, animals, fungi and microorganisms in the world, or in a particular area; all of their individual variation; and all of the interactions between them. It is the set of living organisms that make up the fabric of the planet Earth and allow it to function as it does, by capturing energy from the sun and using it to drive all of life's processes; by forming communities of organisms that have, through the several billion years of life's history on Earth, altered the nature of the atmosphere, the soil and the water of our Planet; and by making possible the sustainability of our planet through their life activities now" (Raven 1994).

It is not known how many species occur on our planet. Presently, about 1.4 million species have been named. It has been estimated that there are perhaps 9 million more that have not been identified. What is known is that they are vanishing at an unprecedented rate. Reliable estimates show extinction occurring at a rate several orders of magnitude above "background" in some ecological systems (Wilson 1992, Hoose 1981).

The reasons for protecting biological diversity are complex, but they fall into four major categories. First, loss of diversity generally weakens entire natural systems. Healthy ecosystems tend to have many natural checks and balances. Every species plays a role in maintaining this system. When simplified by the loss of diversity, the system becomes more susceptible to natural and artificial perturbations. The chances of a system-wide collapse increase. In parts of the midwestern United States, for example, it was only the remnant areas of natural prairies that kept soil intact during the dust bowl years of the 1930s (Roush 1982).

Simplified ecosystems are almost always expensive to maintain. For example, when synthetic chemicals are relied upon to control pests, the target species are not the only ones affected. Their predators are almost always killed or driven away, exasperating the pest problem. In the meantime, people are unintentionally breeding pesticide-resistant pests. A process has begun where people become perpetual guardians of the affected area, which requires the expenditure of financial resources and human ingenuity to keep the system going.

A second reason for protecting biological diversity is that it represents one of our greatest untapped resources. Great benefits can be reaped from a single species. About 20 species provide 90% of the world's food. Of these 20, just three, wheat, maize, and rice-supply over one half of that food. American wheat farmers need new varieties every five to 15 years to compete with pests and diseases. Wild strains of wheat are critical genetic reservoirs for these new varieties.

Further, every species is a potential source of human medicine. In 1980, a published report identified the market value of prescription drugs from higher plants at over $3 billion. Organic alkaloids, a class of

chemical compounds used in medicines, are found in an estimated 20% of plant species. Yet only 2% of plant species have been screened for these compounds (Hoose 1981).

The third reason for protecting diversity is that humans benefit from natural areas and depend on healthy ecosystems. The natural world supplies our air, our water, our food and supports human economic activity. Further, humans are creatures that evolved in a diverse natural environment between forest and grasslands. People need to be reassured that such places remain. When people speak of "going to the country," they generally mean more than getting out of town. For reasons of their own sanity and wellbeing, they need a holistic, organic experience. Prolonged exposure to urban monotony produces neuroses, for which cultural and natural diversity cure.

Historically, the lack of attention to biological diversity, and the ecological processes it supports, has resulted in economic hardships for segments of the basin's human population.

The final reason for protecting biological diversity is that species and natural systems are intrinsically valuable. The above reasons have focused on the benefits of the natural world to humans. All things possess intrinsic value simply because they exist.

BIOLOGICAL RESOURCES CONCERNING THE SUBJECT PARCEL

As part of the Natural Resources Information Report, staff checks office maps to determine if any nature preserves or ecologically sensitive areas are in the general vicinity of the parcel in question. If there is a nature preserve in the area, then that resource will be identified as part of the report. The SWCD recommends that every effort be made to protect that resource. Such efforts should include, but are not limited to erosion control, sediment control, stormwater management, and groundwater monitoring.

Office maps indicate that ecologically sensitive area(s) are not located on or near the parcel in question (PIQ).

[1]Taken from *The Conservation of Biological Diversity in the Great Lakes Ecosystem: Issues and Opportunities*, prepared by the Nature Conservancy Great Lakes Program 79W. Monroe Street, Suite 1309, Chicago, IL 60603, January 1994.

SOILS INFORMATION

IMPORTANCE OF SOILS INFORMATION

Soils information comes from the Natural Resources Conservation Service Soil Maps and Descriptions for Kendall County. This information is important to all parties involved in determining the suitability of the proposed land use change.

Each soil polygon is given a number, which represents its soil type. The letter found after the soil type number indicates the soils slope class.

Each soil map unit has limitations for a variety of land uses such as septic systems, buildings with basements, and buildings without basements. It is important to remember that soils do not function independently of each other. The behavior of a soil depends upon the physical properties of adjacent soil types, the presence of artificial drainage, soil compaction, and its position in the local landscape.

The limitation categories (not limited, somewhat limited, or very limited) indicate the potential for difficulty in using that soil unit for the proposed activity and, thus, the degree of need for thorough soil borings and engineering studies. A limitation does not necessarily mean that the proposed activity cannot be done on that soil type. It does mean that the reasons for the limitation need to be thoroughly understood and dealt with to complete the proposed activity successfully. Very limited indicates that the proposed activity will be more difficult and costly to do on that soil type than on a soil type with a somewhat limited or not limited rating.

Soil survey interpretations are predictions of soil behavior for specified land uses and specified management practices. They are based on the soil properties that directly influence the specified use of the soil. Soil survey interpretations allow users of soil surveys to plan reasonable alternatives for the use and management of soils.

Soil interpretations do not eliminate the need for on-site study and testing of specific sites for the design and construction for specific uses. They can be used as a guide for planning more detailed investigations and for avoiding undesirable sites for an intended use. The scale of the maps and the range of error limit the use of the soil delineation.

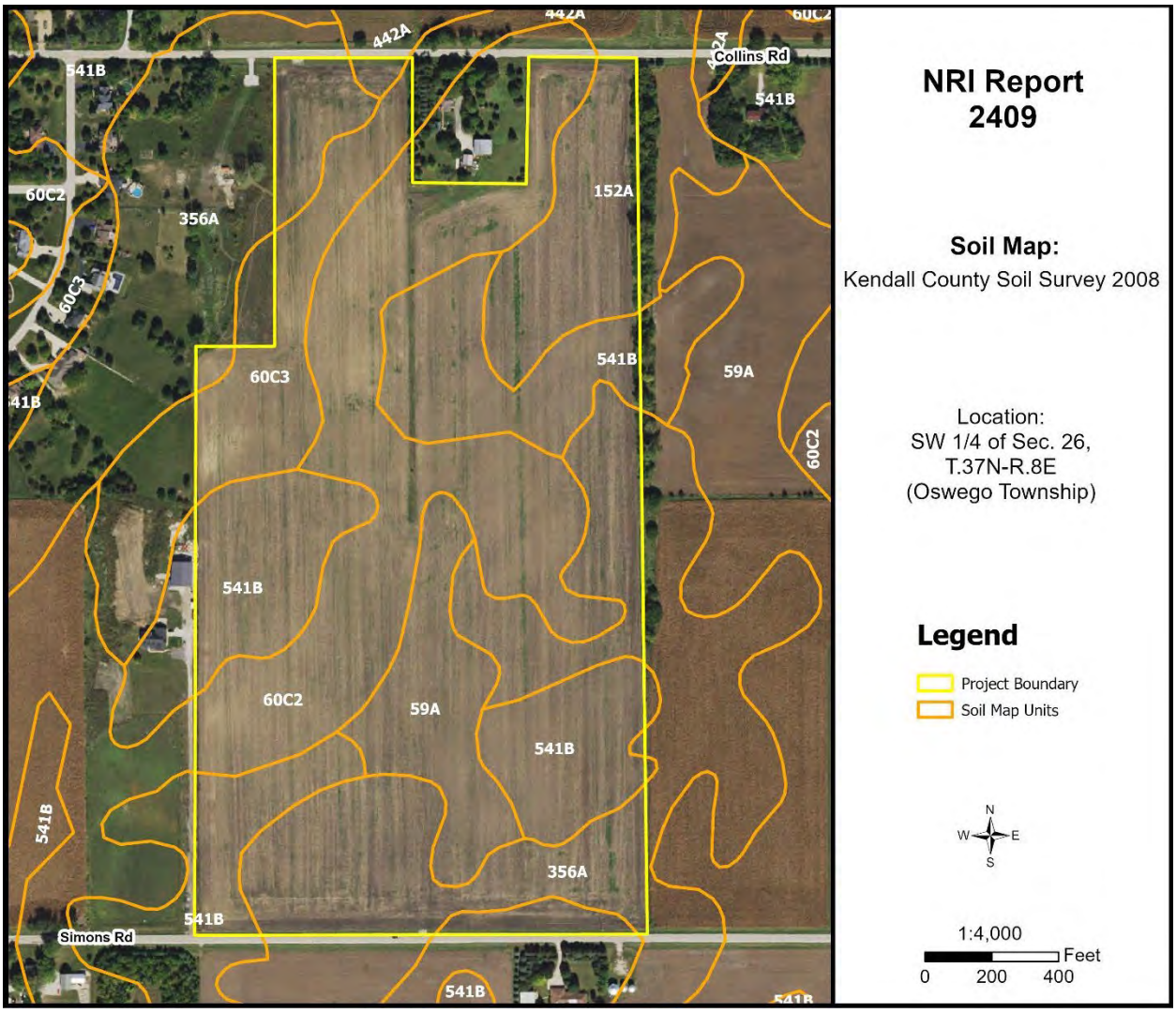


Figure 5: Soil Map

Table 3: Soil Map Unit Descriptions

Soil Type	Soil Name	Acres	Percent
59A	Lisbon silt loam, 0-2% slopes	7.0	9.6%
60C2	La Rose silt loam, 5-10% slopes, eroded	18.7	25.6%
60C3	La Rose clay loam, 5-10% slopes, eroded	5.6	7.7%
152A	Drummer silty clay loam, 0-2% slopes	6.4	8.7%
356A	Elpaso silty clay loam, 0-2% slopes	16.5	22.6%
442A	Mundelein silt loam, 0-2% slopes	0.3	0.4%
541B	Graymont silt loam, 2-5% slopes	18.5	25.4%

Source: National Cooperative Soil Survey – USDA-NRCS

SOILS INTERPRETATIONS EXPLANATION

GENERAL – NONAGRICULTURAL

These interpretative ratings help engineers, planners, and others to understand how soil properties influence behavior when used for nonagricultural uses such as building site development or construction materials. This report gives ratings for proposed uses in terms of limitations and restrictive features. The tables list only the most restrictive features.

Other features may need treatment to overcome soil limitations for a specific purpose. Ratings come from the soil's "natural" state, that is, no unusual modification occurs other than that which is considered normal practice for the rated use. Even though soils may have limitations, an engineer may alter soil features or adjust building plans for a structure to compensate for most degrees of limitations. Most of these practices, however, are costly. The final decision in selecting a site for a particular use generally involves weighing the costs for site preparation and maintenance. Soil properties influence development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Soil limitation ratings of not limited, somewhat limited, and very limited are given for the types of proposed improvements that are listed or inferred by the petitioner as entered on the report application and/or zoning petition. The most common types of building limitation that this report gives limitations ratings for is septic systems. It is understood that engineering practices can overcome most limitations for buildings with and without basements, and small commercial buildings. Limitation ratings for these types of buildings are not commonly provided. Organic soils, when present on the parcel, are referenced in the hydric soils section of the report. This type of soil is considered unsuitable for all types of construction.

LIMIATIONS RATINGS

- **Not Limited:** This soil has favorable properties for the use. The degree of limitation is minor. The people involved can expect good performance and low maintenance.
- **Somewhat Limited**: This soil has moderately favorable properties for the use. Special planning, design, or maintenance can overcome this degree of limitation. During some part of the year, the expected performance is less desirable than for soils rated slight.
- **Very Limited**: This soil has one or more properties that are unfavorable for the rated use. These may include the following: steep slopes, bedrock near the surface, flooding, high shrink-swell potential, a seasonal high water table, or low strength. This degree of limitation generally requires major soil reclamation, special design, or intensive maintenance, which in most situations is difficult and costly.

BUILDING LIMITATIONS

BUILDING ON POORLY SUITED OR UNSUITABLE SOILS

Building on poorly suited or unsuitable soils can present problems to future property owners such as cracked foundations, wet basements, lowered structural integrity and high maintenance costs associated with these problems. The staff of the Kendall County SWCD strongly urges scrutiny by the plat reviewers when granting parcels with these soils exclusively.

Solar Arrays, Soil-Penetrating Anchor Systems – Ground-based solar arrays are sets of photovoltaic panels that are not situated on a building or pole. These installations consist of a racking system that holds the panel in the desired orientation and the foundation structures that hold the racking system to the ground. Two basic methods are used to hold the systems to the ground, based on site conditions and cost. One method employs driven piles, screw augers, or concrete piers that penetrate the soil to provide a stable foundation.

Solar Arrays, Ballast Anchor Systems Ground-based solar arrays are sets of photovoltaic panels that are not situated on a building or pole. These installations consist of a racking system that holds the panel in the desired orientation and the foundation structures that hold the racking system to the ground. Ballast anchor systems can be used in some places where soil-penetrating systems cannot, such as in shallow or stony soil. Also, since they do not penetrate the soil, ballast systems can be used where the soil is contaminated, and disturbance is to be avoided. The soil in the area must have sufficient strength to be able to support the vehicles that haul the ballast and the machinery to install it.

Shallow Excavations – Trenches or holes dug to a maximum depth of 5 or 6 feet for utility lines, open ditches, or other purposes. Ratings are based on soil properties that influence the ease of digging and the resistance to sloughing.

Lawns and Landscaping – Require soils on which turf and ornamental trees and shrubs can be established and maintained (irrigation is not considered in the ratings). The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established.

Table 4: Building Limitations

Soil Type	Solar Arrays, Soil-Penetrating Anchor Systems	Solar Arrays, Ballast Anchor Systems	Shallow Excavations	Lawns & Landscaping	Acres	%
59A	**Very Limited:** Frost action Low strength Steel corrosion Depth to saturated zone Shrink-swell Ponding	**Very Limited:** Frost action Low strength Depth to saturated zone Hillslope position Ponding Slope shape across	**Very Limited:** Depth to saturated zone Dense layer Dusty Unstable excavation walls Ponding	**Somewhat Limited:** Depth to saturated zone Dusty	7.0	9.6%
60C2	**Somewhat Limited**: Steel corrosion Frost action Low strength Hillslope position Depth to saturated zone	**Somewhat Limited**: Frost action Low strength Hillslope position Depth to saturated zone Slope direction & gradient	**Very Limited**: Depth to saturated zone Dusty Unstable excavation walls	**Somewhat Limited**: Depth to saturated zone Dusty	18.7	25.6%
60C3	**Somewhat Limited**: Steel corrosion Frost action Low strength Hillslope position Depth to saturated zone	**Somewhat Limited**: Frost action Low strength Hillslope position Depth to saturated zone Slope direction & gradient	**Very Limited**: Depth to saturated zone Dusty Unstable excavation walls	**Somewhat Limited:** Depth to saturated zone Dusty	5.6	7.7%
152A	**Very Limited:** Ponding Depth to saturated zone Frost action Low strength Steel corrosion Shrink-swell	**Very Limited:** Ponding Depth to saturated zone Frost action Low strength Slope shape across	**Very Limited:** Ponding Depth to saturated zone Dusty Unstable excavation walls Too clayey	**Very Limited:** Ponding Depth to saturated zone Dusty	6.4	8.7%

Soil Type	Solar Arrays, Soil-Penetrating Anchor Systems	Solar Arrays, Ballast Anchor Systems	Shallow Excavations	Lawns & Landscaping	Acres	%
356A	**Very Limited**: Ponding Depth to saturated zone Frost action Low strength Steel corrosion Shrink-swell	**Very Limited**: Ponding Depth to saturated zone Frost action Low strength Slope shape across	**Very Limited**: Ponding Depth to saturated zone Dusty Unstable excavation walls Too clayey	**Very Limited**: Ponding Depth to saturated zone Dusty	16.5	22.6%
442A	**Very Limited:** Frost action Low strength Steel corrosion Depth to saturated zone Hillslope position Ponding	**Very Limited**: Frost action Low strength Depth to saturated zone Hillslope position Ponding	**Very Limited**: Depth to saturated zone Dusty Unstable excavation walls Ponding	**Somewhat Limited:** Depth to saturated zone Dusty Low exchange capacity	0.3	0.4%
541B	**Very Limited:** Frost action Low strength Steel corrosion Shrink-swell Hillslope position Ponding Depth to saturated zone	**Very Limited:** Frost action Low strength Hillslope position Slope shape across Ponding Depth to saturated zone	**Somewhat Limited:** Depth to saturated zone Dusty Unstable excavation walls	**Somewhat Limited:** Dusty	18.5	25.4%
% Very Limited	**66.7%**	**66.7%**	**74.6%**	**31.3%**		

Figure 6A: Map of Building Limitations - Solar Arrays
(Soil-Penetrating & Ballast Anchor Systems)

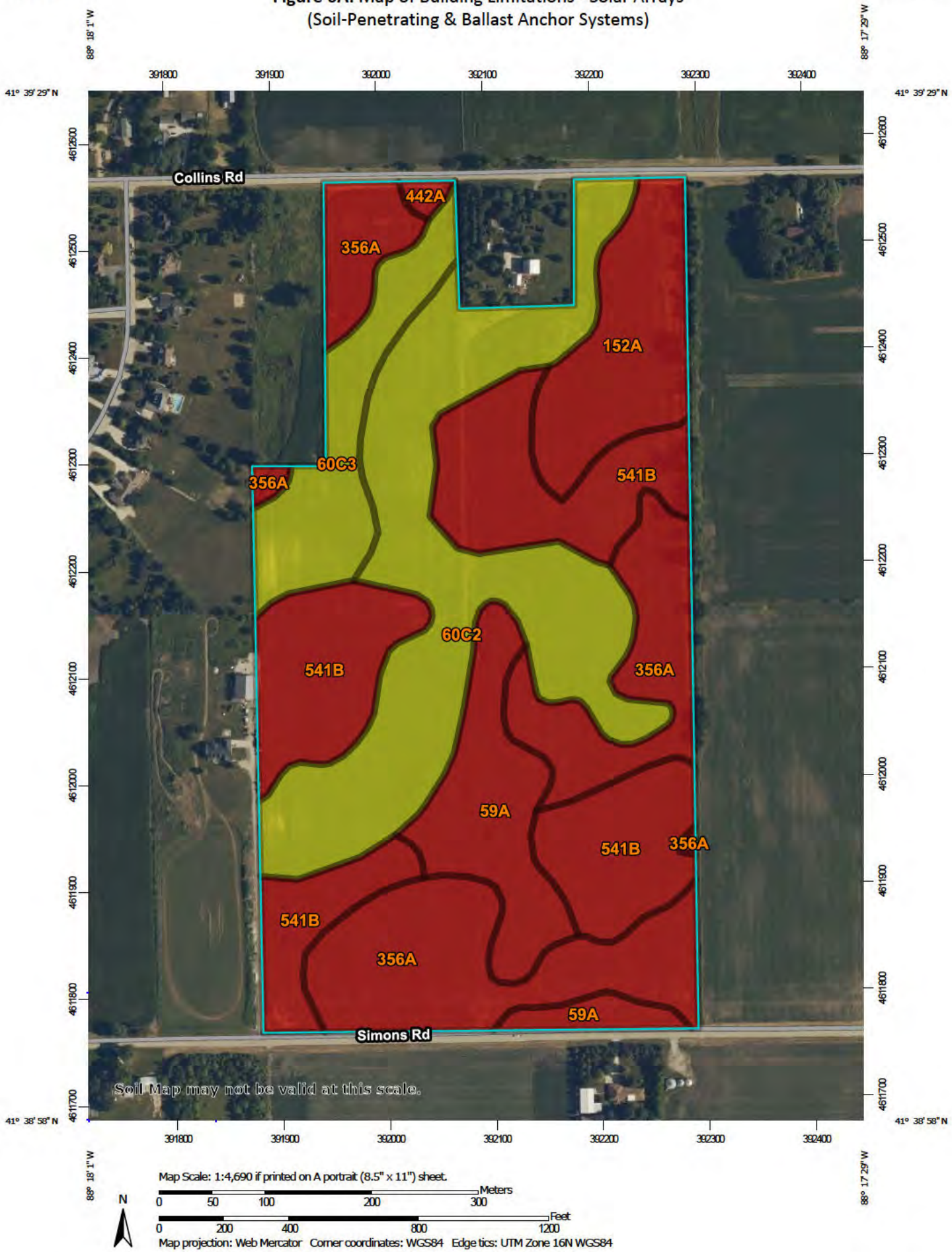


Figure 6B: Map of Building Limitations - Shallow Excavations

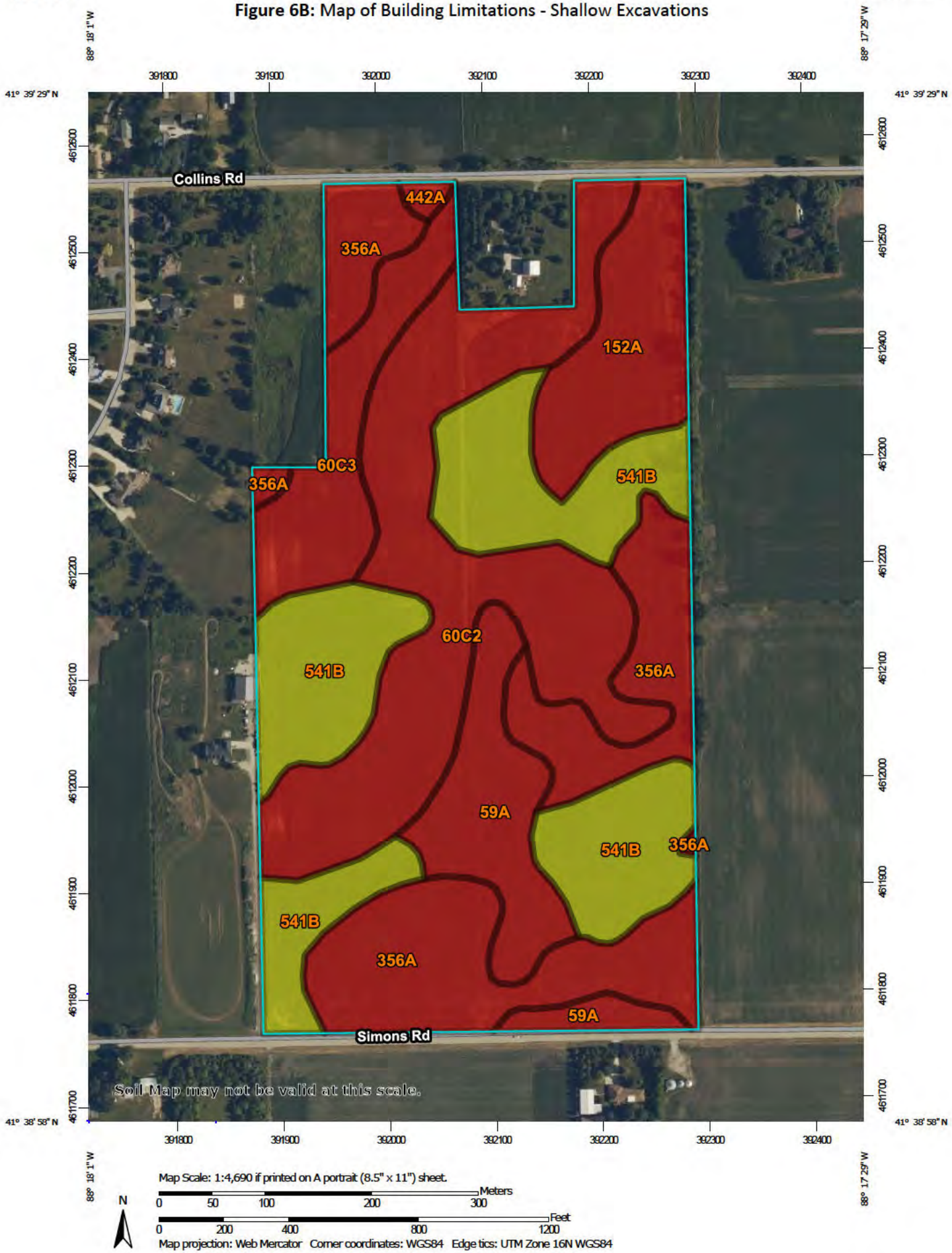


Figure 6C: Map of Building Limitations - Lawns / Landscaping



SOIL WATER FEATURES

Table 5, below, gives estimates of various soil water features that should be taken into consideration when reviewing engineering for a land use project.

HYDROLOGIC SOIL GROUPS (HSGs) – The groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

- **Group A:** Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.
- **Group B:** Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained, or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.
- **Group C:** Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.
- **Group D:** Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Note: If a soil is assigned to a dual hydrologic group (A/D, B/D or C/D) the first letter is for drained areas and the second is for undrained areas.

SURFACE RUNOFF – Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based upon slope, climate and vegetative cover and indicates relative runoff for very specific conditions (it is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal). The classes are negligible, very low, low, medium, high, and very high.

MONTHS – The portion of the year in which a water table, ponding, and/or flooding is most likely to be a concern.

WATER TABLE – Water table refers to a saturated zone in the soil and the data indicates, by month, depth to the top (upper limit) and base (lower limit) of the saturated zone in most years. These estimates are based upon observations of the water table at selected sites and on evidence of a saturated zone (grayish colors or mottles (redoximorphic features)) in the soil. Note: A saturated zone that lasts for less than a month is not considered a water table.

PONDING – Ponding refers to standing water in a closed depression, and the data indicates surface water depth, duration, and frequency of ponding.

- **Duration:** Expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days and *very long* if more than 30 days.
- **Frequency:** Expressed as: *none* meaning ponding is not possible; *rare* means unlikely but possible under unusual weather conditions (chance of ponding is 0-5% in any year); *occasional* means that it occurs, on the average, once or less in 2 years (chance of ponding is 5 to 50% in any year); and *frequent* means that it occurs, on the average, more than once in 2 years (chance of ponding is more than 50% in any year).

FLOODING – The temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

- **Duration:** Expressed as: *extremely brief* if 0.1 hour to 4 hours; *very brief* if 4 hours to 2 days; *brief* if 2 to 7 days; *long* if 7 to 30 days; and *very long* if more than 30 days.
- **Frequency:** Expressed as: *none* means flooding is not probable; *very rare* means that it is very unlikely but possible under extremely unusual weather conditions (chance of flooding is less than 1% in any year); *rare* means that it is unlikely but possible under unusual weather conditions (chance of flooding is 1 to 5% in any year); *occasional* means that it occurs infrequently under normal weather conditions (chance of flooding is 5 to 50% in any year but is less than 50% in all months in any year); and *very frequent* means that it is likely to occur very often under normal weather conditions (chance of flooding is more than 50% in all months of any year).

Note: The information is based on evidence in the soil profile. In addition, consideration is also given to local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Table 5: Water Features

Soil Type	Hydrologic Group	Surface Runoff	Water Table	Ponding	Flooding
59A	C/D	Low	January – May **Upper Limit:** 1.0’-2.0’ **Lower Limit:** 2.0’-4.0’	January – December **Frequency**: None	January – December **Frequency**: None
60C2	C	High	February – April **Upper Limit:** 2.0’-3.5’ **Lower Limit:** 2.2’-4.0’	January – December **Frequency**: None	January – December **Frequency**: None
60C3	C	Medium	February – April **Upper Limit:** 2.0’-3.5’ **Lower Limit:** 2.2’-4.0’	January – December **Frequency**: None	January – December **Frequency**: None
152A	B/D	Negligible	January – May **Upper Limit:** 0.0’-1.0’ **Lower Limit:** 6.0’	January – May **Surface Water Depth**: 0.0’-0.5’ **Duration**: Brief (2-7 days) **Frequency**: Frequent	January – December **Frequency**: None
356A	B/D	Negligible	January – May **Upper Limit:** 0.0’-1.0’ **Lower Limit:** 6.0’	January – May **Surface Water Depth**: 0.0’-0.5’ **Duration**: Brief (2-7 days) **Frequency**: Frequent	January – December **Frequency**: None
442A	B/D	Negligible	January – May **Upper Limit:** 1.0’-2.0’ **Lower Limit:** 6.0’	January – December **Frequency**: None	January – December **Frequency**: None
541B	C	Low	February - April **Upper Limit:** 2.0’-3.5’ **Lower Limit:** 2.2’-4.3’	January – December **Frequency**: None	January – December **Frequency**: None

SOIL EROSION AND SEDIMENT CONTROL

Erosion is the wearing away of the soil by water, wind, and other forces. Soil erosion threatens the Nation's soil productivity and contributes the most pollutants in our waterways. Water causes about two thirds of erosion on agricultural land. Four properties, mainly, determine a soil's erodibility: texture, slope, structure, and organic matter content.

Slope has the most influence on soil erosion potential when the site is under construction. Erosivity and runoff increase as slope grade increases. The runoff then exerts more force on the particles, breaking their bonds more readily and carrying them farther before deposition. The longer water flows along a slope before reaching a major waterway, the greater the potential for erosion.

Soil erosion during and after this proposed construction can be a primary non-point source of water pollution. Eroded soil during the construction phase can create unsafe conditions on roadways, decrease the storage capacity of lakes, clog streams and drainage channels, cause deterioration of aquatic habitats, and increase water treatment costs. Soil erosion also increases the risk of flooding by choking culverts, ditches, and storm sewers and by reducing the capacity of natural and man-made detention facilities.

The general principles of erosion and sedimentation control measures include:

- Reducing/diverting flow from exposed areas, storing flows, or limiting runoff from exposed areas
- Staging construction to keep disturbed areas to a minimum
- Establishing or maintaining temporary or permanent groundcover
- Retaining sediment on site
- Properly installing, inspecting, and maintaining control measures

Erosion control practices are useful controls only if they are properly located, installed, inspected, and maintained. Soil erosion and sedimentation control plans, including maintenance responsibilities, should be clearly communicated to all contractors working on the site.

The SWCD recommends an erosion and sediment control plan for all building sites, especially if there is a wetland or stream nearby. Additionally, a National Pollutant Discharge Elimination System (NPDES) permit (Permit No. ILR10) from the Illinois Environmental Protection Agency (IEPA) is required for stormwater discharges from construction sites that will disturb 1 or more acres of land. Conditions of the NPDES ILR10 permit require the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) to reduce stormwater pollutants on the construction site before they can cause environmental issues.

Table 6: Soil Erosion Potential

Soil Type	Slope	Rating	Acreage	Percent of Project Area
59A	0-2%	Slight	7.0	9.6%
60C2	5-10%	Moderate	18.7	25.6%
60C3	5-10%	Severe	5.6	7.7%
152A	0-2%	Slight	6.4	8.7%
356A	0-2%	Slight	16.5	22.6%
442A	0-2%	Slight	0.3	0.4%
541B	2-5%	Slight	18.5	25.4%

PRIME FARMLAND SOILS

Prime farmland soils are an important resource to Kendall County. Some of the most productive soils in the United States occur locally. Each soil map unit in the United States is assigned a prime or non-prime rating. Prime agricultural land does not need to be in the production of food & fiber.

Section 310 of the NRCS general manual states that urban or built-up land on prime farmland soils is not prime farmland. The percentages of soil map units on the parcel reflect the determination that urban or built-up land on prime farmland soils is not prime farmland.

Table 7: Prime Farmland Soils

Soil Type	Prime Farmland Designation	Acreage	Percent
59A	Prime Farmland	7.0	9.6%
60C2	Farmland of Statewide Importance	18.7	25.6%
60C3	Farmland of Statewide Importance	5.6	7.7%
152A	Prime Farmland if Drained	6.4	8.7%
356A	Prime Farmland if Drained	16.5	22.6%
442A	Prime Farmland	0.3	0.4%
541B	Prime Farmland	18.5	25.4%
% Prime Farmland	**66.7%**		

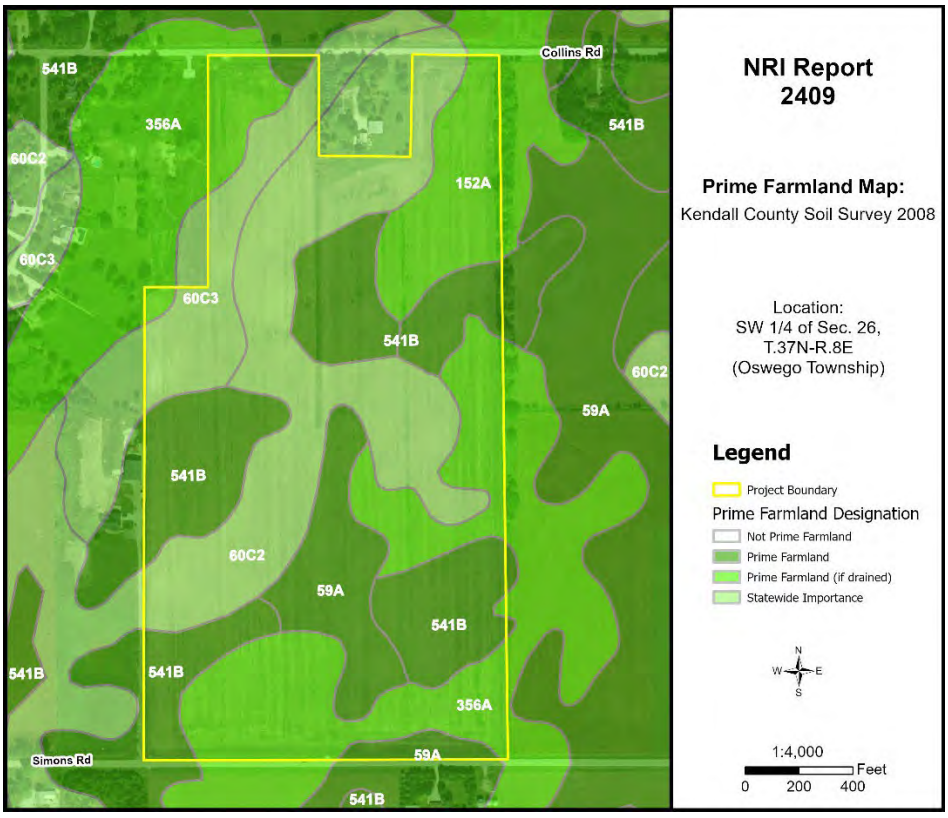


Figure 7: Prime Farmland Soils

LAND EVALUATION AND SITE ASSESSMENT (LESA)

Decision-makers in Kendall County use the Land Evaluation and Site Assessment (LESA) system to determine the suitability of a land use change and/or a zoning request as it relates to agricultural land. The LESA system was developed by the United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) and takes into consideration local conditions such as physical characteristics of the land, compatibility of surrounding land-uses, and urban growth factors. The LESA system is a two-step procedure that includes:

LAND EVALUATION (LE)

The soils of a given area are rated and placed in groups ranging from the best to worst suited for a stated agriculture use, cropland, or forestland. The best group is assigned a value of 100, and all other groups are assigned lower values. The Land Evaluation is based on data from the Kendall County Soil Survey. The LE score is calculated by multiplying the relative value of each soil type by the number of acres of that soil. The sum of the products is then divided by the total number of acres; the answer is the Land Evaluation score on this site. The Kendall County Soil and Water Conservation District is responsible for this portion of the LESA system.

SITE ASSESSMENT (SA)

The site is numerically evaluated according to important factors that contribute to the quality of the site. Each factor selected is assigned values in accordance with the local needs and objectives. The value group is a predetermined value based upon prime farmland designation. The Kendall County LESA Committee is responsible for this portion of the LESA system.

Please Note: A land evaluation (LE) score will be compiled for every project parcel. However, when a parcel is located within municipal planning boundaries, a site assessment (SA) score is not compiled as the scoring factors are not applicable. As a result, only the LE score is available, and a full LESA score is unavailable for the parcel.

Table 8A: Land Evaluation Computation

Soil Type	Value Group	Relative Value	Acres*	Product (Relative Value x Acres)
59A	2	94	7.0	658.0
60C2	5	82	18.7	1,533.4
60C3	6	69	5.6	386.4
152A	1	100	6.4	640.0
356A	1	100	16.5	1,650.0
442A	2	94	0.3	28.2
541B	2	94	18.5	1,739.0
			73.1	**6,635.0**
LE Calculation			(Product of relative value / Total Acres) 6,635.0 / 73.1 = 90.8	
LE Score			**LE = 91**	

*Acreage listed in this chart provides a generalized representation and may not precisely reflect exact acres of each soil type.

The Land Evaluation score for this site is 91, indicating that this site is designated as land that is well suited for agricultural uses considering the Land Evaluation score is above 80.

Table 8B: Site Assessment Computation

A.	**Agricultural Land Uses**	**Points**
	1. Percentage of area in agricultural uses within 1.5 miles of site. (20-10-5-0)	20
	2. Current land use adjacent to site. (30-20-15-10-0)	20
	3. Percentage of site in agricultural production in any of the last 5 years. (20-15-10-5-0)	20
	4. Size of site. (30-15-10-0)	15
B.	**Compatibility / Impact on Uses**	
	1. Distance from city or village limits. (20-10-0)	10
	2. Consistency of proposed use with County Land Resource Management Concept Plan and/or municipal comprehensive land use plan. (20-10-0)	20
	3. Compatibility of agricultural and non-agricultural uses. (15-7-0)	0
C.	**Existence of Infrastructure**	
	1. Availability of public sewage system. (10-8-6-0)	8
	2. Availability of public water system. (10-8-6-0)	8
	3. Transportation systems. (15-7-0)	7
	4. Distance from fire protection service. (10-8-6-2-0)	8
	Site Assessment Score:	**136**

Land Evaluation Value: 91 + **Site Assessment Value:** 136 = **LESA Score: 227**

Table 9: LESA Score Summary

LESA SCORE	LEVEL OF PROTECTION
0-200	Low
201-225	Medium
226-250	High
251-300	Very High

The LESA Score for this site is 227 out of 300, which indicates a high level of protection for the proposed project site. Selecting the project site with the lowest total points will generally protect the best farmland located in the most viable areas and maintain and promote the agricultural industry in Kendall County.

LAND USE PLANS

Many counties, municipalities, villages, and townships have developed land-use plans. These plans are intended to reflect the existing and future land-use needs of a given community. Please contact Kendall County's Planning, Building and Zoning department for information regarding their comprehensive land use plan and map.

DRAINAGE, RUNOFF, AND FLOOD INFORMATION

U.S.G.S Topographic maps give information on elevations, which are important mostly to determine slopes, drainage directions, and watershed information.

Elevations determine the area of impact of floods of record. Slope information determines steepness and erosion potential. Drainage directions determine where water leaves the PIQ, possibly impacting surrounding natural resources.

Watershed information is given for changing land use to a subdivision type of development on parcels greater than 10 acres.

WHAT IS A WATERSHED?
Simply stated, a watershed is the area of land that contributes water to a certain point. The watershed boundary is important because the area of land in the watershed can now be calculated using an irregular shape area calculator such as a dot counter or planimeter.

Using regional storm event information, and site-specific soils and land use information, the peak stormwater flow through the point marked "○" for a specified storm event can be calculated. This value is called a "Q" value (for the given storm event) and is measured in cubic feet per second (CFS).

When construction occurs, the Q value naturally increases because of the increase in impermeable surfaces. This process decreases the ability of soils to accept and temporarily hold water. Therefore, more water runs off and increases the Q value.

Theoretically, if each development, no matter how large or small, maintains their preconstruction Q value after construction by the installation of stormwater management systems, the streams and wetlands and lakes will not suffer damage from excessive urban stormwater.

For this reason, the Kendall County SWCD recommends that the developer for intense uses, such as a subdivision, calculate the preconstruction Q value for the exit point(s). A stormwater management system

should be designed, installed, and maintained to limit the postconstruction Q value to be at or below the preconstruction value.

IMPORTANCE OF FLOOD INFORMATION

A floodplain is defined as land adjoining a watercourse (riverine) or an inland depression (non-riverine) that is subject to periodic inundation by high water. Floodplains are important areas demanding protection since they have water storage and conveyance functions which affect upstream and downstream flows, water quality and quantity, and suitability of the land for human activity. Since floodplains play distinct and vital roles in the hydrologic cycle, development that interferes with their hydrologic and biologic functions should be carefully considered.

Flooding is both dangerous to people and destructive to their properties. The following maps, when combined with wetland and topographic information, can help developers and future homeowners to "sidestep" potential flooding or ponding problems.

Flood Insurance Rate Maps (FIRMs), produced by the Federal Emergency Management Agency (FEMA), define flood elevation adjacent to tributaries and major bodies of water and superimpose that onto a simplified USGS topographic map. The scale of the FIRM maps is generally dependent on the size and density of parcels in that area. This is to correctly determine the parcel location and floodplain location. The FIRM map has three (3) zones. Zone A includes the 100-year flood (1% annual chance flood), Zone B or Zone X (shaded) is the 100 to 500-year flood (between limits of the 1% and the 0.2% annual chance flood), and Zone C or Zone X (unshaded) is outside the floodplain (outside the 0.2% annual chance flood).

The Hydrologic Atlas (H.A.) Series of the Flood of Record Map is also used for the topographic information. This map is different from the FIRM map mainly because it will show isolated or pocketed flooded areas. Kendall County uses both these maps in conjunction with each other for flooded area determinations. The Flood of Record maps show the areas of flood for various years. Both maps stress that the recurrence of flooding is merely statistical. A 100-year flood may occur twice in one year, or twice in one week, for that matter.

It should be noted that greater floods than those shown on the two maps are possible. The flood boundaries indicated provide a historic record only until the map publication date. Additionally, these flood boundaries are a function of the watershed conditions existing when the maps were produced. Cumulative changes in runoff characteristics caused by urbanization can result in an increase in flood height of future flood episodes.

Floodplains play a vital role in reducing the flood damage potential associated with an urbanizing area and, when left in an undisturbed state, also provide valuable wildlife habitat benefits. If it is the petitioner's intent to conduct floodplain filling or modification activities, the petitioner, and the Unit of Government responsible need to consider the potentially adverse effects this type of action could have on adjacent properties. The change or loss of natural floodplain storage often increases the frequency and severity of flooding on adjacent property.

If the available maps indicate the presence of a floodplain on the PIQ, the petitioner should contact the IDNR-OWR and FEMA to delineate a floodplain elevation for the parcel. If a portion of the property is indeed floodplain, applicable state, county, and local regulations will need to be reflected in the site plans.

Another indication of flooding potential can be found in the soils information. Hydric soils indicate the presence of drainage ways, areas subject to ponding, or a naturally occurring high water table. These need to be considered along with the floodplain information when developing the site plan and the stormwater management plan. Development on hydric soils can contribute to the loss of water storage within the soil and the potential for increased flooding in the area.

This parcel contains slopes of 0% to 10% with an elevation range of approximately 698'-740' above sea level. The highest point is in the western portion of the site, and the lowest point is in the northeast corner. According to the FEMA Flood Map (Figure 8), the parcel does not likely contain areas of regulated floodplain or floodway. The parcel is mapped as Zone X, an Area of Minimal Flood Hazard.

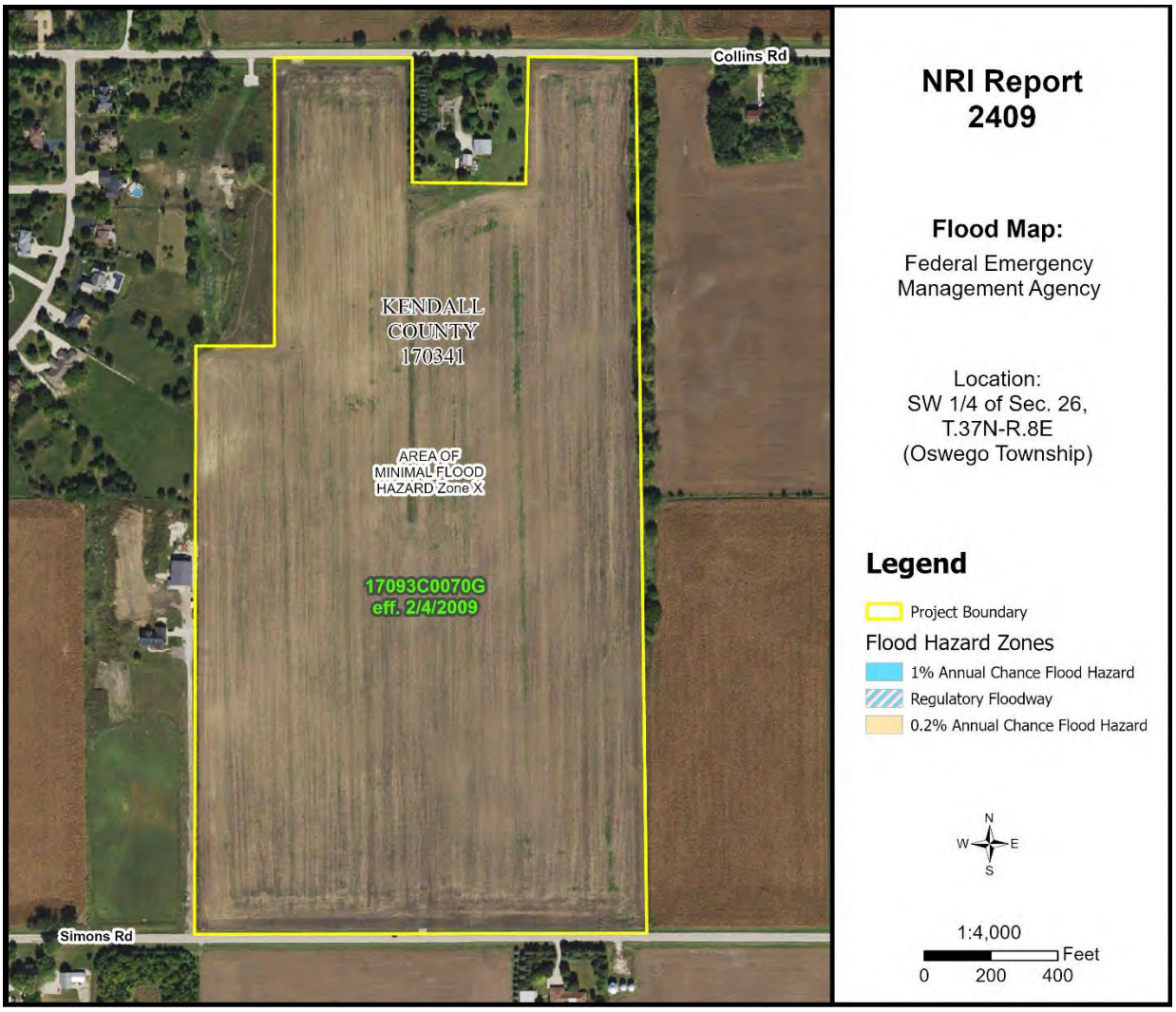


Figure 8: Flood Map

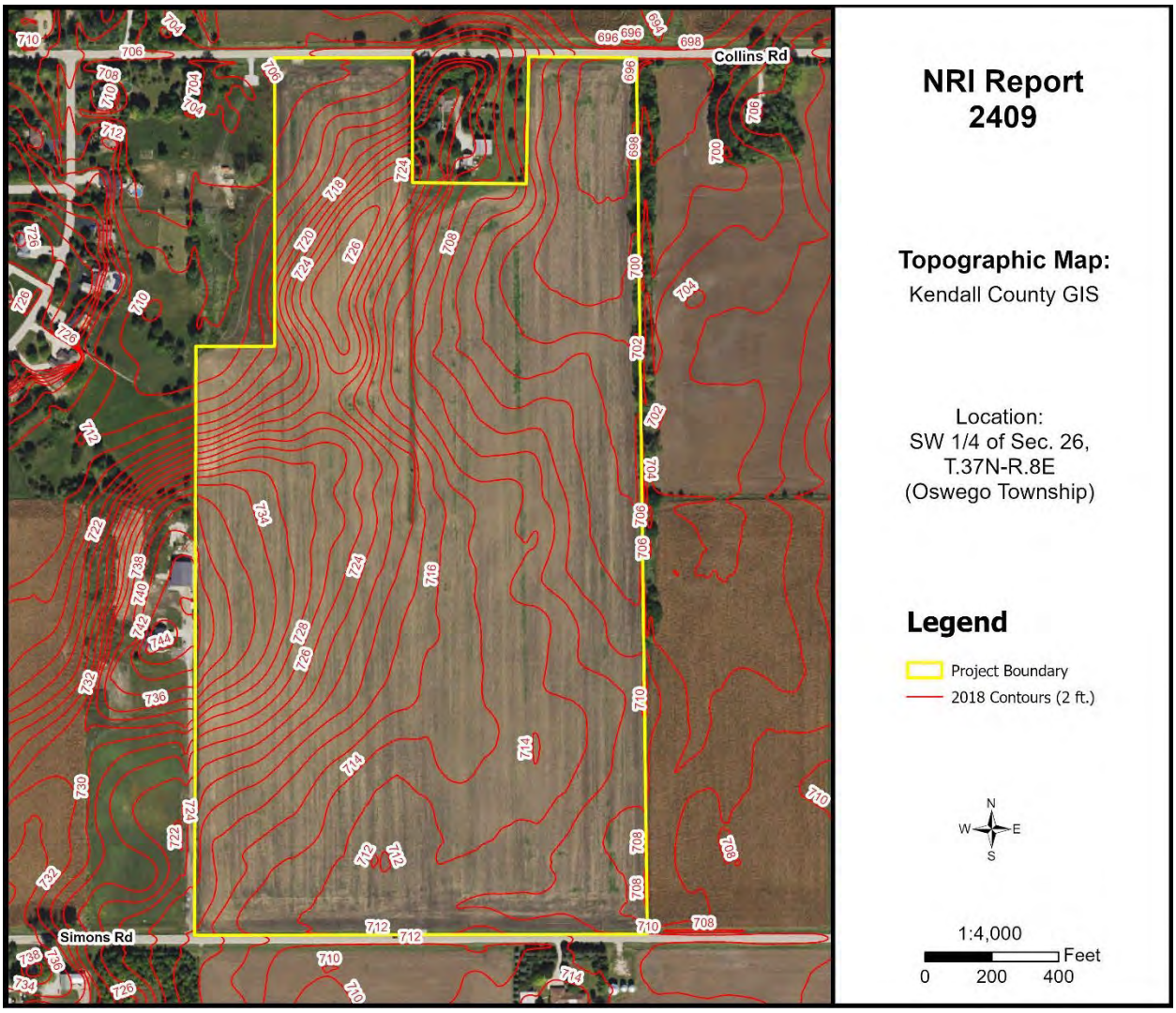


Figure 9: Topographic Map

WATERSHED PLANS

WATERSHED AND SUB WATERSHED INFORMATION

A watershed is the area of land that drains into a specific point including a stream, lake, or other body of water. High points on the Earth's surface, such as hills and ridges define watersheds. When rain falls in the watershed, it flows across the ground towards a stream or lake. Rainwater carries pollutants such as oils, pesticides, and soil.

Everyone lives in a watershed. Their actions can impact natural resources and people living downstream. Residents can minimize this impact by being aware of their environment and the implications of their activities, implementing practices recommended in watershed plans, and educating others about their watershed.

The following are recommendations to developers for protection of this watershed:

- Preserve open space
- Maintain wetlands as part of development
- Use natural water management
- Prevent soil from leaving a construction site
- Protect subsurface drainage
- Use native vegetation
- Retain natural features
- Mix housing styles and types
- Decrease impervious surfaces
- Reduce area disturbed by mass grading
- Shrink lot size and create more open space
- Maintain historical and cultural resources
- Treat water where it falls
- Preserve views
- Establish and link trails

This parcel is located within the Lower Fox River watershed and the Morgan Creek sub watershed (HUC 12 – 071200070110). The Morgan Creek sub watershed comprises 11,469.24 acres of Kendall County.

WETLAND INFORMATION

IMPORTANCE OF WETLAND INFORMATION

Wetlands function in many ways to provide numerous benefits to society. They control flooding by offering a slow release of excess water downstream or through the soil. They cleanse water by filtering out sediment and some pollutants and can function as rechargers of our valuable groundwater. They also are essential breeding, rearing, and feeding grounds for many species of wildlife.

These benefits are particularly valuable in urbanizing areas as development activity typically adversely affects water quality, increases the volume of stormwater runoff, and increases the demand for groundwater. In an area where many individual homes rely on shallow groundwater wells for domestic water supplies, activities that threaten potential groundwater recharge areas are contrary to the public good. The conversion of wetlands, with their sediment trapping and nutrient absorbing vegetation, to biologically barren stormwater detention ponds can cause additional degradation of water quality in downstream or adjacent areas.

It has been estimated that over 95% of the wetlands that were historically present in Illinois have been destroyed while only recently has the true environmental significance of wetlands been fully recognized. America is losing 100,000 acres of wetland a year and has saved 5 million acres total (since 1934). One acre of wetland can filter 7.3 million gallons of water a year. These are reasons why our wetlands are high quality and important.

This section contains the National Wetlands Inventory, which is the most comprehensive inventory to date. The National Wetlands Inventory is reproduced from an aerial photo at a scale of 1” equals 660 feet. The NRCS developed these maps in cooperation with U.S. EPA (Environmental Protection Agency,) and the U.S. Fish and Wildlife Service, using the National Food Security Act Manual, 3rd Edition. The main purpose of these maps is to determine wetland areas on agricultural fields and areas that may be wetlands but are in a non-agriculture setting.

The National Wetlands Inventory in no way gives an exact delineation of the wetlands, but merely an outline, or the determination that there is a wetland within the outline. For the final, most accurate wetland **determination** of a specific wetland, a wetland ***delineation*** must be certified by NRCS staff using the National Food Security Act Manual (on agricultural land.) On urban land, a certified wetland delineator must perform the delineation using the ACOE 1987 Manual. *See the glossary section for the definitions of “delineation” and “determination.”*

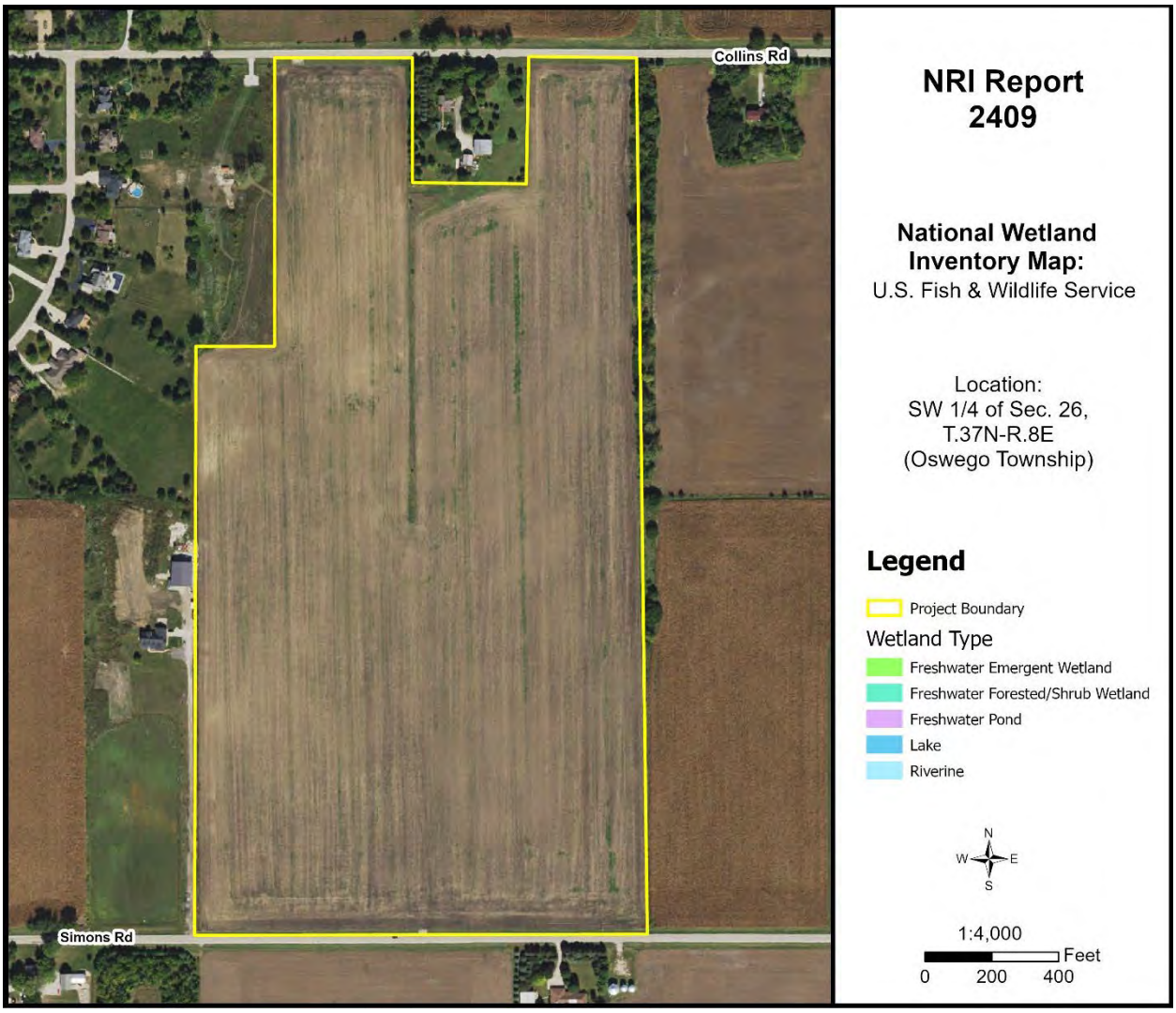


Figure 10: Wetland Map

Office maps indicate that mapped wetlands/waters are not present on the parcel in question (PIQ). To determine the presence of wetlands, a wetland delineation specialist, who is recognized by the U.S. Army Corps of Engineers, should determine the exact boundaries and value of the wetlands.

HYDRIC SOILS

Soils information gives another indication of flooding potential. The soils map on the following page indicates the soil(s) on the parcel that the Natural Resources Conservation Service indicates as hydric. Hydric soils, by definition, have seasonal high water at or near the soil surface and/or have potential flooding or ponding problems. All hydric soils range from poorly suited to unsuitable for building. One group of the hydric soils are the organic soils, which formed from dead organic material. Organic soils are unsuitable for building because of not only the high water table but also their subsidence problems.

It is important to add the possibility of hydric inclusions in a soil type. An inclusion is a soil polygon that is too small to appear on these maps. While relatively insignificant for agricultural use, hydric soil inclusions become more important to more intense uses such as a residential subdivision.

While considering hydric soils and hydric inclusions, it is noteworthy to mention that subsurface agriculture drainage tile occurs in almost all poorly drained and somewhat poorly drained soils. Drainage tile expedites drainage and facilitates farming. It is imperative that these drainage tiles remain undisturbed. A damaged subsurface drainage tile may return original hydrologic conditions to all the areas that drained through the tile (ranging from less than one acre to many square miles.)

For an intense land use, the Kendall County SWCD recommends the following: a topographical survey with 1 foot contour intervals to accurately define the flood area on the parcel, an intensive soil survey to define most accurately the locations of the hydric soils and inclusions, and a drainage tile survey on the area to locate the tiles that must be preserved to maintain subsurface drainage.

Table 10: Hydric Soils

Soil Types	Drainage Class	Hydric Designation	Hydric Inclusions Likely	Hydric Rating %	Acres	% Area
59A	Somewhat Poorly Drained	Non-Hydric	Yes	1-32%	7.0	9.6%
60C2	Moderately Well Drained	Non-Hydric	No	0%	18.7	25.6%
60C3	Moderately Well Drained	Non-Hydric	No	0%	5.6	7.7%
152A	Poorly Drained	Hydric	N/A	100%	6.4	8.7%
356A	Poorly Drained	Hydric	N/A	100%	16.5	22.6%
442A	Somewhat Poorly Drained	Non-Hydric	Yes	1-32%	0.3	0.4%
541B	Moderately Well Drained	Non-Hydric	Yes	1-32%	18.5	25.4%

Figure 11: Hydric Soil Map



WETLAND AND FLOODPLAIN REGULATIONS

PLEASE READ THE FOLLOWING IF YOU ARE PLANNING TO DO ANY WORK NEAR A STREAM (THIS INCLUDES SMALL UNNAMED STREAMS), LAKE, WETLAND OR FLOODWAY.

The laws of the United States and the State of Illinois assign certain agencies specific and different regulatory roles to protect the waters within the State's boundaries. These roles, when considered together, include protection of navigation channels and harbors, protection against floodway encroachments, maintenance and enhancement of water quality, protection of fish and wildlife habitat and recreational resources, and, in general, the protection of total public interest. Unregulated use of the waters within the State of Illinois could permanently destroy or alter the character of these valuable resources and adversely impact the public. Therefore, please contact the proper regulatory authorities when planning any work associated with Illinois waters so that proper consideration and approval can be obtained.

WHO MUST APPLY?

Anyone proposing to dredge, fill, rip rap, or otherwise alter the banks or beds of, or construct, operate, or maintain any dock, pier, wharf, sluice, dam, piling, wall, fence, utility, floodplain or floodway subject to State or Federal regulatory jurisdiction should apply for agency approvals.

REGULATORY AGENCIES

- **Wetland or U.S. Waters**: U.S. Army Corps of Engineers, Chicago District, 231 South LaSalle Street, Suite 1500, Chicago, IL 60604. Phone: (312) 846-5530
- **Floodplains**: Illinois Department of Natural Resources - Office of Water Resources, One Natural Resources Way, Springfield, IL 62702-1270. Phone: (217) 782-6302
- **Water Quality/Erosion Control**: Illinois Environmental Protection Agency, 1021 North Grand Avenue East, P.O. Box 19276, Springfield, IL 62794-9276. Phone: (217) 782-3397

COORDINATION

We recommend early coordination with the regulatory agencies BEFORE finalizing work plans. This allows the agencies to recommend measures to mitigate or compensate for adverse impacts. Also, the agency can make possible environmental enhancement provisions early in the project planning stages. This could reduce time required to process necessary approvals.

CAUTION: Contact with the United States Army Corps of Engineers is strongly advised before commencement of any work in or near a Waters of the United States. This could save considerable time and expense. Persons responsible for willful and direct violation of Section 10 of the River and Harbors Appropriation Act of 1899 or Section 404 of the Clean Water Act are subject to fines ranging up to $16,000 per day of violation, with a maximum cap of $187,500 in any single enforcement action, as well as criminal enforcement.

GLOSSARY

AGRICULTURAL PROTECTION AREAS (AG AREAS) - Allowed by P.A. 81-1173. An AG AREA consists of a minimum of 350 acres of farmland, as contiguous and compact as possible. Petitioned by landowners, AG AREAS protect for a period of ten years initially, then reviewed every eight years thereafter. AG AREA establishment exempts landowners from local nuisance ordinances directed at farming operations, and designated land cannot receive special tax assessments on public improvements that do not benefit the land, e.g. water and sewer lines.

AGRICULTURE - The growing, harvesting and storing of crops including legumes, hay, grain, fruit and truck or vegetable including dairying, poultry, swine, sheep, beef cattle, pony and horse production, fur farms, and fish and wildlife farms; farm buildings used for growing, harvesting and preparing crop products for market, or for use on the farm; roadside stands, farm buildings for storing and protecting farm machinery and equipment from the elements, for housing livestock or poultry and for preparing livestock or poultry products for market; farm dwellings occupied by farm owners, operators, tenants or seasonal or year around hired farm workers.

BEDROCK - Indicates depth at which bedrock occurs. Also lists hardness as rippable or hard.

FLOODING - Indicates frequency, duration, and period during year when floods are likely to occur.

HIGH WATER TABLE - A seasonal high water table is a zone of saturation at the highest average depth during the wettest part of the year. May be apparent, perched, or artesian kinds of water tables.

- **Water table, Apparent**: A thick zone of free water in the soil. An apparent water table is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil.
- **Water table, Artesian**: A water table under hydrostatic head, generally beneath an impermeable layer. When this layer is penetrated, the water level rises in an uncased borehole.
- **Water table, Perched**: A water table standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

DELINEATION - For Wetlands: A series of pink or orange flags placed on the ground by a certified professional that outlines the wetland boundary on a parcel.

DETERMINATION - A polygon drawn on a map using map information that gives an outline of a wetland.

HYDRIC SOIL - This type of soil is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (USDA Natural Resources Conservation Service 1987).

INTENSIVE SOIL MAPPING - Mapping done on a smaller more intensive scale than a modern soil survey to determine soil properties of a specific site, e.g. mapping for septic suitability.

LAND EVALUATION AND SITE ASSESSMENT (L.E.S.A.) - LESA is a systematic approach for evaluating a parcel of land and to determine a numerical value for the parcel for farmland preservation purposes.

MODERN SOIL SURVEY - A soil survey is a field investigation of the soils of a specific area, supported by information from other sources. The kinds of soil in the survey area are identified and their extent shown on a map, and an accompanying report describes, defines, classifies, and interprets the soils. Interpretations predict the behavior of the soils under different used and the soils' response to management. Predictions are made for areas of soil at specific places. Soils information collected in a soil survey is useful in developing land-use plans and alternatives involving soil management systems and in evaluating and predicting the effects of land use.

PERMEABILITY - Values listed estimate the range (in rate and time) it takes for downward movement of water in the major soil layers when saturated but allowed to drain freely. The estimates are based on soil texture, soil structure, available data on permeability and infiltration tests, and observation of water movement through soils or other geologic materials.

PIQ - Parcel in question

POTENTIAL FROST ACTION - Damage that may occur to structures and roads due to ice lens formation causing upward and lateral soil movement. Based primarily on soil texture and wetness.

PRIME FARMLAND - Prime farmland soils are lands that are best suited to food, feed, forage, fiber and oilseed crops. It may be cropland, pasture, woodland, or other land, but it is not urban and built up land or water areas. It either is used for food or fiber or is available for those uses. The soil qualities, growing season, and moisture supply are those needed for a well-managed soil economically to produce a sustained high yield of crops. Prime farmland produces in highest yields with minimum inputs of energy and economic resources and farming the land results in the least damage to the environment. Prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The level of acidity or alkalinity is acceptable. Prime farmland has few or no rocks and is permeable to water and air. It is not excessively erodible or saturated with water for long periods and is not frequently flooded during the growing season. The slope ranges mainly from 0 to 5 percent (USDA Natural Resources Conservation Service).

SEASONAL - When used in reference to wetlands indicates that the area is flooded only during a portion of the year.

SHRINK-SWELL POTENTIAL - Indicates volume changes to be expected for the specific soil material with changes in moisture content.

SOIL MAPPING UNIT - A map unit is a collection of soil areas of miscellaneous areas delineated in mapping. A map unit is generally an aggregate of the delineations of many different bodies of a kind of soil or miscellaneous area but may consist of only one delineated body. Taxonomic class names and accompanying phase terms are used to name soil map units. They are described in terms of ranges of soil properties within the limits defined for taxa and in terms of ranges of taxadjuncts and inclusions.

SOIL SERIES - A group of soils, formed from a particular type of parent material, having horizons that, except for texture of the A or surface horizon, are similar in all profile characteristics and in arrangement in the soil profile. Among these characteristics are color, texture, structure, reaction, consistence, and mineralogical and chemical composition.

SUBSIDENCE - Applies mainly to organic soils after drainage. Soil material subsides due to shrinkage and oxidation.

TOPSOIL - That portion of the soil profile where higher concentrations of organic material, fertility, bacterial activity and plant growth take place. Depths of topsoil vary between soil types.

WATERSHED - An area of land that drains to an associated water resource such as a wetland, river or lake. Depending on the size and topography, watersheds can contain numerous tributaries, such as streams and ditches, and ponding areas such as detention structures, natural ponds and wetlands.

WETLAND - An area that has a predominance of hydric soils and that is inundated or saturated by surface or groundwater at a frequency and duration sufficient enough to support, and under normal circumstances does support, a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions.

REFERENCES

Association of Illinois Soil & Water Conservation Districts. 2020. Illinois Urban Manual.

Berg, R. C., and J. P. Kempton. 1984. Potential for contamination of shallow aquifers from land burial of municipal wastes: Champaign, Illinois, Illinois State Geological Survey map, scale 1:500,000.

Clean Water Act of 1972, Sections 309 and 404.

Federal Emergency Management Agency. National Flood Hazard Layer (NFHL) Viewer. https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd. Accessed March 2024.

Illinois State Geological Survey, Department of Natural Resources. 2021. Geologic Road Map of Illinois.

Kendall County Department of Planning Building and Zoning and Kendall County Soil and Water Conservation District In cooperation with NRCS, USDA. Land Evaluation and Site Assessment System.

Kendall County. 2023. Land Resource Management Plan Map.

Natural Resources Conservation Service, United States Department of Agriculture. General Manual, Title 310, Land Use.

Natural Resources Conservation Service, United States Department of Agriculture. 2007. Hydric Soils of the United States.

Natural Resources Conservation Service, United States Department of Agriculture. Hydrologic Unit Map for Kendall County.

Natural Resources Conservation Service, United States Department of Agriculture. 1987. Soil Erosion by Water. Agriculture Information Bulletin 513.

Natural Resources Conservation Service, United States Department of Agriculture. 2008. Soil Survey of Kendall County.

Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. http://websoilsurvey.sc.egov.usda.gov/. Accessed March 2024.

Rivers and Harbors Appropriation Act of 1899, Section 10.

Rockford Map Publishers, Inc. 2021. Land Atlas and Plat Book, Kendall County, Illinois, 21st Edition.

United States Fish & Wildlife Service. 2018. National Wetlands Inventory. https://data.nal.usda.gov/dataset/national-wetlands-inventory. Accessed March 2024.

Nature Conservancy (U.S.) Great Lakes Program. 1994. *The Conservation of Biological Diversity in the Great Lakes Ecosystem: Issues and Opportunities*. The Program, 1994.

EcoCAT
Ecological Compliance Assessment Tool

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Applicant: Gloria Foxman
Contact: Amy Henry
Address: [redacted]

Project: TPE IL KE240, LLC
Address: Collins Road, Oswego

IDNR Project Number: 2405141
Date: 09/27/2023

Description: Construction of a solar farm with associated access roads and utilities.

Natural Resource Review Results

Consultation for Endangered Species Protection and Natural Areas Preservation (Part 1075)

The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location.

Consultation is terminated. This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary. Termination does not imply IDNR's authorization or endorsement.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Kendall

Township, Range, Section:
37N, 8E, 26



IL Department of Natural Resources Contact
Adam Rawe
217-785-5500
Division of Ecosystems & Environment

Government Jurisdiction
IL Environmental Protection Agency
Terri LeMasters
1020 North Grand Avenue East
Springfield, Illinois 62794 -9276

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

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Privacy

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Please fill out the following findings of fact to the best of your capabilities. §13:08.J of the Zoning Ordinance outlines findings that the Zoning Board of Appeals shall consider in rendering a decision, but is not required to make an affirmative finding on all items in order to grant a **special use**. They are as follows:

That the establishment, maintenance, and operation of the special use will not be detrimental to, or endanger, the public health, safety, morals, comfort, or general welfare.

Please see attached additional pages.

That the special use will not be substantially injurious to the use and enjoyment of other properties in the immediate vicinity for the purposes already permitted, nor substantially diminish and impair property values within the neighborhood. The Zoning classification of property within the general area of the property in question shall be considered in determining consistency with this standard. The proposed use shall make adequate provisions for appropriate buffers, landscaping, fencing, lighting, building materials, open space and other improvements necessary to insure that the proposed use does not adversely impact adjacent uses and is compatible with the surrounding area and/or the County as a whole.

That adequate utilities, access roads and points of ingress and egress, drainage, and/or other necessary facilities have been or are being provided.

That the special use shall in all other respects conform to the applicable regulations of the district in which it is located, except as such regulations may in each instance be modified by the County Board pursuant to the recommendation of the Zoning Board of Appeals

4.0 SPECIAL USE REVIEW CRITERIA

4.1 Approval Standards for Special Use (Kendall County Zoning Ordinance §13:08.J)

1. *That the establishment, maintenance, and operation of the special use will not be detrimental to, or endanger, the public health, safety, morals, comfort, or general welfare.*

The Project will be beneficial for Kendall County residents. The Project will generate clean, renewable electricity while producing no air, noise, or water pollution, ground contamination or unsightly views. The landscape buffer and existing vegetation around the site will be provided and preserved to screen the Project from the view of neighbors and roads. TPE proposes to use pollinator-friendly ground cover underneath the Project and native plantings around the perimeter. These include clover and grass species that promote the establishment and long-term health of bee populations. Please refer to the Landscape Plan provided in **Appendix J** for more details. The replacement of row crops with a pollinator seed mix will be a net positive for stormwater. Per the Minnesota Rural Water Association, solar installations with native pollinator-friendly ground cover achieve positive impacts similar to soil conservation projects, which reduce soil erosion, reduce soil quality degradation, and improve water quality. This report is included in **Appendix S**. The Project will be designed to account for all existing features, environmental features, and the county's Ordinance. Please refer to **Appendix I** for the Site Plan. The Project's Operations and Maintenance Plan (see **Appendix N**) also demonstrates how it will manage vegetation and weed control to prevent any unwanted vegetation from encroaching upon neighboring properties. In addition, the Project will promote the general welfare of Kendall County by supplying new jobs, new tax revenue and will be a source of generation of sustainable, clean, pollution-free renewable electricity.

2. *That the special use will not be substantially injurious to the use and enjoyment of other properties in the immediate vicinity for the purposes already permitted, nor substantially diminish and impair property values within the neighborhood. The Zoning classification of property within the general area of the property in question shall be considered in determining consistency with this standard. The proposed use shall make adequate provisions for appropriate buffers, landscaping, fencing, lighting, building materials, open space and other improvements necessary to insure that the proposed use does not adversely impact adjacent uses and is compatible with the surrounding area and/or the County as a whole.*

The Project will not interfere with the use and enjoyment of nearby properties. The surrounding properties are zoned primarily AG-1 and will not be prevented from continuing any existing use or from pursuing future uses. Solar projects like this one are good neighbors: the Project's operations would be quiet and create a harmonious environment, utilizing pollinator friendly seeding, native plants, and vegetative screening. The landscape buffer will reduce any visual impact on neighbors who live nearby. Moreover, the Project will not be detrimental to the value of other properties or improvements in the vicinity. As indicated by the property value impact study, **Appendix T**, the existence of the Project will have no negative impact on neighboring property values, and therefore will not substantially diminish or impair property values in the vicinity of the Project. The CohnReznick property value impact study indicates that solar facilities located in similar areas, with similar land

uses, do not cause any negative impacts to adjacent real estate, based on a review of academic studies, CohnReznick's own paired sales data, and interviews with County Assessors and other Market Participants. The study further details how solar facilities are generally harmonious with surrounding uses.

3. *That adequate utilities, access roads and points of ingress and egress, drainage, and/or other necessary facilities have been or are being provided.*

The Project will have adequate utility interconnections designed in collaboration with ComEd. The Project does not require water, sewer, or any other public utility facilities to operate. The Project will also build all roads and entrances necessary to access its facilities. The Project will be designed to include all roads and road entrances necessary to provide adequate ingress and egress to its facilities. Construction traffic will include approximately 25 work trucks per day. Considering the low number of work trucks visiting the Project site over the construction phase, traffic patterns in the vicinity of the Project will not be impacted. The Project will have minimal traffic upon completion of construction. Landscape maintenance and maintenance to the Project components are anticipated to occur on an as-needed basis, consistent with the Maintenance and Operations Plan. Existing traffic patterns will not be impacted in the post-construction operations phase. A drain tile survey will be completed prior to construction and foundation design will work around or reroute any identified drain tiles to ensure proper drainage. The Project will also be designed in a manner that will not materially modify existing water drainage patterns around its facilities.

4. *That the special use shall in all other respects conform to the applicable regulations of the district in which it is located, except as such regulations may in each instance be modified by the County Board pursuant to the recommendation of the Zoning Board of Appeals.*

The Project will comply with all local, state, and federal regulations and will be operated in a safe manner at all times. The Project will not negatively impact the environment by creating air, noise, or water pollution; ground contamination; or unsightly views. Numerous studies have shown that solar arrays and their components do not have a negative environmental impact. Please refer to **Appendix S** for a copy of these studies. The Project will not emit any air pollution of any kind and any sound generated by the Project's operations (which occur only during the day) will more than comply with the Illinois Pollution Control Board's limitations on noise. Also, please refer to IDNR's response to the Project's EcoCAT submission in **Appendix F**.

5. *That the special use is consistent with the purpose and objectives of the Land Resource Management Plan and other adopted County or municipal plans and policies.*

Per the Land Resource Management Plan (LRMP) Map, this parcel is slated for future development as part of a Rural Residential Area. Per the LRMP, developments should "provide ample common open space and blend into the surrounding countryside." The LMRP also quotes Planning Policies that are aligned with the proposed Commercial Solar Energy Facility, such as "Preserve open space and protect

natural resources before, during and after development of land uses within the Rural Residential area" and "Limit development within areas not served by central water supply."

Further, the Project supports the County Values listed in the LRMP, such as the desire to see more private investment in businesses and avoiding traffic. The Project would help achieve the Planning Goal of "Support[ing] the public and private use of sustainable energy systems (examples include wind, solar, and geo-thermal).

Please fill out the following findings of fact to the best of your capabilities. § 13:04 of the Zoning Ordinance outlines findings that the Zoning Board of Appeals shall take into consideration the extent to which the following conditions have been established by the evidence:

Please see attached additional pages.

That the particular physical surroundings, shape, or topographical condition of the specific property involved would result in a particular hardship or practical difficulty upon the owner if the strict letter of the regulations were carried out.

That the conditions upon which the requested variation is based would not be applicable, generally, to other property within the same zoning classification.

That the alleged difficulty or hardship has not been created by any person presently having an interest in the property.

That the granting of the variation will not materially be detrimental to the public welfare or substantially injurious to other property or improvements in the neighborhood in which the property is located.

That the proposed variation will not impair an adequate supply of light and air to adjacent property, or substantially increase the congestion in the public streets or increase the danger of fire, or endanger the public safety or substantially diminish or impair property values within the neighborhood.

5.0 VARIANCE REVIEW CRITERIA

5.1 Approval Standards for Variance (Kendall County Zoning Ordinance §13:04.A)

1. *That the particular physical surroundings, shape, or topographical condition of the specific property involved would result in a particular hardship or practical difficulty upon the owner if the strict letter of the regulations were carried out.*

The location of the host parcel creates a hardship for the property owner. A recent update to the Kendall County Zoning Ordinance requires that all commercial solar energy facilities located within one point five (1.5) miles of a municipality shall either annex to the municipality or obtain an annexation agreement with the municipality. However, the host parcel is not contiguous with the neighboring municipality and that village does not have a commercial solar ordinance, thus this municipality has requested that the project is permitted through the county and then pre-annexed into the village following the approval of the SUP. This request for variance is made pursuant to the written request of the village of Plainfield, which is included as **Appendix X**.

2. *That the conditions upon which the requested variation is based would not be applicable, generally, to other property within the same zoning classification.*

This variation is being sought based on the preference and written instruction of the municipality with planning authority over this parcel. This variation would not be applicable to other agricultural parcels in many situations: for applicants seeking an SUP for projects other than a commercial solar energy facility; for parcels that are not within 1.5 miles of a municipality; or for parcels within the jurisdiction of a municipality with a commercial solar energy facility ordinance, where the municipality completes the SUP process through the municipal government.

3. *That the alleged difficulty or hardship has not been created by any person presently having an interest in the property.*

This hardship has been created by the change in the Kendall County Zoning Ordinance, not by any person presently having an interest in the property.

4. *That the granting of the variation will not materially be detrimental to the public welfare or substantially injurious to other property or improvements in the neighborhood in which the property is located.*

The Project will be beneficial for Kendall County residents. The Project will generate clean, renewable electricity while producing no air, noise, or water pollution, ground contamination or unsightly views. The landscape buffer and existing vegetation around the site will be provided and preserved to screen the Project from the view of neighbors and roads. TPE proposes to use pollinator-friendly ground cover underneath the Project and native plantings around the perimeter. These include clover and grass species that promote the establishment and long-term health of bee populations. Please refer

to the Landscape Plan provided in **Appendix J** for more details. The replacement of row crops with a pollinator seed mix will be a net positive for stormwater. Per the Minnesota Rural Water Association, solar installations with native pollinator-friendly ground cover achieve positive impacts similar to soil conservation projects, which reduce soil erosion, reduce soil quality degradation, and improve water quality. This report is included in **Appendix S**. The Project will be designed to account for all existing features, environmental features, and the county's Ordinance. Please refer to Appendix I for the Site Plan. The Project's Operations and Maintenance Plan (see **Appendix N**) also demonstrates how it will manage vegetation and weed control to prevent any unwanted vegetation from encroaching upon neighboring properties. In addition, the Project will promote the general welfare of Kendall County by supplying new jobs, new tax revenue and will be a source of generation of sustainable, clean, pollution-free renewable electricity.

5. *That the proposed variation will not impair an adequate supply of light and air to adjacent property, or substantially increase the congestion in the public streets or increase the danger of fire, or endanger the public safety or substantially diminish or impair property values within the neighborhood*.

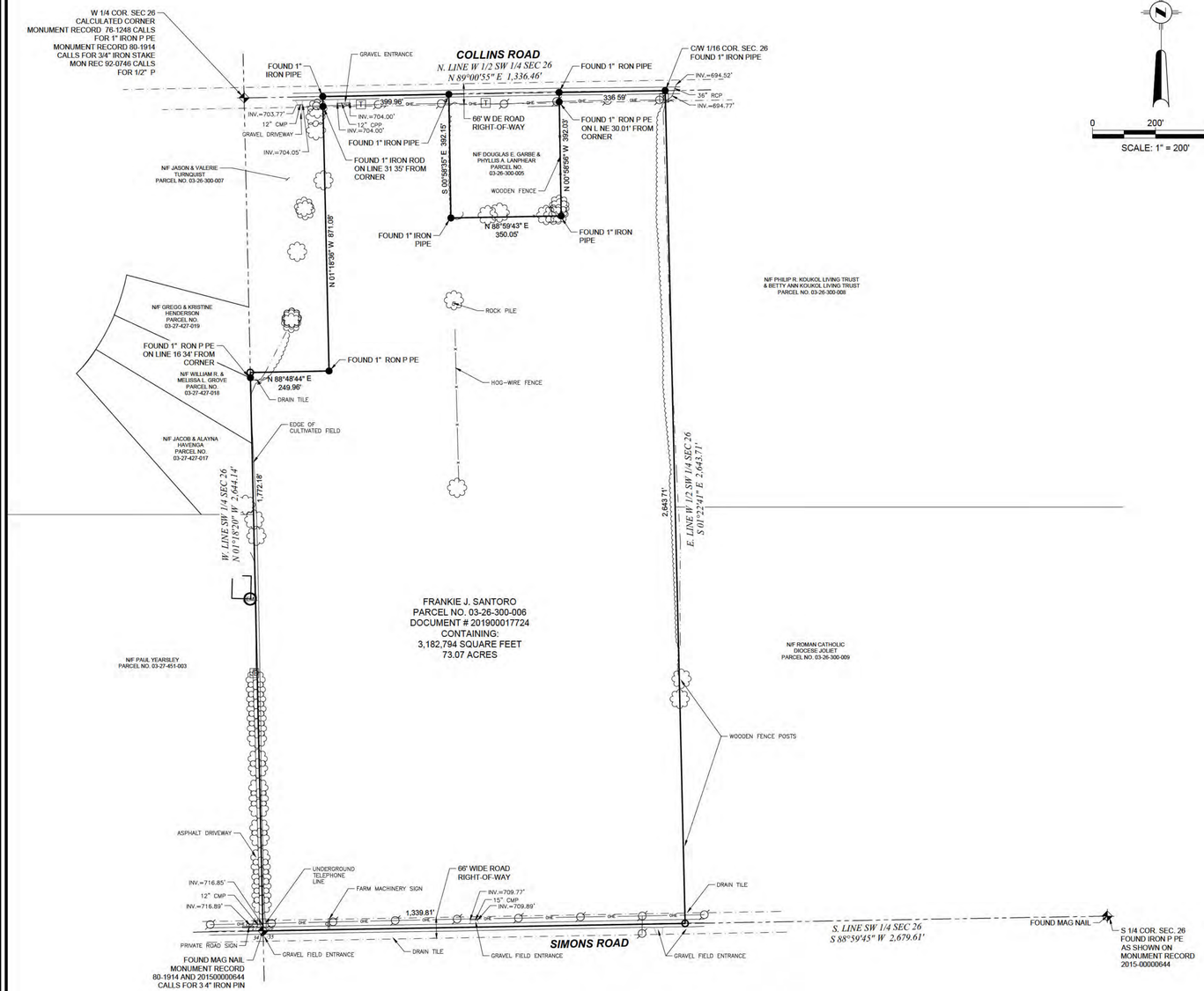
The Project will not interfere with the use and enjoyment of nearby properties. The surrounding properties are zoned primarily AG-1 and will not be prevented from continuing any existing use or from pursuing future uses. Solar projects like this one are good neighbors: the Project's operations would be quiet and create a harmonious environment, utilizing pollinator friendly seeding, native plants, and vegetative screening. The landscape buffer will reduce any visual impact on neighbors who live nearby. Moreover, the Project will not be detrimental to the value of other properties or improvements in the vicinity. As indicated by the property value impact study, Appendix T, the existence of the Project will have no negative impact on neighboring property values, and therefore will not substantially diminish or impair property values in the vicinity of the Project. The CohnReznick property value impact study indicates that solar facilities located in similar areas, with similar land uses, do not cause any negative impacts to adjacent real estate, based on a review of academic studies, CohnReznick's own paired sales data, and interviews with County Assessors and other Market Participants. The study further details how solar facilities are generally harmonious with surrounding uses. The Project will be designed to include all roads and road entrances necessary to provide adequate ingress and egress to its facilities. Construction traffic will include approximately 25 work trucks per day. Considering the low number of work trucks visiting the Project site over the construction phase, traffic patterns in the vicinity of the Project will not be impacted. The Project will have minimal traffic upon completion of construction. Landscape maintenance and maintenance to the Project components are anticipated to occur on an as-needed basis, consistent with the Maintenance and Operations Plan. Existing traffic patterns will not be impacted in the post-construction operations phase. Additionally, **Appendix S** contains a report showing that "concern over solar fire hazards should be limited because only a small portion of materials in the panels are flammable, and those components cannot self-support a significant fire."

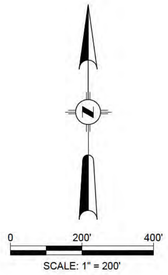
PLAT OF SURVEY

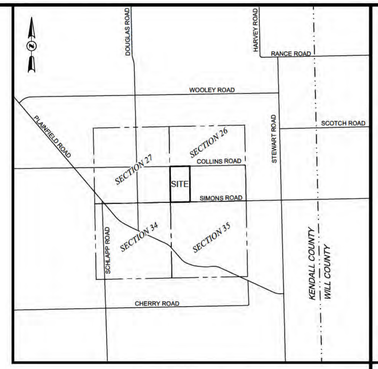
FOR

TPE IL KE240, LLC

A TRACT OF LAND LOCATED IN THE WEST HALF OF THE SOUTHWEST QUARTER OF
SECTION 26, TOWNSHIP 37 NORTH, RANGE 8 EAST, THIRD PRINCIPAL MERIDIAN
KENDALL COUNTY, STATE OF ILLINOIS







VICINITY MAP
N.T.S.

LWS
4266 BELL RD. SUITE 8
NEWBURGH, IN 47630

SCHEDULE B - EXCEPTION II (SPECIAL EXCEPTIONS)

EASEMENTS LISTED BELOW WERE TAKEN FROM A TITLE COMMITMENT ISSUED BY FIDELITY NATIONAL TITLE INSURANCE COMPANY, COMMITMENT NO. NTS-202256-IL-1, COMMITMENT DATE: SEPTEMBER 29, 2023 AT 12:00 AM

EXCEPT AS OTHERWISE EXPRESSLY NOTED N NOTES BELOW, LW SURVEY CO. DID NOT EXAMINE OR ADDRESS THE EFFECTS, FEES OR ASSESSMENTS DUE, TERMS, CONDITIONS, PROVISIONS, OBLIGATIONS, RESERVATIONS AND/OR RESTRICTIONS CONTA NED IN THE DOCUMENTS REFERRED TO N ANY ITEMS SHOWN N THE TITLE COMMITMENT. EASEMENTS AND PUBLIC DOCUMENTS SHOWN OR NOTED HEREON WERE EXAMINED AS TO LOCATION AND STATED PURPOSE AND WERE NOT EXAMINED AS TO RESERVATIONS, RESTRICTIONS, CONDITIONS, OBLIGATIONS, TERMS, OR AS TO THE RIGHT TO GRANT THE SAME.

SCHEDULE B - 1 OF THE ABOVE TITLE COMMITMENT CONTAINS REQU REMENTS REGARDING LIENS, TAXES, MORTGAGES AND LEASES THAT WHERE NOT EXAMINED OR ADDRESSED BY LW SURVEY CO.

EXCEPTION NOS. 1-12 ARE STANDARD EXCEPTIONS AND CONTAIN NO PLOTTABLE INFORMATION. LW MAKES NO DETERMINATIONS IN REGARDS TO OIL AND GAS RECORDS, M NERAL LEASES, ROYALT ES OR RESERVATIONS.

13. RIGHTS OF WAY FOR DRAINAGE T LES, DITCHES, FEEDERS, LATERALS, UNDERGROUND PIPES AND UTILITY EASEMENTS, IF ANY.

14. RIGHTS OF THE PUBLIC, THE STATE OF LLINOIS, THE COUNTY, THE TOWNSHIP AND THE MUNICIPALITY IN AND TO THAT PART OF THE LAND TAKEN, USED OR DEDICATED FOR ROADS OR HIGHWAYS.

15. MORTGAGE DATED 11/13/2019 IN FAVOR OF COMPEER FINANCIAL, FLCA N THE PRINCIPAL AMOUNT OF $470,000, RECORDED ON 11/22/2019 AS DOCUMENT NO. 201900017725.

16. MORTGAGE DATED 11/13/2019 IN FAVOR OF UNITED STATES OF AMERICA, ACT NG THROUGH THE FARM SERVICE AGENCY, UNITED STATES DEPARTMENT OF AGRICULTURE, N THE ORIGINAL PRINCIPAL AMOUNT OF $470,000, RECORDED ON 11/22/2019 AS DOCUMENT NO. 201900017726.

17. UCC NAMING COMPEER F NANCIAL, ACA AS SECURED PARTY, AND FRANKIE J. SANTORO AS DEBTOR. RECORDED ON 10/2/2020 AS DOCUMENT NO. 202000019345.

GENERAL NOTES:

1. THE PLAN SHOWN HEREON IS BASED ON A FIELD SURVEY PERFORMED BY LW SURVEY COMPANY ON OCTOBER 23-25, 2023.

2. CERTIFICATIONS NDICATED OR MPL ED HEREIN SHALL RUN ONLY TO THE PERSON OR PERSONS FOR WHOM THIS SURVEY WAS PERFORMED. CERTIFICATIONS ARE NOT TRANSFERABLE TO SUBSEQUENT OWNERS.

3. NO ENV RONMENTAL INVESTIGATIONS OR SURVEYS WERE MADE FOR THIS PLAT AND IT THEREFORE DOES NOT REFLECT THE CONDITIONS WHICH MAY BE REVEALED TO THIS PROPERTY THROUGH THOSE ADDITIONAL SURVEYS.

4. THE HORIZONTAL DATUM FOR THIS PROJECT IS REFERENCED TO THE NORTH AMERICAN DATUM OF 1983, ILLINOIS EAST ZONE.

5. THE PROPERTY IS PARTIALLY LOCATED IN ZONE "X", AREAS OF MINIMAL FLOOD HAZARD, AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR DEKALB COUNTY, ILLINOIS, MAP NUMBER 17037C0225E, EFFECTIVE DATE JANUARY 2, 2009.
NO SURVEYING WAS DONE TO DETERM NE FLOOD ZONES SHOWN HEREON AND AN ELEVATION CERT FICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

6. THE LOCATION OF UTILITIES SHOWN HEREON WAS DETERMINED BY OBSERVED EV DENCE, PLANS REQUESTED BY THE SURVEYOR AND OBTAINED FROM UTILITY COMPANIES OR MARKINGS REQUESTED BY THE 811 TICKET NO. **A232972543**. THIS SURVEY MAKES NO STATEMENT REGARDING THE ACTUAL PRESENCE OR ABSENCE OF ANY UTILITY AND/OR DRAINAGE SERVICE. VERIFY INFO PRIOR TO ANY NEW DESIGN, DEVELOPMENT OR CONSTRUCTION.

7. THIS SURVEY MAY NOT REFLECT ALL UTILIT ES OR MPROVEMENTS IF SUCH ITEMS ARE H DDEN BY LANDSCAPING OR ARE COVERED BY SUCH ITEMS AS DUMPSTERS, TRAILERS, CARS, DIRT, PAV NG OR SNOW. AT THE T ME OF THIS SURVEY, SNOW D D NOT COVER THE SITE. LAWN SPR NKLER SYSTEMS, IF ANY, ARE NOT SHOWN ON THIS SURVEY.

8. THERE WAS NO EVIDENCE OF RECENT EARTH MOV NG WORK, BU LDING CONSTRUCTION OR BUILD NG ADDITIONS OBSERVED DURING THE T ME THE F ELD WORK WAS PERFORMED. THERE ARE NO BUILD NGS LOCATED ON THE SUBJECT PROPERTY.

9. LWS IS AWARE OF NO PROPOSED CHANGES N STREET RIGHT OF WAY W DTHS.

LEGEND

- FOUND SECTION CORNER AS NOTED
- FOUND PROPERTY CORNER AS NOTED
- SET PROPERTY CORNER AS NOTED
- POWER POLE
- GUY WIRE
- SIGN
- TELEPHONE PEDESTAL
- ELECTRIC METER
- TELEPHONE PEDESTAL
- TREE
- (M) AS MEASURED
- (R) AS RECORDED IN DEED
- PROPERTY LINE
- SECTION L NE
- QUARTER SECTION LINE
- ROAD RIGHT-OF-WAY LINE
- OHE — OHE — OVERHEAD ELECTRIC LINE
- ST — ST — UNDERGROUND STORM SEWER LINE
- x — x — FENCE LINE (AS NOTED)
- TREE LINE

SURVEYOR'S CERTIFICATE

THIS PROFESSIONAL SERVICE CONFORMS TO THE CURRENT ILLINOIS MINIMUM STANDARDS FOR BOUNDARY SURVEYS.

DATED:_____

PRELIMINARY

This document shall not be recorded for any purpose and shall not be used or viewed or relied upon as a final survey document.

CHRISTOPHER D. HIGGINS
ILLINOIS PROFESSIONAL LAND SURVEYOR
REGISTRATION NO. [redacted]
C HIGG NS@LWSURVEY.COM
PHONE: (815)420-8914
FOR & ON BEHALF OF LW SURVEY CO.
DESIGN F RM # 184003102-008

REVISIONS

NO.	DATE	DESCRIPTION
1	3/18/2024	REVISE OWNER NAME

DESIGNED BY: N/A
DRAWN BY: ARG
CHECKED BY: GSC
PROJ. MANAGER: GSC

PROJ. NO.: 54715
FILE NAME: 54715 - KE240 Boundary.dwg
DATE: 11/7/2023
SCALE: 1" = 200'

PLAT OF SURVEY
OF LANDS OF
FRANKIE J. SANTORO
FOR TPE IL, KE240, LLC

DRAWING NO.

1 OF 1

Kimley»Horn

September 27, 2023

Illinois State Historic Preservation Office
Illinois Department of Natural Resources
Attn: Review & Compliance
1 Old State Capitol
Springfield, Illinois 62701

RE: ***Illinois State Historic Preservation Office Project Review***
TPE IL KE240, LLC
Collins Road, Oswego, IL 60543

To whom it may concern:

Kimley-Horn and Associates, Inc. is requesting your review of the completed Illinois State Historic Preservation Office Project Review application for a proposed development. We have been contracted by Turning Point Energy to investigate the site at Collins Road in Oswego, IL. The proposed project site is approximately 73.20 acres and currently agriculture land. The following items are enclosed with this letter:

- SHPO Permit Application
- USGS Aurora South Quadrangle Map
- Aerial Exhibit

In addition to the information listed above, a HARGIS map has been included. The required information to go along with the HARGIS map is as follows:

Is this property
Listed on the National Register: Yes___ No_X_
Within a Local Historic District: Yes___ No_X_
A Local Landmark: Yes___ No_X_
Survey ranking, if not designated: _____

If you have any questions or concerns, please feel free to contact me via phone (651.643.0408) or email (Amy.Henry@kimley-horn.com).

Sincerely,

Amy Henry, AICP

Kimley-Horn and Associates, Inc.

ILLINOIS STATE HISTORIC PRESERVATION OFFICE PROJECT REVIEW

State Agency Historic Resource Preservation Act
(Ill. Rev. Stat. 1989, Ch. 127, Pas 133c21, et seq.)

PROJECT CHARACTERISTICS

Project Title: TPE IL KE240, LLC KHA Project Number 268173044

Project Address or Municipality: Collins Road, Oswego, IL

County: Kendall County USGS 7.5' Quadrangle: Aurora South

Sec: 26 Twp: 37N Range: 8E

APPLICANT/DEVELOPER

Gloria Foxman
Name

TPE IL KE240, LLC
Company Name

[redacted]
Address

[redacted]
City, State Zip + four

[redacted]
Telephone

CONSULTING ENGINEER

Jason Cooper, P.E.
Name

Kimley-Horn and Associates
Company Name

[redacted]
Address

[redacted]
City, State Zip + four

[redacted]
Telephone

Project Scope

Construction of a solar farm with associated access roads and utilities.

Acreage and or Lineal Foot: 73.20 acres

Project Type

☐ Public Land ☒ Private Land ☐ Public Undertaking ☒ Private Undertaking

Extent of Project Ground Disturbance

Construction of a new solar farm, access roads, and utilities will occur. Any existing buildings/structures within the project limits are to remain and will not be impacted.

Previous Disturbance to Project Area:

The site currently consists of agriculture land.

PERMITTING

From which State Agencies or funding sources will permit, license, approvals or funds be obtained or required

(check appropriate boxes)?

☐ IDOT-Division of Water Resources ☒ IEPA Water Pollution Control ☐ IEPA Public Water Supplies ☒ Other: IDNR

Federal Agencies from which permits, licenses, approvals, or funds may be required (i.e., Corps, HUD) ☐ US Army Corps of Engineers

This review process does not exempt your project from compliance with Section 106 of the National Historic Preservation Act of 1966, as amended.

Mandatory Enclosures:

1. USGS 7.5' topographic map or city map clearly indicating project area and street address (if available).
2. Current photographs (no photocopies) of all standing structures; if building is over 40 years old include interior photographs.
3. If this project has been previously reviewed by SHPO, include all pertinent correspondence.
4. Any known historical information, i.e., is structure significant in the community or is it associated with an individual of significance.
5. The names of state and/or federal agencies and entities that are providing funding, licenses, permits, or approvals for your project.
6. Previously assigned SHPO log numbers associated with your project (if any)

USGS science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

AURORA SOUTH QUADRANGLE
ILLINOIS
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 16T

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, August 2019 - September 2019
Roads.....U.S. Census Bureau, 2017
Names.....GNIS, 1980 - 2021
Hydrography.....National Hydrography Dataset, 2002 - 2018
Contours.....National Elevation Dataset, 2019
Boundaries.....Multiple sources; see metadata file 2018 - 2019
Public Land Survey System.....BLM, 2020
Wetlands.....FWS National Wetlands Inventory Not Available

MN
GN
3°22
60 MILS
0°52
15 MILS
UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
CM
Grid Zone Designation
16T

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard.

ILLINOIS
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES
1 Sugar Grove
2 Aurora North
3 Naperville
4 Yorkville
5 Normantown
6 Plattville
7 Yorkville SE
8 Plainfield

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

AURORA SOUTH, IL
2021

7643016364992
NSN 7643016364992
NGA REF NO. USGSX24K1889



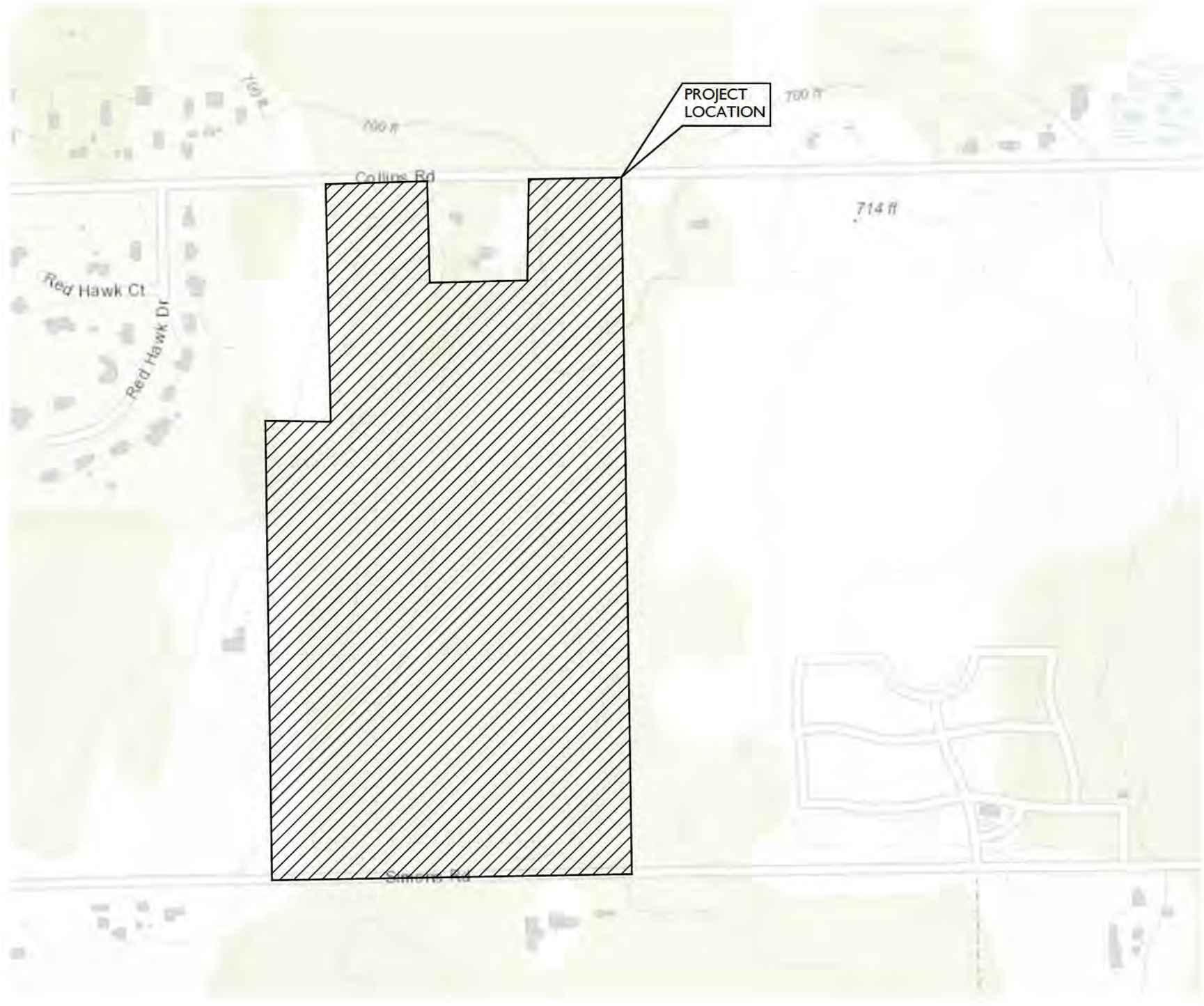
Kimley»Horn
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4201 WINFIELD ROAD, SUITE 600, WARRENVILLE, IL 60555
PHONE: 630-487-5550 WWW.KIMLEY-HORN.COM

AERIAL MAP (N.T.S)

COLLINS ROAD
OSWEGO, IL 60543

SHEET NUMBER
1 OF 1

Plotted By:------ September 27, 2023 9:18:54 AM K:\CHI_LGRV\Dunlop\Plot Files\VA\268173044_TPE_IL240\V3 Design\CAD\Exhibits\TPEPO AERIAL MAP.dwg
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HARGIS MAP (N.T.S)

COLLINS ROAD
OSWEGO, IL 60543

SHEET NUMBER
1 OF 1

Plotted By:—— September 27, 2023 10:16:00 AM K:\TPA_LDR\Tampa\Plans Group\AA\069173244_TPE_KE240\3 Design\CAD\Addata\SRP\SRP0 HARGIS MAP.dwg
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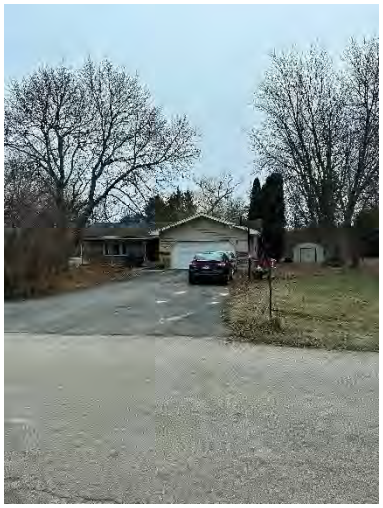


Photo 1: Structure 1 (7 Amy drive) Looking East
Date of construction: Unknown



Photo 3: Structure 3 (19 Amy drive) Looking East
Date of construction: 1976



Photo 5: Structure 5 (33 Amy drive) Looking East
Date of construction: 1977



Photo 2: Structure 2 (15 Amy drive) Looking East
Date of construction: 1974



Photo 4: Structure 4 (29 Amy drive) Looking East
Date of construction: Unknown



Photo 6: Structure 6 (41 Amy drive) Looking East
Date of construction: Unknown



Photo 7: Structure 7 (43 Amy drive) Looking East
Date of construction: Unknown



Photo 9: Structure 9 (47 Amy drive) Looking South
Date of construction: 1975



Photo 10B: Structure 10 (2175 Collins Road) Looking West
Date of construction: 1977



Photo 8: Structure 8 (45 Amy drive) Looking Southeast
Date of construction: Unknown



Photo 10: Structure 10 (2175 Collins Road) Looking East
Date of construction: 1977



Photo 11: Structure 11 (2175 Collins Road) Looking East
Date of construction: 1977



Photo 12: Structure 12 (2125 Collins Road) Looking West
Date of construction: Unknown



Photo 14: Structure 14 (2093 Collins Road) Looking West
Date of construction: Unknown



Photo 16: Structure 16 (2093 Collins Road) Looking West
Date of construction: Unknown



Photo 13: Structure 13 (2125 Collins Road) Looking East
Date of construction: Unknown



Photo 15: Structure 15 (2093 Collins Road) Looking West
Date of construction: Unknown



Photo 17: Structure 17 (2073 Collins Road) Looking East
Date of construction: Unknown



Photo 18: Structure 18 (2031 Collins Road) Looking West
Date of construction: Unknown



Photo 19: Structure 19 (2031 Collins Road) Looking North
Date of construction: Unknown



Photo 21: Structure 21 (2031 Collins Road) Looking
Date of construction: Unknown



Photo 18B: Structure 18 (2031 Collins Road) Looking North
Date of construction: Unknown



Photo 20: Structure 20 (2031 Collins Road) Looking East
Date of construction: Unknown



Photo 22: Structure 22 (2031 Collins Road) Looking East
Date of construction: Unknown

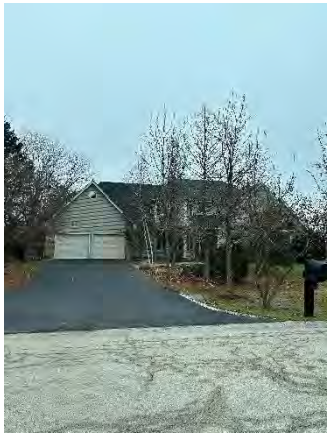


Photo 23: Structure 23 (2 Red Hawk Drive) Looking East
Date of construction: 1991



Photo 24: Structure 24 (6 Red Hawk Drive) Looking East
Date of construction: 1993



Photo 25: Structure 25 (10 Red Hawk Drive) Looking East
Date of construction: 1996



Photo 26: Structure 26 (14 Red Hawk Drive) Looking East
Date of construction: 1993



Photo 27: Structure 27 (18 Red Hawk Drive) Looking Southeast
Date of construction: 1992



Photo 28: Structure 28 (22 Red Hawk Drive) Looking Southeast
Date of construction: 1996



Photo 29: Structure 29 (26 Red Hawk Drive) Looking Southeast
Date of construction: 1993



Photo 30: Structure 30 (30 Red Hawk Drive) Looking Southeast
Date of construction: 1993

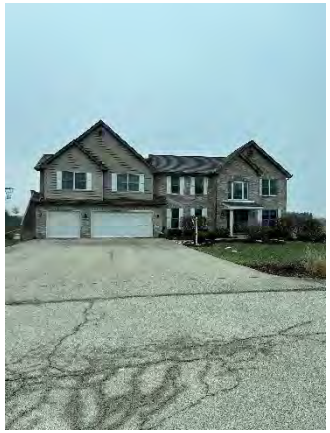


Photo 31: Structure 31 (34 Red Hawk Drive) Looking South
Date of construction: 1990



Photo 31B: Structure 31 (34 Red Hawk Drive) Looking South
Date of construction: 1990



Photo 32: Structure 32 (38 Red Hawk Drive) Looking South
Date of construction: 1994

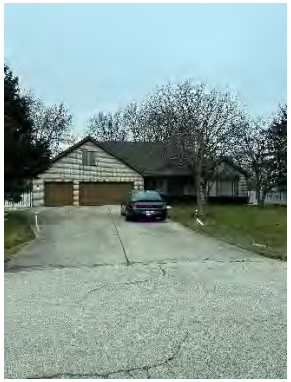


Photo 33: Structure 33 (39 Red Hawk Drive) Looking Nothwest
Date of construction: Unknown



Photo 34: Structure 34 (35 Red Hawk Drive) Looking North
Date of construction: Unknown



Photo 36: Structure 36 (15 Red Hawk Drive) Looking West
Date of construction: Unknown



Photo 37B: Structure 37 (8 Red Hawk Drive) Looking Southeast
Date of construction: 1993



Photo 35: Structure 35 (25 Red Hawk Drive) Looking Northwest
Date of construction: 1997



Photo 37: Structure 37 (8 Red Hawk Drive) Looking South
Date of construction: 1993



Photo 38: Structure 38 (12 Red Hawk Drive) Looking Southwest
Date of construction: 1992



Photo 39: Structure 39 (17 Red Hawk Drive) Looking West
Date of construction: Unknown



Photo 40: Structure 40 (7 Red Hawk Drive) Looking North
Date of construction: Unknown



Photo 41: Structure 41 (5 Red Hawk Drive) Looking West
Date of construction: Unknown

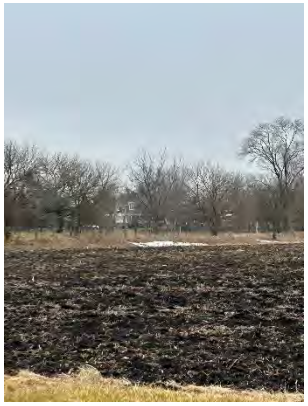


Photo 42: Looking North
Date of construction:



Photo 43: Structure 43 (1850 Collins Road) Looking South
Date of construction: Unknown



Photo 44: Structure 44 (1850 Collins Road) Looking South
Date of construction: Unknown



Photo 45: Structure 45 (1690 Collins Road) Looking South
Date of construction: Unknown



Photo 46: Structure 46 (1539 Collins Road) Looking
Date of construction: Unknown



Photo 47: Structure 47 (1501 Simons Road) Looking South
Date of construction: Unknown



Photo 48: Structure 48 (1850 Simons Road) Looking South
Date of construction: Unknown



Photo 48B: Structure 48 (1850 Simons Road) Looking South
Date of construction: Unknown



Photo 49: Structure 49 (1850 Simons Road) Looking South
Date of construction: Unknown



Photo 50-51: Structure 50-51 (2025 Simons Road) Looking West
Date of construction: 1998



Photo 53: Structure 53 (2080 Simons Road) Looking South
Date of construction: Unknown



Photo 55: Structure 55 (2080 Simons Road) Looking South
Date of construction: Unknown

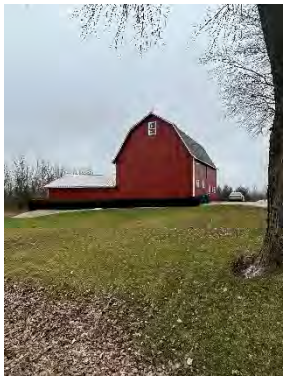


Photo 52: Structure 52 (2080 Simons Road) Looking South
Date of construction: Unknown



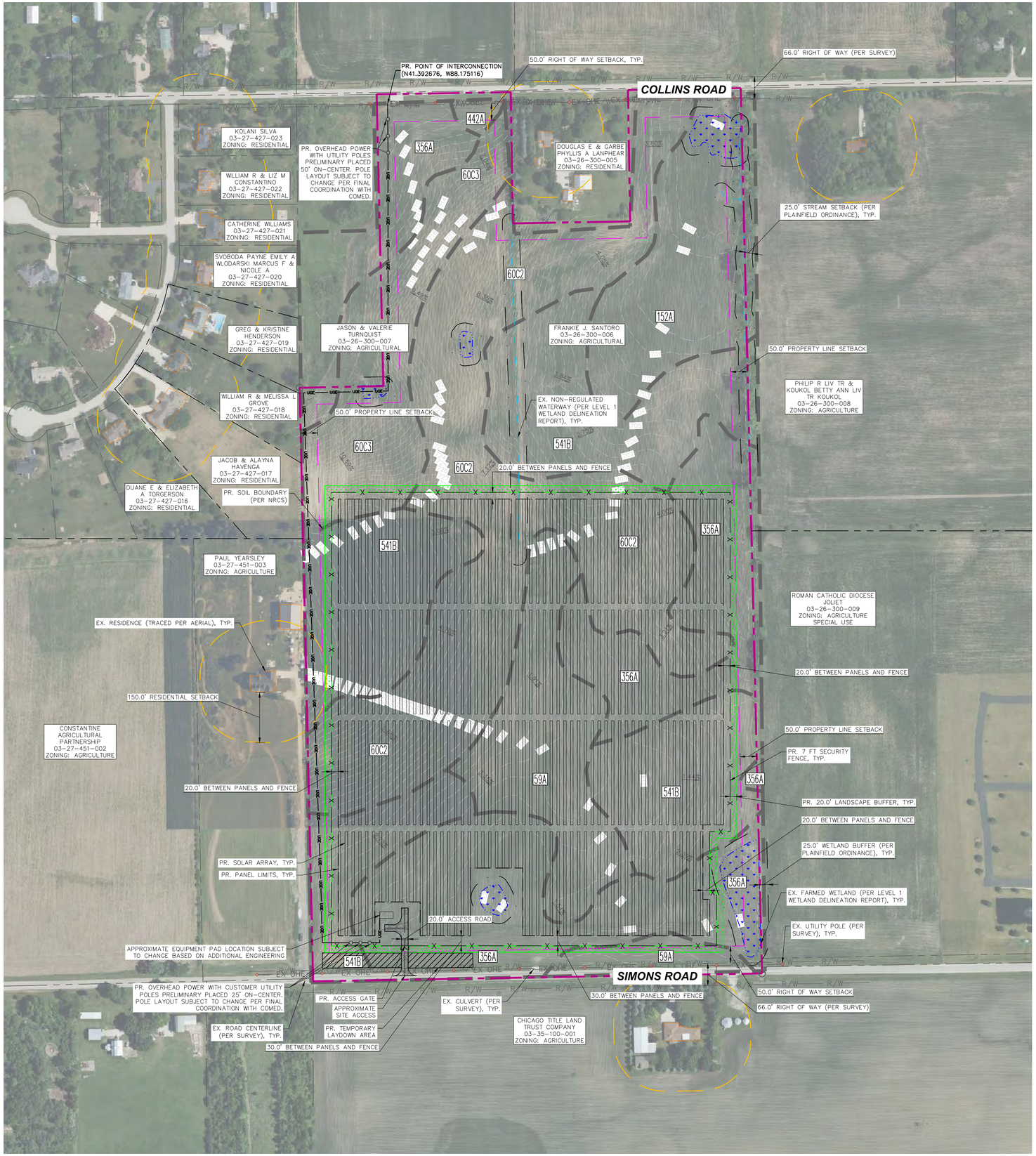
Photo 54: Structure 54 (2080 Simons Road) Looking South
Date of construction: Unknown



Photo 56: Structure 55 (2080 Simons Road) Looking South
Date of construction: Unknown



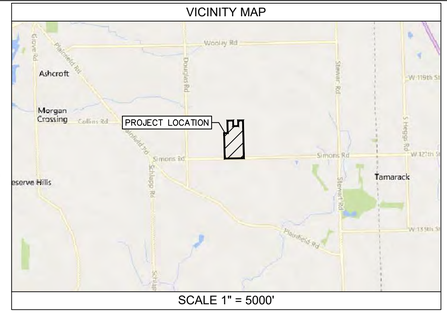
Photo 57: Structure 57 (2080 Simons Road) Looking South
Date of construction: Unknown



NORTH

GRAPHIC SCALE IN FEET
0 75 150 300

VICINITY MAP



SCALE 1" = 5000'

LEGEND

ROAD LABEL	N 2200TH ST
PROPERTY LINE / PROJECT BOUNDARY	
ADJACENT PROPERTY LINE (PER SURVEY)	
ADJACENT PROPERTY LINE (TRACED PER GIS)	
RIGHT OF WAY	R/W
SETBACK	
RESIDENTIAL DWELLING SETBACK	
EX. RESIDENCE/STRUCTURE	
EX. CONTOUR	XXX
EX. OVERHEAD ELECTRIC	EX OHE
EX. UTILITY POLE	
EX. ROAD CENTERLINE	
EX. FARMED WETLAND (PER LEVEL 1 DELINEATION BY KIMLEY-HORN)	
EX. WETLAND BUFFER (PER THE CITY PLAINFIELD CODE OF ORDINANCES 4-10-6-8)	
EX. NON REGULATED WATERWAY (PER LEVEL 1 DELINEATION BY KIMLEY-HORN)	
EX. CULVERT	
EX. FLOW (DIRECTION AND SLOPE)	XX%
PR. SECURITY FENCE	X
PR. GATE	
PR. TEMPORARY LAYDOWN AREA	
PR. ACCESS ROAD	
PR. LANDSCAPE BUFFER	
PR. UNDERGROUND ELECTRIC	UGE UGE
PR. OVERHEAD ELECTRIC	OHW
PR. UTILITY POLE	
PR. EQUIPMENT PAD	
PR. SOLAR ARRAY	
PR. PANEL LIMITS	
SOIL BOUNDARY	

SITE DATA TABLE

PIN #	03-26-300-006
PROPERTY OWNER	FRANKIE J. SANTORO
SITE ADDRESS	SIMONS RD, OSEWEGO, IL 60543
LEGAL DESCRIPTION	SEC 26-37-8
ZONING JURISDICTION	KENDALL COUNTY
ZONING	A1 - AGRICULTURAL
CURRENT LAND USE	AGRICULTURAL FIELD
PROPOSED USE	COMMERCIAL SOLAR FIELD
TOTAL PARCEL AREA	73.07 ± AC
PRELIMINARY DISTURBED AREA	37.84 ± AC
PRELIMINARY SOLAR AREA	32.95 ± AC
RIGHT OF WAY SETBACK	50'
PROPERTY LINE SETBACK	50'
RESIDENTIAL SETBACK	150'

*ZONING SITE PLAN IS BEING SUBMITTED FOR SPECIAL USE PERMIT TO CONSTRUCT/OPERATE A SOLAR FARM

NOTES

1. THE PURPOSE OF THIS PLAN IS FOR SPECIAL USE PERMIT REVIEW AND APPROVAL BY KENDALL COUNTY TO CONSTRUCT A COMMERCIAL SOLAR FARM.
2. THIS PLAN WAS PRODUCED UTILIZING GIS RESOURCES, A PLAT OF SURVEY PREPARED BY LWS DATED 11/29/2023, AND INFORMATION FROM MULTIPLE SOURCES, INCLUDING KENDALL COUNTY GIS, GOOGLE EARTH, AND USGS TOPOGRAPHIC INFORMATION.
3. SUBJECT PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AS SHOWN ON THE FLOOD INSURANCE RATE MAP (COMMUNITY PANEL 17093C0070G) PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).
4. THE LOCATIONS OF PROPOSED IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO: FENCING, SOLAR ARRAY RACKING, INVERTER/TRANSFORMER PADS, OVERHEAD POLES AND LINES, ETC., SHOWN ARE APPROXIMATE AND ARE SUBJECT TO MODIFICATION DUE TO SITE CONDITIONS, ADDITIONAL PERMITTING REQUIREMENTS, EQUIPMENT SPECIFICATIONS, AND/OR OTHER CONSTRAINTS DURING FINAL ENGINEERING.
5. PROJECT AREA, INCLUDING CONSTRUCTION STAGING AREAS, WILL BE CLEARED AND GRUBBED AS NECESSARY, RETAINING PRE-DEVELOPMENT DRAINAGE PATTERNS TO THE BEST EXTENT POSSIBLE. CONSTRUCTION STAGING AND AREAS SUBJECT TO RUTTING DURING CONSTRUCTION WILL BE TEMPORARILY STABILIZED WITH GRAVEL. SOIL CONDITIONS AND EQUIPMENT LOADS WILL DETERMINE FINAL DESIGN.
6. ALL DIMENSIONS SHOWN ARE AT 90 DEGREES UNLESS OTHERWISE NOTED.
7. CONTRACTOR SHALL CALL AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. ADDITIONALLY, CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES.
8. CONTRACTOR SHALL MAINTAIN ACCESS AND UTILITY SERVICES TO ANY REMAINING BUILDING(S) OR ADJACENT BUILDING(S) THROUGHOUT THE DEMOLITION AND CONSTRUCTION PHASES. EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED/RESTORED TO THE SATISFACTION OF THE OWNER BY THE CONTRACTOR RESPONSIBLE FOR THE DAMAGE.
9. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE SIGNS, BARRICADES, WARNING LIGHTS, GUARD RAILS, AND EMPLOY FLAGGERS AS NECESSARY WHEN CONSTRUCTION ENDANGERS EITHER VEHICULAR OR PEDESTRIAN TRAFFIC. THESE DEVICES SHALL REMAIN IN PLACE UNTIL THE TRAFFIC MAY PROCEED NORMALLY AGAIN.
10. SITE WILL HAVE NO DEDICATIONS FOR OPEN SPACE, NATURAL AREA, HISTORIC BUILDING(S)/STRUCTURE(S), OR STORMWATER MANAGEMENT FACILITIES.
11. SITE WILL NOT INCLUDE WATER SOURCE OR SEWAGE DISPOSAL. APPROXIMATE LOCATION OF EXISTING WATER WELL LOCATIONS SHOWN PER THE ILLINOIS WATER WELL INTERACTIVE MAP ONLINE.
12. STORMWATER MANAGEMENT FACILITIES TO BE PROVIDED AS REQUIRED BY COUNTY AND/OR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITTING. REQUIREMENTS TO BE DETERMINED DURING FINAL ENGINEERING.
13. THE MAXIMUM HEIGHTS OF ANY SOLAR PANEL SHALL NOT EXCEED 20 FEET.
14. SOLAR PANELS WILL BE DESIGNED WITH ANTI-REFLECTIVE COATING TO MINIMIZE GLARE.
15. COLLECTION LINES WITHIN THE SOLAR FARM WILL BE LOCATED AND MAINTAINED UNDERGROUND.
16. THERE SHALL BE NO EXTERIOR LIGHTING.
17. SETBACKS SHOWN ON THIS PLAN ARE BASED ON KENDALL COUNTY CODE OF ORDINANCES, SECTION 7:00.D.17.
18. ALL NECESSARY PERMITS FOR SOIL EROSION CONTROL AND DRIVEWAY CONSTRUCTION WILL BE OBTAINED AS PART OF FINAL ENGINEERING AND PRIOR TO CONSTRUCTION.
19. LEVEL 1 WETLAND DELINEATION PERFORMED BY KIMLEY-HORN DATED 02/13/2024.
20. THE WETLAND BUFFER WAS DETERMINED BASED ON THE PLAINFIELD CODE OF ORDINANCES SECTION 4-10-6-8. STATES THAT THERE NEEDS TO BE A NATURAL VEGETATION STRIP OF AT LEAST 25 FEET. PER SECTION 400, WILL NEED A SITE DEVELOPMENT PERMIT.

SOILS DATA TABLE

MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC SOIL GROUP
59A	LISBON SILT LOAM, 0 TO 2 PERCENT SLOPES	C/D
60C2	LA ROSE SILT LOAM, 5 TO 10 PERCENT SLOPES	C
60C3	LA ROSE CLAY LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED	C
152A	DRUMMER SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES	B/D
356A	ELPASO SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES	B/D
442A	MUNDELEIN SILT LOAM, 0 TO 2 PERCENT SLOPES	B/D
541B	GRAYMONT SILT LOAM, 2 TO 5 PERCENT SLOPES	C

No.	REVISIONS	DATE
1	REVISION 1	03/26/2024

TurningPoint Energy

Kimley»Horn
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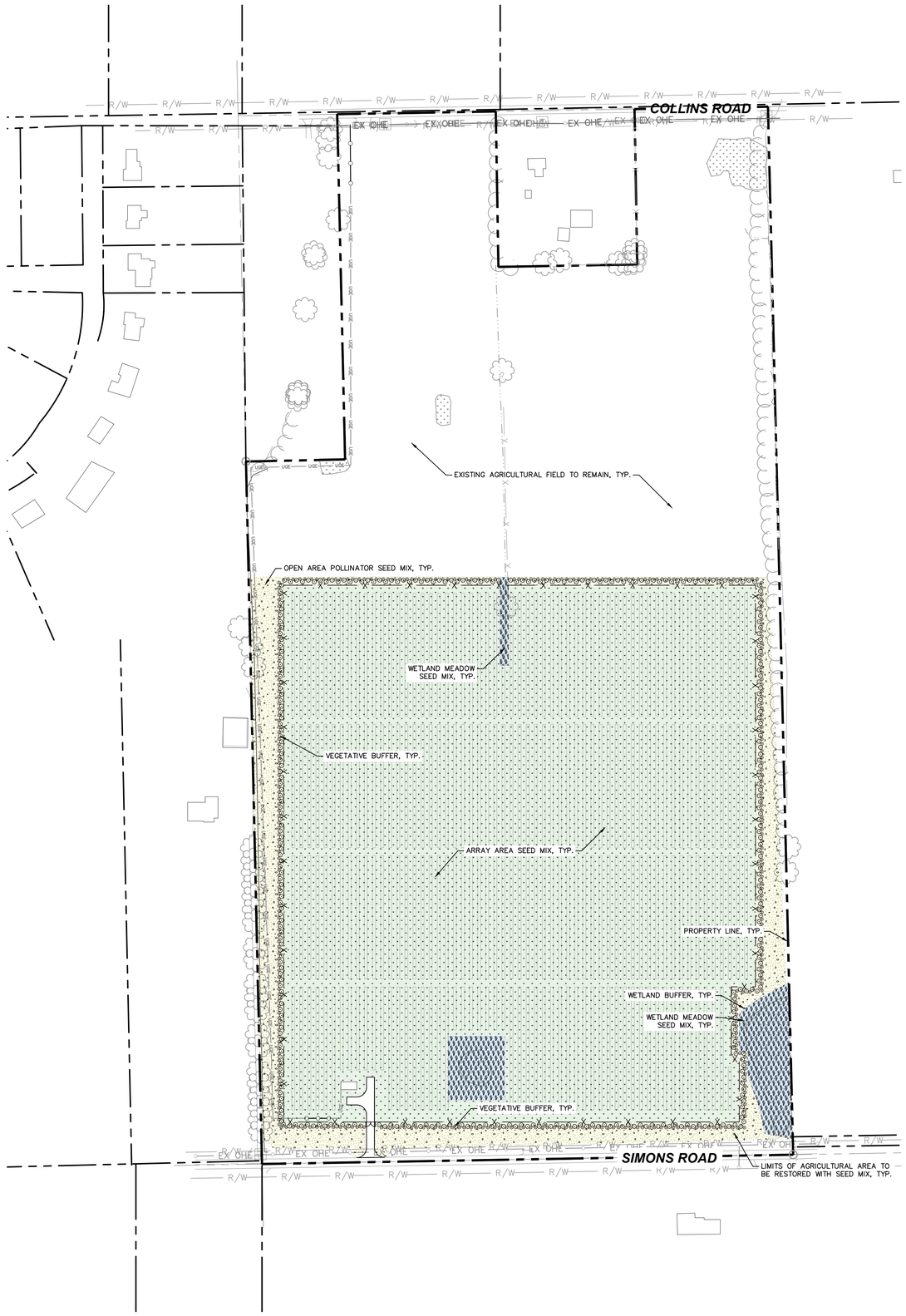
KHA PROJECT 268173044
DATE 02/19/2024
SCALE AS SHOWN
DESIGNED BY MRK
DRAWN BY DE
CHECKED BY AH

ZONING SITE PLAN

TPE IL KE240, LLC

KENDALL COUNTY, IL

SHEET NUMBER
Z1.0



OPEN AREA POLLINATOR SEED MIX

25%	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM
10%	BOUTELOUA CURTIPENDULA	SIDEOATS GRAMA
6%	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED
5.5%	ELYMUS CANADENSIS	CANADA WILDRYE
5.2%	ECHINACEA PURPUREA	PURPLE CONEFLOWER
5%	DALEA PURPUREA	PURPLE PRAIRIE CLOVER
4.3%	COREOPSIS LANCEOLATA	LANCELEAF COREOPSIS
3.5%	RUDBECKIA HIRTA	BLACKEYED SUSAN
3%	ALLIUM CERNUUM	NODDING WILD ONION
2.2%	SOLIDAGO NEMORALIS	GRAY GOLDENROD
2.1%	SPIRAEA ALBA DU ROI	MEADOWSWEET
2%	RATIBIDA PINNATA	YELLOW PRAIRIE CONEFLOWER
2%	ROSA SETIGERA MICHX	MICHIGAN ROSE
1.8%	SOLIDAGO SPECIOSA	SHOWY GOLDENROD
1.8%	SYMPHYOTRICHUM LAEVE	SMOOTH BLUE ASTER
1.6%	CEANOTHUS AMERICANUS	NEW JERSEY TEA
1.5%	GERANIUM MACULATUM	WILD GERANIUM
1.5%	LIATRIS ASPERA MICHX	ROUGH BLAZING STAR
1.4%	SOLIDAGO RIDDELLII	RIDDELL'S GOLDENROD
1.4%	SYMPHYOTRICHUM ERICOIDES	HEATH ASTER
1.3%	PENSTEMON HIRSUTUS	HAIRY BEARDTONGUE
1.2%	LOBELIA SIPHILITICA	BLUE LOBELIA
1.2%	ASCLEPAIS TUBEROSA	BUTTERFLY WEED
1.2%	ASCLEPIAS INCARNATA	SWAMP MILKWEED
1.2%	ZIZIA AUREA	GOLDEN ALEXANDERS
1.1%	PENSTEMON DIGITALIS	TALL WHITE BEARDTONGUE
1%	ANEMONE CANADENSIS	CANADA ANEMONE
1%	AQUILEGIA CANADENSIS	COLUMBINE
1%	BAPTISIA BRACTEATA VAR LEUCOPHAEA	WILD INDIGO
1%	LUPINUS PERENNIS V. OCCIDENTALIS	WILD LUPINE
1%	MONARDA FISTULOSA	WILD BERGAMOT
1%	MONARDA PUNCTATA	HORSE MINT

SEEDING RATE: 25 LB PER ACRE
SEED WITH COVER CROP OF OATS, JAPANESE MILLET, WINTER PEA, OR ANNUAL RYE DEPENDENT ON SEASON AT A RATE OF 30 LB PER ACRE.

SPECIFIED MIX SUBJECT TO AVAILABILITY DURING TIME OF CONSTRUCTION, OR APPROVED EQUAL.

ARRAY AREA SEED MIX

30%	FESTUCA RUBRA	CREEPING RED FESCUE
20%	FESTUCA OVINA	HARD FESCUE
14%	CAREX VULPINOIDEA	FOX SEDGE
10%	FESTUCA RUBRA SSP. COMMUTATA	CHEWINGS FESCUE
8%	POA PRATENSE	KENTUCKY BLUEGRASS
8%	JUNCUS EFFUSUS	SOFT RUSH
5%	TRIFOLIUM PRATENSE	RED CLOVER
5%	TRIFOLIUM REPENS, 'DUTCH'	DUTCH WHITE CLOVER

SEEDING RATE: 20 LB PER ACRE
SEED WITH COVER CROP OF OATS, JAPANESE MILLET, WINTER PEA, OR ANNUAL RYE DEPENDENT ON SEASON AT A RATE OF 30 LB PER ACRE.

SPECIFIED MIX SUBJECT TO AVAILABILITY DURING TIME OF CONSTRUCTION, OR APPROVED EQUAL.

WETLAND MEADOW SEED MIX

PERMANENT SOLAR FARM SEED MIX

30.0% CAREX VULPINOIDEA	FOX SEDGE
20.0% ELYMUS VIRGINICUS	VIRGINIA WILDRYE
16.0% CAREX SCOPARIA	BLUNT BROOM SEDGE
13.0% CAREX LURIDA	LURID SEDGE
7.5% SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM
5.0% CAREX LUPULINA	HOP SEDGE
5.0% JUNCUS EFFUSUS	SOFT RUSH
1.0% CAREX INTUMESCENS	STAR SEDGE
1.0% IRIS VERSICOLOR	BLUE FLAG
0.5% ONOCELA SENSIBILIS	SENSITIVE FERN
0.5% CAREX STIPATA	AWL SEDGE
0.5% PENTHORUM SEDOIDES	DITCH STONECROP

SEEDING RATE: 30 LB PER ACRE

SEED WITH COVER CROP OF OATS, JAPANESE MILLET, WINTER PEA, OR ANNUAL RYE DEPENDENT ON SEASON AT A RATE OF 12 LB PER ACRE.

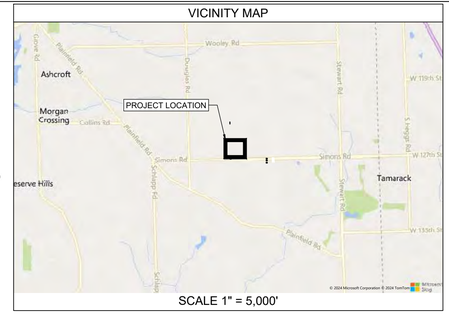
SPECIFIED MIX DEPENDENT ON AVAILABILITY DURING TIME OF CONSTRUCTION, OR APPROVED EQUAL

NOTE: IN WETLAND AREAS SEED IS TO BE INSTALLED ONLY WITHIN AREAS THAT NOT INUNDATED WITH WATER AT THE TIME OF PLANTING. PLUGGING TO BE USED IN LIEU OF SEEDING IN AREAS WHERE SEEDING IS IMPOSSIBLE DUE TO HIGH WATER LEVELS AND PLUGS ARE TO SUPPLEMENT SEED AREAS AS NEEDED TO IMPROVE VEGETATIVE COVER.

NORTH

GRAPHIC SCALE IN FEET
0 75 150 300

VICINITY MAP



SCALE 1" = 5,000'

CONCEPT PLANT SCHEDULE

EVERGREEN TREE/SHRUB 342
SAWARA CYPRESS 'SOFT SERVE'
JUNIPERUS VIRGINIANA
JUNIPERUS CHINESIS 'MOUNTBATTEN'
PICEA PUNGENS 'FAT ALBERT'
TAXUS CUSPIDATA 'CAPITATA'
TAXUS X MEDIA 'HICKSII'
THUJA OCCIDENTALIS 'WOODWARDI'

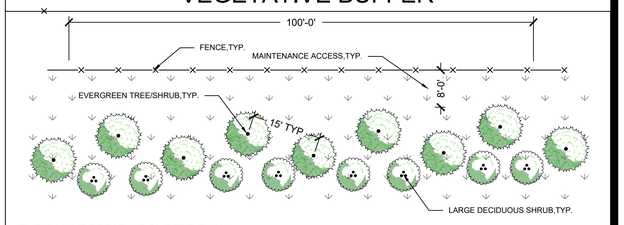
LARGE DECIDUOUS SHRUB 341
ARONIA ARBUTIFOLIA
CORNUS SERICEA CARDINAL
EUONYMUS ALATUS 'COMPACTUS'
ILEX VERTICILLATA
LINDERA BENZOIN
PHYSOCARPOS OPULIFOLIUS
SAMUCUS CANADENSIS
VIBURNUM DENTATUM
VIBURNUM LENTAGO 'MOHICAN'
VIBURNUM PRUNIFOLIUM

OPEN AREA POLLINATOR SEED MIX

ARRAY AREA SEED MIX

WETLAND MEADOW SEED MIX

VEGETATIVE BUFFER



TYPICAL VEGETATIVE BUFFER PLAN



HEIGHTS SHOWN INDICATE ANTICIPATED SIZE AT MATURITY (5+ YEARS)

TYPICAL VEGETATIVE BUFFER ELEVATION

No.	REVISIONS	DATE
1	REVISION 1	02-27-2024

TurningPoint Energy

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MADISON, WI 53703 (608) 251-0407
WWW.KIMLEY-HORN.COM

KHA PROJECT 268173044
DATE
SCALE AS SHOWN
DESIGNED BY MRK
DRAWN BY DE
CHECKED BY AH

LANDSCAPE PLAN

TPE IL KE240, LLC
KENDALL COUNTY, IL

SHEET NUMBER
LA-1

GROUND COVER MAINTENANCE REQUIREMENTS

MAINTENANCE PROGRAMS SHALL BE SITE SPECIFIC AND COORDINATED WITH THE LANDSCAPE CONTRACTOR AND COUNTY FOR ADEQUATE MAINTENANCE PROCEDURES. A FIVE YEAR STEWARDSHIP PROGRAM IS NECESSARY TO ENSURE PROPER ESTABLISHMENT AND HEALTH OF GROUND COVER, TO CONTROL INVASIVE SPECIES, AND TO PREVENT OVERGROWTH AND SHADING OF EQUIPMENT. AFTER THE FIFTH GROWING SEASON, PROGRAM IS TO BE REDUCED TO TWO VISITS PER YEAR, DEPENDENT UPON SITE CONDITIONS AND REQUIRED STRATEGIES TO MAINTAIN GOOD HEALTH OF THE SITE SUCH AS DETHACHING, ADDITIONAL MOWING, OR HERBICIDE TREATMENTS.

FIRST YEAR

SPRING:
-EARLIEST POSSIBLE INSTALLATION MAY OCCUR IN THE SPRING OF THE FIRST YEAR. NO MAINTENANCE ACTIONS ARE REQUIRED TO BE PERFORMED DURING THE FIRST SEASON OF INSTALL. IF SEED APPLICATION TAKES PLACE IN SUMMER OR FALL OF THE FIRST YEAR, MAINTENANCE AND MONITORING SHOULD START THE FOLLOWING SEASON.

SUMMER:
-SITE VISITS ARE TO BE PERFORMED THREE TIMES THROUGHOUT THE SUMMER AT THE MIDDLE OR END OF EACH MONTH, WITH MONITORING AND EVALUATION OF VEGETATION HEIGHT AND PRESENCE OF INVASIVE SPECIES OCCURRING AT EACH VISIT.
-CONTROL INVASIVE WOODY AND HERBACEOUS FLORA THROUGH PHYSICAL REMOVAL OR SPOT *HERBICIDE TREATMENTS.
-CONDUCT MOWING UP TO THREE TIMES MAXIMUM DURING THE SUMMER IN AREAS OF THE SITE IDENTIFIED TO HAVE VEGETATION OVER 16 INCHES IN HEIGHT. AREAS WITH HEIGHT UNDER 16 INCHES MAY REMAIN UNTIL THE NEXT SCHEDULED MONITORING VISIT. NEWLY SEEDED AREAS SHOULD BE CUT BACK TO 10 INCHES IN HEIGHT.

FALL:
-SITE VISITS ARE TO BE PERFORMED THREE TIMES THROUGHOUT THE FALL AT THE MIDDLE OR END OF EACH MONTH, WITH MONITORING AND EVALUATION OF VEGETATION HEIGHT AND PRESENCE OF INVASIVE SPECIES OCCURRING AT EACH VISIT.
-CONTROL INVASIVE WOODY AND HERBACEOUS FLORA THROUGH PHYSICAL REMOVAL OR SPOT *HERBICIDE TREATMENTS.
-CONDUCT MOWING UP TO THREE TIMES MAXIMUM DURING THE FALL IN AREAS OF THE SITE IDENTIFIED TO HAVE VEGETATION OVER 16 INCHES IN HEIGHT. AREAS WITH HEIGHT UNDER 16 INCHES MAY REMAIN UNTIL THE NEXT SCHEDULED MONITORING VISIT. NEWLY SEEDED AREAS SHOULD BE CUT BACK TO 10 INCHES IN HEIGHT.

SECOND YEAR

SPRING:
-SITE VISITS ARE TO BE PERFORMED THREE TIMES THROUGHOUT THE SPRING AT THE MIDDLE OR END OF EACH MONTH, WITH MONITORING AND EVALUATION OF VEGETATION HEIGHT AND PRESENCE OF INVASIVE SPECIES OCCURRING AT EACH VISIT.
-DURING FIRST VISIT, MOWING SHOULD OCCUR TO CUT BACK ANY VEGETATION TO A HEIGHT OF 10 INCHES AND REMOVE DEAD STALKS AND SEED HEADS FROM THE PREVIOUS GROWING SEASON.
-CONTROL INVASIVE WOODY AND HERBACEOUS FLORA THROUGH PHYSICAL REMOVAL OR SPOT *HERBICIDE TREATMENTS.
-CONDUCT MOWING UP TO THREE TIMES MAXIMUM DURING THE SPRING IN AREAS OF THE SITE IDENTIFIED TO HAVE VEGETATION OVER 16 INCHES IN HEIGHT. AREAS WITH HEIGHT UNDER 16 INCHES MAY REMAIN UNTIL THE NEXT SCHEDULED MONITORING VISIT. SEEDED AREAS SHOULD BE CUT BACK TO 12 INCHES IN HEIGHT.
-PLANT SUPPLEMENTAL SEED AS NEEDED TO ADDRESS AREAS OF POOR COVERAGE AND TO INCREASE COMPETITION AND BIO-DIVERSITY.

SUMMER:
-SITE VISITS ARE TO BE PERFORMED THREE TIMES THROUGHOUT THE SUMMER AT THE MIDDLE OR END OF EACH MONTH, WITH MONITORING AND EVALUATION OF VEGETATION HEIGHT AND PRESENCE OF INVASIVE SPECIES OCCURRING AT EACH VISIT.
-CONTROL INVASIVE WOODY AND HERBACEOUS FLORA THROUGH PHYSICAL REMOVAL OR SPOT *HERBICIDE TREATMENTS.
-CONDUCT MOWING UP TO THREE TIMES MAXIMUM DURING THE SUMMER IN AREAS OF THE SITE IDENTIFIED TO HAVE VEGETATION OVER 16 INCHES IN HEIGHT. AREAS WITH HEIGHT UNDER 16 INCHES MAY REMAIN UNTIL THE NEXT SCHEDULED MONITORING VISIT. SEEDED AREAS SHOULD BE CUT BACK TO 12 INCHES IN HEIGHT.

FALL:
-SITE VISITS ARE TO BE PERFORMED THREE TIMES THROUGHOUT THE FALL AT THE MIDDLE OR END OF EACH MONTH, WITH MONITORING AND EVALUATION OF VEGETATION HEIGHT AND PRESENCE OF INVASIVE SPECIES OCCURRING AT EACH VISIT.
-CONTROL INVASIVE WOODY AND HERBACEOUS FLORA THROUGH PHYSICAL REMOVAL OR SPOT *HERBICIDE TREATMENTS.
-CONDUCT MOWING UP TO THREE TIMES MAXIMUM DURING THE FALL IN AREAS OF THE SITE IDENTIFIED TO HAVE VEGETATION OVER 16 INCHES IN HEIGHT. AREAS WITH HEIGHT UNDER 16 INCHES MAY REMAIN UNTIL THE NEXT SCHEDULED MONITORING VISIT. SEEDED AREAS SHOULD BE CUT BACK TO 12 INCHES IN HEIGHT.

THIRD, FOURTH, AND FIFTH YEAR

SPRING:
-SITE VISIT IS TO BE PERFORMED ONE TIME DURING THE EARLY SPRING, WITH MONITORING AND EVALUATION OF VEGETATION HEIGHT AND PRESENCE OF INVASIVE SPECIES OCCURRING.
-MOWING SHOULD OCCUR TO CUT BACK ANY VEGETATION TO A HEIGHT OF 10 INCHES AND REMOVE DEAD STALKS AND SEED HEADS FROM THE PREVIOUS GROWING SEASON.
-IF INVASIVE WOODY AND HERBACEOUS FLORA HAVE BEEN IDENTIFIED, PHYSICAL REMOVAL OR SPOT *HERBICIDE TREATMENTS ARE REQUIRED.

SUMMER:
-SITE VISIT IS TO BE PERFORMED ONE TIME DURING THE SUMMER, WITH MONITORING AND EVALUATION OF VEGETATION HEIGHT AND PRESENCE OF INVASIVE SPECIES OCCURRING.
-MOWING SHOULD OCCUR IN AREAS OF THE SITE IDENTIFIED TO HAVE VEGETATION OVER 16 INCHES IN HEIGHT. AREAS WITH HEIGHT UNDER 16 INCHES MAY REMAIN UNTIL THE NEXT SCHEDULED MONITORING VISIT. SEEDED AREAS SHOULD BE CUT BACK TO 12 INCHES IN HEIGHT.
-IF INVASIVE WOODY AND HERBACEOUS FLORA HAVE BEEN IDENTIFIED, PHYSICAL REMOVAL OR SPOT *HERBICIDE TREATMENTS ARE REQUIRED.

FALL:
-SITE VISIT IS TO BE PERFORMED ONE TIME DURING THE FALL, WITH MONITORING AND EVALUATION OF VEGETATION HEIGHT AND PRESENCE OF INVASIVE SPECIES OCCURRING.
-MOWING SHOULD OCCUR IN AREAS OF THE SITE IDENTIFIED TO HAVE VEGETATION OVER 24 INCHES IN HEIGHT. AREAS WITH HEIGHT UNDER 24 INCHES MAY REMAIN UNTIL THE NEXT SCHEDULED MONITORING VISIT. SEEDED AREAS SHOULD BE CUT BACK TO 12 INCHES IN HEIGHT.
-IF INVASIVE WOODY AND HERBACEOUS FLORA HAVE BEEN IDENTIFIED, PHYSICAL REMOVAL OR SPOT *HERBICIDE TREATMENTS ARE REQUIRED.

FOLLOWING THE FIFTH YEAR

-SITE VISITS ARE TO BE PERFORMED TWICE A YEAR, DURING THE EARLY SPRING AND LATE SUMMER, WITH MONITORING AND EVALUATION OF VEGETATION HEIGHT AND PRESENCE OF INVASIVE SPECIES OCCURRING AT EACH VISIT.
-DURING THE SPRING, MOWING SHOULD OCCUR TO CUT BACK ANY VEGETATION TO A HEIGHT OF 10 INCHES AND REMOVE DEAD STALKS AND SEED HEADS FROM THE PREVIOUS GROWING SEASON.
-DURING THE FALL, MOWING SHOULD OCCUR IN AREAS OF THE SITE IDENTIFIED TO HAVE VEGETATION OVER 24 INCHES IN HEIGHT. AREAS WITH HEIGHT UNDER 24 INCHES MAY REMAIN UNTIL THE NEXT SCHEDULED MONITORING VISIT. SEEDED AREAS SHOULD BE CUT BACK TO 12 INCHES IN HEIGHT.
-IF INVASIVE WOODY AND HERBACEOUS FLORA HAVE BEEN IDENTIFIED, PHYSICAL REMOVAL OR SPOT *HERBICIDE TREATMENTS ARE REQUIRED.

*ALL HERBICIDES ARE TO BE ANIMAL FRIENDLY AND APPLIED BY A TRAINED PERSONNEL.

PERFORMANCE STANDARDS

SATISFACTORY LANDSCAPE DEVELOPMENT ASSOCIATED WITH NATURALIZED VEGETATION WILL BE BASED ON THE FOLLOWING ITEMS.

FIRST YEAR:

WITHIN THREE MONTHS OF SEED INSTALLATION (OR THREE MONTHS AFTER THE START OF THE GROWING SEASON FOLLOWING DORMANT SEEDING), APPROXIMATELY 90 PERCENT OF THE SEEDED AREA, AS MEASURED BY AERIAL COVER, WILL BE VEGETATED OR OTHERWISE STABILIZED AGAINST EROSION. THE COVER CROP MAY BE INCLUDED IN THIS MEASUREMENT. IF MINIMUM IS NOT MET, ADDITIONAL SEEDING IS REQUIRED IN AREAS WITH POOR COVER.

SECOND YEAR:

BY THE END OF THE SECOND GROWING SEASON, THE PLANTED AREAS ARE DESIGNED TO HAVE A MINIMUM OF 50 PERCENT GROUND COVER BY SPECIES IN FINAL SEED MIX (NOT TO INCLUDE TEMPORARY COVER CROP OR UNDESIRABLE / INVASIVE SPECIES).

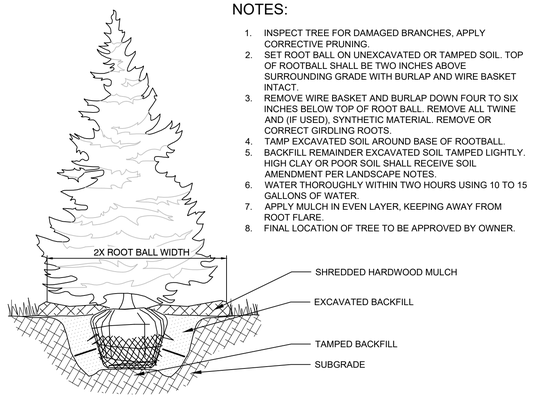
THIRD YEAR:

BY THE END OF THE THIRD GROWING SEASON, THE PLANTED AREAS ARE DESIGNED TO HAVE A MINIMUM OF 75 PERCENT GROUND COVER BY SPECIES IN FINAL SEED MIX (NOT TO INCLUDE TEMPORARY COVER CROP OR UNDESIRABLE / INVASIVE SPECIES).

IF PERFORMANCE STANDARD IS NOT MET AT EACH OBSERVATION, LANDSCAPE CONTRACTOR IS TO NOTIFY OWNER AND DEVELOP CORRECTIVE ACTION SUCH AS SEEDING OR HERBICIDE TREATMENT

GENERAL LANDSCAPE NOTES

1. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING MATERIALS AND PLANTS SHOWN ON THE LANDSCAPE PLAN. THE CONTRACTOR IS RESPONSIBLE FOR THE COST TO REPAIR UTILITIES, ADJACENT LANDSCAPE, PUBLIC AND PRIVATE PROPERTY THAT IS DAMAGED BY THE CONTRACTOR OR THEIR SUBCONTRACTOR'S OPERATIONS DURING INSTALLATION OR DURING THE SPECIFIED MAINTENANCE PERIOD. CALL FOR UTILITY LOCATIONS PRIOR TO ANY EXCAVATION.
2. THE CONTRACTOR SHALL REPORT ANY DISCREPANCY IN PLAN VS. FIELD CONDITIONS IMMEDIATELY TO THE LANDSCAPE ARCHITECT, PRIOR TO CONTINUING WITH THAT PORTION OF WORK.
3. NO PLANTING WILL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY OF THEIR TRENCHES OR EXCAVATIONS THAT SETTLE..
5. DO NOT DISTURB THE EXISTING PAVING, LIGHTING, OR LANDSCAPING THAT EXISTS ADJACENT TO THE SITE UNLESS OTHERWISE NOTED ON PLAN.
6. PLANT QUANTITIES SHOWN ARE FOR THE CONVENIENCE OF THE OWNER AND JURISDICTIONAL REVIEW AGENCIES. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL PLANT QUANTITIES AS DRAWN.
7. THE CONTINUED MAINTENANCE OF ALL REQUIRED LANDSCAPING SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY ON WHICH SAID MATERIALS ARE REQUIRED. ALL PLANT MATERIALS REQUIRED BY THIS SECTION SHALL BE MAINTAINED AS LIVING VEGETATION AND SHALL BE PROMPTLY REPLACED IF THE PLANT MATERIAL HAS DIED PRIOR TO FINAL ACCEPTANCE.
8. NO GENERAL SPRAY OF HERBICIDES IS TO BE USED FOR ANY SEEDED AREAS.
9. ONLY HERBICIDES FORMULATED FOR ANIMAL SAFETY SHALL BE USED.
10. ALL WORK DEEMED NATURAL AREA TO BE SEEDED OR PLANTED SHALL BE PERFORMED BY A QUALIFIED LANDSCAPE CONTRACTOR.
11. SEED SHALL BE OBTAINED FROM SOURCE SPECIALIZING IN NATIVE SPECIES, WHERE AVAILABLE OR AS APPROVED BY CLIENT OR CLIENT'S REPRESENTATIVE.
12. ALL SEED MIXES SHALL BE INSTALLED WITH A COVER CROP DEPENDENT ON SEASON AND REQUIREMENTS SPECIFIED PER SEED MIX / SEED SUPPLIER.



NOTES:

1. INSPECT TREE FOR DAMAGED BRANCHES, APPLY CORRECTIVE PRUNING.
2. SET ROOT BALL ON UNEXCAVATED OR TAMPED SOIL. TOP OF ROOTBALL SHALL BE TWO INCHES ABOVE SURROUNDING GRADE WITH BURLAP AND WIRE BASKET INTACT.
3. REMOVE WIRE BASKET AND BURLAP DOWN FOUR TO SIX INCHES BELOW TOP OF ROOT BALL. REMOVE ALL TWINE AND (IF USED), SYNTHETIC MATERIAL. REMOVE OR CORRECT GIRDLING ROOTS.
4. TAMP EXCAVATED SOIL AROUND BASE OF ROOTBALL.
5. BACKFILL REMAINDER EXCAVATED SOIL TAMPED LIGHTLY. HIGH CLAY OR POOR SOIL SHALL RECEIVE SOIL AMENDMENT PER LANDSCAPE NOTES.
6. WATER THOROUGHLY WITHIN TWO HOURS USING 10 TO 15 GALLONS OF WATER.
7. APPLY MULCH IN EVEN LAYER, KEEPING AWAY FROM ROOT FLARE.
8. FINAL LOCATION OF TREE TO BE APPROVED BY OWNER.

1 EVERGREEN TREE PLANTING
NTS

ESTABLISHMENT NOTES AND STANDARDS

SEED AREA ESTABLISHMENT

PREPARATION

-SOIL IN AREAS OF EXISTING AGRICULTURAL USAGE IS RECOMMENDED TO BE TESTED FOR HIGH LEVELS OF HERBICIDES, AND AMENDED APPROPRIATELY TO BRING CONCENTRATION DOWN TO LEVELS APPROPRIATE FOR COMMON GRASSES. SOILS IDENTIFIED TO BE HIGH IN HERBICIDES OR CONTAMINATES SHOULD BE EVALUATED BY AN ENVIRONMENTAL SPECIALIST OR SOIL SCIENTIST TO DETERMINE REQUIRED METHODS OF REMEDIATION.
-SOILS SHALL BE UNIFORM, WITHOUT EXCESSIVE FURROWS, RUTS, OR RIDGES, AND LOW AREAS WHERE WATER MAY COLLECT.
-SOILS SHOULD BE CLEARED OF TRASH, DEBRIS, AND INVASIVE SPECIES PRIOR TO FINAL SEEDING APPLICATION.
-SOIL PREPARATION SHALL OCCUR WHEN WEATHER PERMITS AND TIMING ALLOWS FOR AT LEAST A FOLLOWING 48 HOURS WHERE SEEDING AND STABILIZATION METHODS MAY TAKE PLACE.

TIMING

-TO PROMOTE EARLY AND STRONG ESTABLISHMENT OF SPECIFIED SEED MIX, DORMANT SEASON SEED APPLICATION SHOULD BE UTILIZED IF POSSIBLE AND AS CONSTRUCTION TIMELINE PERMITS.
-DORMANT SEASON SEEDING SHOULD UTILIZE WINTER-TOLERANT SEED FROM THE SPECIFIED SEED MIX, ALONG WITH 20-30 LBS PER ACRE OF A WINTER NURSE CROP SUCH AS SECALE CEREALE, PISUM SATIVUM, OR AVENA SATIVA.
-TO APPLY DORMANT SEED, SITE SHOULD BE CLEARED OF INVASIVE WEEDS, LIGHTLY TILLED OR DISKED, THEN DRILL APPLIED ACROSS THE ENTIRE AREA OF AGRICULTURAL SOIL.
-ACTIVE SEASON SEED APPLICATION SHOULD BE PERFORMED BETWEEN APRIL 1ST AND MAY 30TH, AFTER RISK OF MAJOR FREEZING CONDITIONS IS MINIMIZED, FOR IDEAL ESTABLISHMENT AND MINIMIZING INVASIVE SPECIES COMPETITION.

APPLICATION

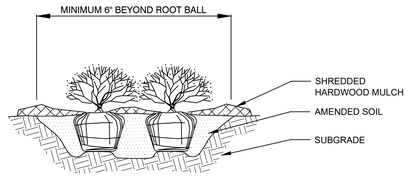
-SEED MIXTURES SHALL BE MECHANICALLY DRILLED.
-NO STRAW MULCH IS REQUIRED, UNLESS NEEDED FOR STEEP SLOPES, SOIL STABILIZATION, OR OTHER AREAS THAT ARE IDENTIFIED FOR EROSION PREVENTION.
-SEED SHALL BE APPLIED AT INDICATED RATES WITH COVER CROP OATS, JAPANESE MILLET, WINTER WHEAT, ANNUAL RYE, OR SPECIFIED CROP DEPENDENT ON SEASON AND SOIL CONDITIONS.
-SEED SPECIES SHALL BE LOCALLY SOURCED WHEN FEASIBLE.
-FINAL SEED MIX MAY VARY DEPENDENT UPON SPECIFIC SPECIES AVAILABILITY AND TIME OF INSTALLATION.
-FINAL SEED MIX SHALL BE APPROVED BY OWNER, OWNER'S REPRESENTATIVE, OR LANDSCAPE ARCHITECT.
-IF SEEDING IS PERFORMED PRIOR TO FINAL SITE INSTALLATION, ADDITIONAL SEED MAY BE APPLIED BY A LOW SPREADER IN AREAS THAT WERE DISTURBED.
-SITE SHOULD BE MONITORED FOLLOWING INSTALLATION FOR AREAS IDENTIFIED FOR ADDITIONAL RESEEDING UNTIL SEED MIX IS SUFFICIENTLY ESTABLISHED.

INVASIVE WEED CONTROL, MONITORING, AND MANAGEMENT

-A WORK PLAN SHOULD BE DEVELOPED TO AVOID THE SPREAD OF INVASIVE PLANTS FROM THESE AREAS.
-IF SUBSTANTIAL AREAS OF INVASIVE HERBACEOUS SPECIES ARE FOUND PRIOR TO OR AFTER PROJECT DEVELOPMENT, FOLIAR OR BROADCAST HERBICIDE APPLICATIONS MAY BE REQUIRED.
-FOR INVASIVE TREES, SHRUBS, AND VINES, MANAGEMENT MAY REQUIRE CUT-STEM HERBICIDE TREATMENTS.
-ALL INVASIVE SPECIES MANAGEMENT SHOULD BE CONDUCTED DURING THE SUMMER MONTHS WHILE THE TARGET PLANTS ARE ACTIVELY GROWING.
-TREATMENTS SHOULD BE CONDUCTED ACCORDING TO MAINTENANCE PLANS EACH YEAR AND SHOULD BE SEPARATED BY AT LEAST TWO WEEKS.
-HERBICIDE USE REPORTING WILL ADHERE TO ALL APPLICATOR LICENSING REQUIREMENTS.

TREE AND SHRUB INSTALLATION

-ALL PLANTS TO BE SPECIMEN GRADE, WELL BRANCHED, HEALTHY, FULL, PRE-INOCULATED, AND FERTILIZED. PLANTS SHALL BE FREE FROM DISEASE, PESTS, WOUNDS, AND SCARS. PLANTS SHALL BE FREE FROM NOTICEABLE GAPS, HOLES, OR DEFORMITIES. PLANTS SHALL BE FREE FROM BROKEN OR DEAD BRANCHES.
-TRUNKS WILL BE WRAPPED IF NECESSARY TO PREVENT SUN SCALD AND INSECT DAMAGE. THE LANDSCAPE CONTRACTOR SHALL REMOVE THE WRAP AT THE PROPER TIME AS PART OF THIS CONTRACT.
-THE OWNER'S REPRESENTATIVE MAY REJECT ANY PLANT MATERIALS THAT ARE DISEASED, DEFORMED, OR OTHERWISE NOT EXHIBITING SUPERIOR QUALITY.
-ALL NURSERY STOCK SHALL BE GUARANTEED, BY THE CONTRACTOR, FOR ONE YEAR FROM DATE OF FINAL INSPECTION. THE GUARANTEE BEGINS ON THE DATE OF THE LANDSCAPE ARCHITECT'S OR OWNER'S WRITTEN ACCEPTANCE OF THE INITIAL PLANTING. REPLACEMENT PLANT MATERIAL SHALL HAVE A ONE YEAR GUARANTEE COMMENCING UPON PLANTING.
-PLANTS ARE TO MEET AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2014 OR MOST CURRENT VERSION) REQUIREMENTS FOR SIZE AND TYPE SPECIFIED.
-PRUNE PLANTS AS NECESSARY PER STANDARD NURSERY PRACTICE AND TO CORRECT POOR BRANCHING OF EXISTING AND PROPOSED TREES.
-CONTRACTOR SHALL INSTALL SHREDDED HARDWOOD MULCH AT A 3" DEPTH TO ALL TREE AND SHRUB AREAS. TREES PLACED IN AREA COVERED BY TURF SHALL RECEIVE A 4' WIDE TREE RING WITH 3" DEPTH SHREDDED HARDWOOD MULCH.



NOTES:

1. APPLY CORRECTIVE PRUNING.
2. SET ROOT BALL OR CONTAINER ON UNEXCAVATED OR TAMPED SOIL. TOP OF ROOTBALL (CONTAINER) SHALL BE ONE INCH ABOVE SURROUNDING GRADE. FOR LARGER SHRUBS WITHIN PLANTING BED DIG A DEEPER PIT ONLY FOR THOSE SHRUBS.
3. REMOVE BURLAP FROM TOP HALF THE LENGTH OF ROOTBALL. TWINE AND (IF USED) SYNTHETIC MATERIAL SHALL BE REMOVED FROM PLANTING BED. FOR CONTAINER GROWN SHRUBS, REMOVE CONTAINER AND LOOSEN ROOTS PRIOR TO INSTALLATION.
4. REMOVE OR CORRECT GIRDLING ROOTS.
5. PLUMB AND BACKFILL WITH AMENDED SOIL PER LANDSCAPE NOTES. WATER THOROUGHLY WITHIN TWO HOURS.
6. APPLY MULCH IN EVEN LAYER, KEEPING AWAY FROM ROOT FLARE. MULCH LIMITS FOR SHRUBS EXTEND TO ALL LIMITS OF PLANTING BED, SEE PLANS FOR BED LAYOUTS.

2 SHRUB PLANTING
NTS

No.	REVISIONS	DATE
1	REVISION 1	02-27-2024

TurningPoint Energy

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KHA PROJECT 268173044
DATE
SCALE AS SHOWN
DESIGNED BY MRK
DRAWN BY DE
CHECKED BY AH

MAINTENANCE AND MONITORING PLAN

TPE IL KE240, LLC
KENDALL COUNTY, IL

SHEET NUMBER
LA-2

MEMORANDUM

To:	Michelle Carpenter *TPE IL KE240, LLC*
From:	Ashley Payne Keller Leet-Otley *Kimley-Horn and Associates, Inc.*
Date:	February 19, 2024
Subject:	*Oswego Township, Kendall County, Illinois – KE240 Level 1 Wetland Delineation Memorandum*

INTRODUCTION

Kimley-Horn was contracted by TPE IL KE240, LLC to review the KE240 Solar project study area for potential wetlands and waterways. See Figure 1 for project location and Figure 2 for the study area boundary. The study area is located in Oswego Township, Kendall County, Illinois. The study area is approximately 73 acres in size and is located in Section 26 of Township 37N, Range 8E. Kimley-Horn reviewed available background data to assist in determining if there are any potential wetlands and waterways for 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 Oswego, Illinois 7.5-minute topographic quadrangle depicted the study area as undeveloped land. The USGS topographic map is presented on Figure 3.

National Wetlands Inventory (NWI)

Based on a review of the U.S. Fish and Wildlife Service (USFWS) NWI,[1] no wetland features are present within the study area. NWI-mapped features in the vicinity of the study area are presented on Figure 4.

USGS National Hydrography Dataset (NHD)

Based on a review of the USGS NHD,[2] no NHD-mapped resources are depicted within the study area. NHD-mapped resources in the vicinity of the study area are presented on Figure 4.

[1] USFWS. 2023. National Wetlands Inventory. Vector Digital Data. Published October 2023.
[2] USGS. 2023. National Hydrography Dataset. Vector Digital Data. Published May 2023.

2-ft Contours

Two-foot contours[3] were reviewed to determine if any wetland areas or drainage swales may be present on the study area. The study area generally slopes down from a local high point along the western boundary toward the southeast and northeast. The study area ranges in elevation from 698 to 742 feet above sea level. The 2-foot contours are presented on Figure 5.

Kendall County Soil Survey

A review of the Kendall County soil survey via the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS)[4] identified seven soil types within the study area. Approximately 31 percent of the study area is mapped with a predominantly hydric soils rating of 100 percent. Approximately 36 percent of the study area is mapped with a hydric soil rating at or below 8 percent. The remainder of the study area is mapped with a non-hydric 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[5] was completed. No IDNR Public Waters are located within the project vicinity.

FEMA Floodplain

The Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) Viewer[6] was reviewed to determine if FEMA 100-year floodplains are located within the study area. Based on Panel 17093C0070G (effective February 4, 2009), the study area is not located within a FEMA 100-year floodplain. The FEMA floodplain data are presented on Figure 7.

Previous Study Area Disturbance

Historic aerials from 1994 to 2022 were reviewed to determine previous land use and disturbance on the study area and are presented in Attachment A. Five wetlands, one linear drainage feature, and one waterway feature were visible on the reviewed historic aerials, see comments in Table 1. The study area has been used for agricultural purposes since at least 1994.

Table 1. Project Study Area Historic Aerial Review

Year	Land Use	3-month Antecedent Precipitation Conditions	Comments
1994	Agricultural	Normal	Study area consists of a cropped agricultural field. Areas of saturation are visible in the southern and southeastern portions of the study area.
2002	Agricultural	Normal	Study area consists of cropped agricultural field. Areas of saturation are present in the southwestern, southern, and northeastern portions of the study area.

[3] USGS. 2016. USGS 3 Meter DEM Panels. Published August 2016.
[4] USDA NRCS. 2024. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/
[5] IDNR. 2024. Illinois Public Waters. Available online at https://idnr.maps.arcgis.com/apps/webappviewer/index.html?id=b64decfb69504164a46badb2841ebb11
[6] USGS. FEMA National Flood Hazard Layer Viewer. Available online at https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd

Year	Land Use	3-month Antecedent Precipitation Conditions	Comments
2005	Agricultural	Wetter than Normal	Same comment as above.
2007	Agricultural	Drier than Normal	Study area consists of cropped agricultural field. Three non-cropped areas are present in the northwestern portion of the study area. One area of crop stress is visible in the southwestern corner of the study area.
2009	Agricultural	Normal	Same comment as above.
2011	Agricultural	Normal	Study area consists of cropped agricultural field. Three non-cropped areas are present in the northwestern portion of the study area. Three areas of crop stress are visible along the western boundary of the study area.
2013	Agricultural	Normal	Study area consists of cropped agricultural field. No streams or wet areas located in study area.
2015	Agricultural	Normal	Study area consists of cropped agricultural field. One non-cropped linear feature is present in the northern portion of the study area.
2017	Agricultural	Wetter than Normal	Study area consists of cropped agricultural field. Three areas of saturation are visible in the southern, southeastern, and northeastern portions of the study area.
2019	Agricultural	Wetter than Normal	Study area consists of cropped agricultural field. One non-cropped linear feature is present in the northern portion of the study area. One area of crop stress is visible along the western boundary of the study area,
2021	Agricultural	Drier than Normal	Study area consists of cropped agricultural field. One non-cropped linear feature is present in the northern portion of the study area. Three areas of crop stress are visible along the western boundary of the study area.
2022	Agricultural	Normal	Same comment as above.

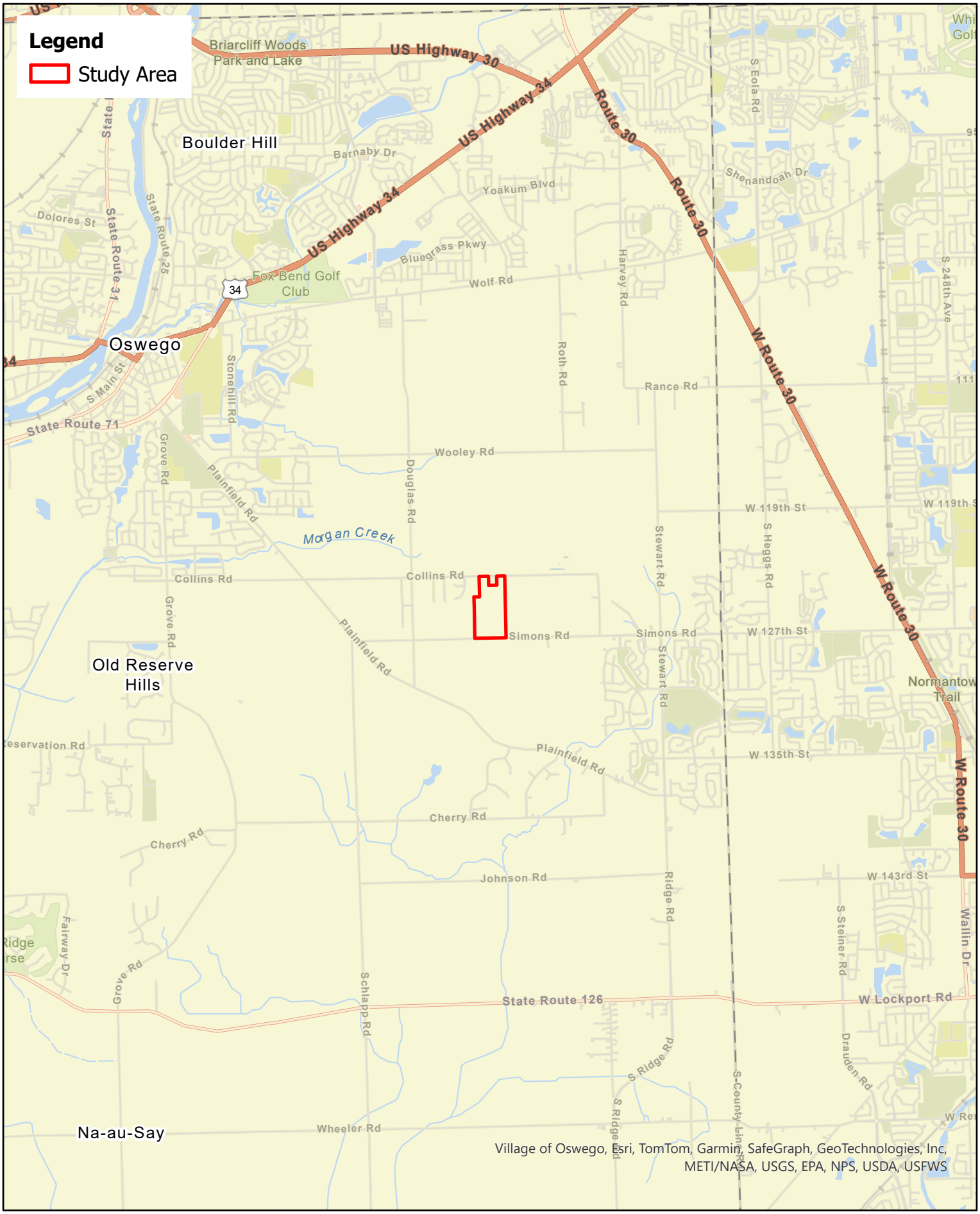
One potential waterway feature, one potential linear drainage feature, and five areas of continued stunted or stressed vegetation were visible on the reviewed historic aerials.

CONCLUSIONS AND RECOMMENDATIONS:

Based on the Level 1 Wetland Delineation, Kimley-Horn identified one potential waterway feature, one potential linear drainage feature, and five potential wetland features within the study area (see

Figure 8). A level 2 (field) wetland delineation is recommended to confirm the extents of wetlands and waterways within the project study area.

Figures



Kimley»Horn

Figure 1. Project Location Map
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 150 300 US Feet

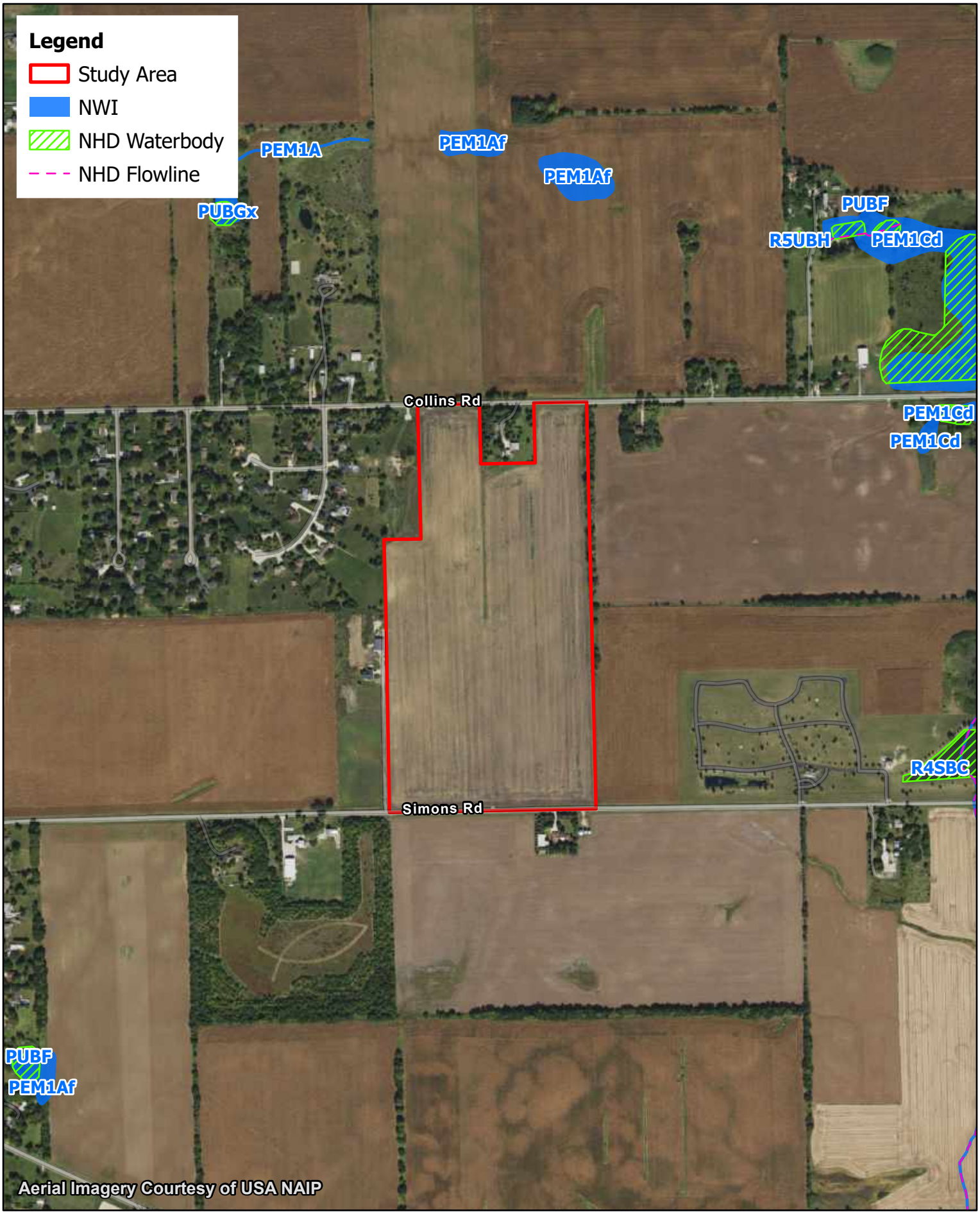
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Figure 2. Study Area Boundary Map
Oswego Township, Kendall County
TPE IL KE240, LLC



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Figure 3. USGS Topographic Map
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 400 800 US Feet

N

Figure 4. NWI and NHD Map
Oswego Township, Kendall County
TPE IL KE240, LLC

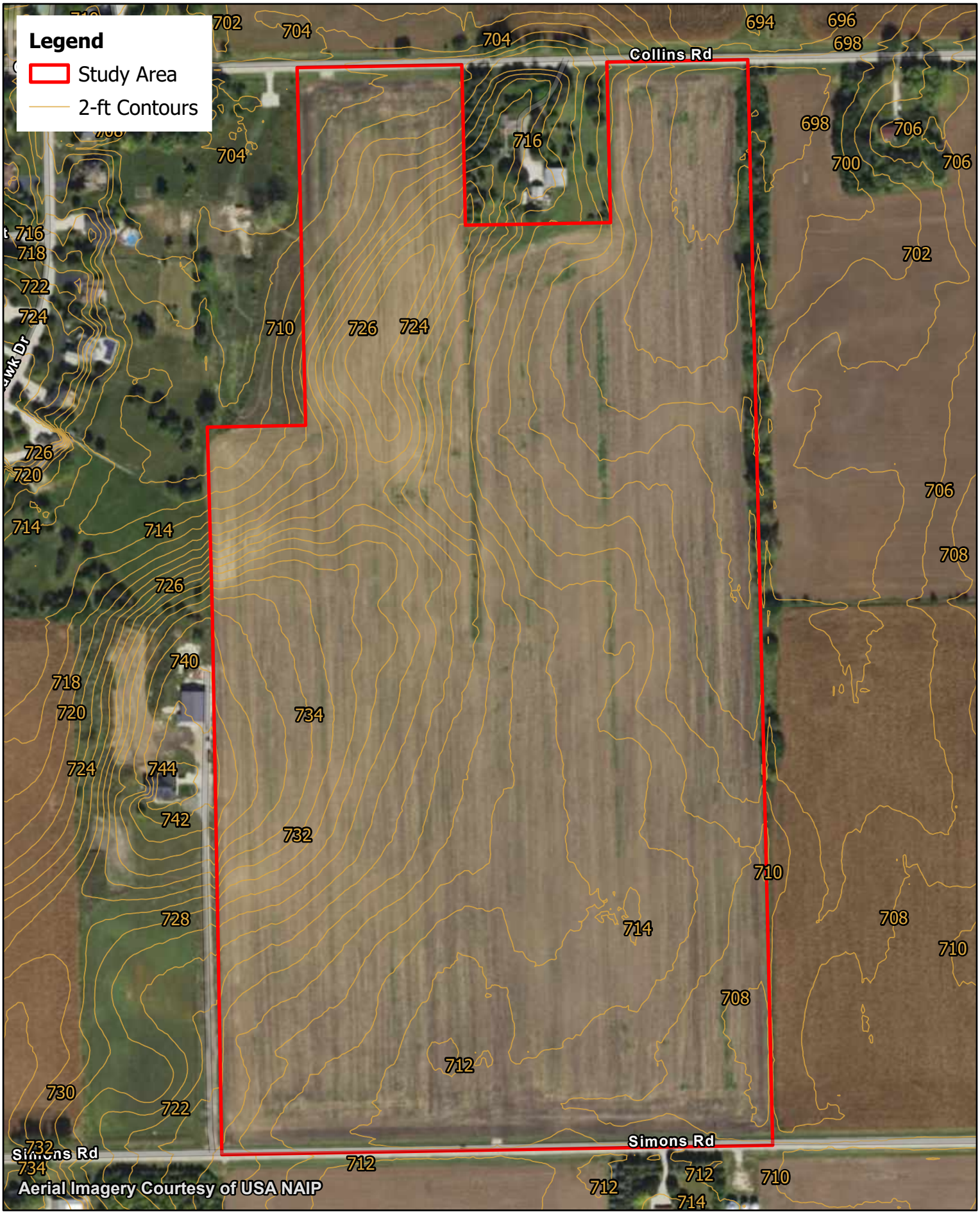
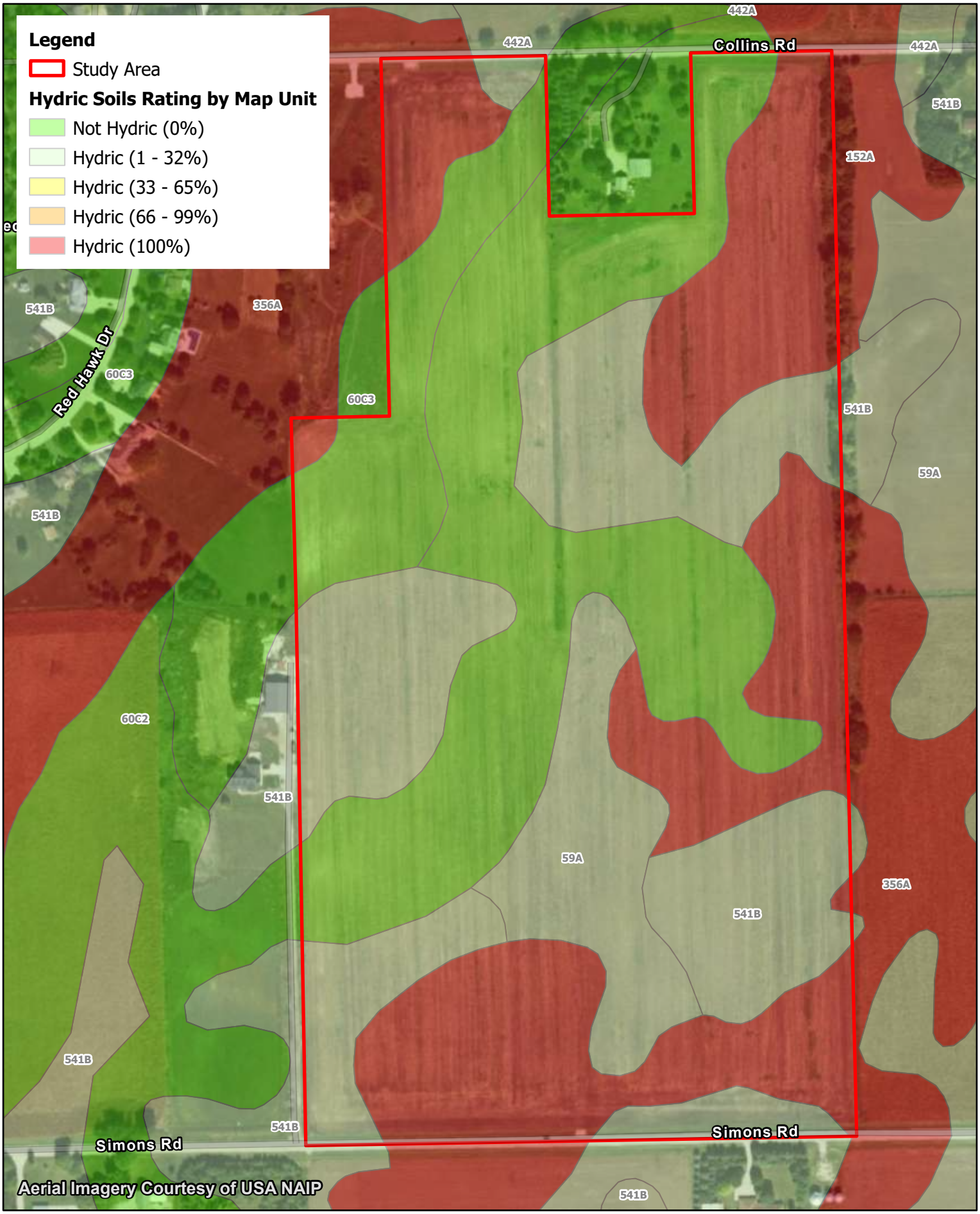


Figure 5. 2-ft Contours Map
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

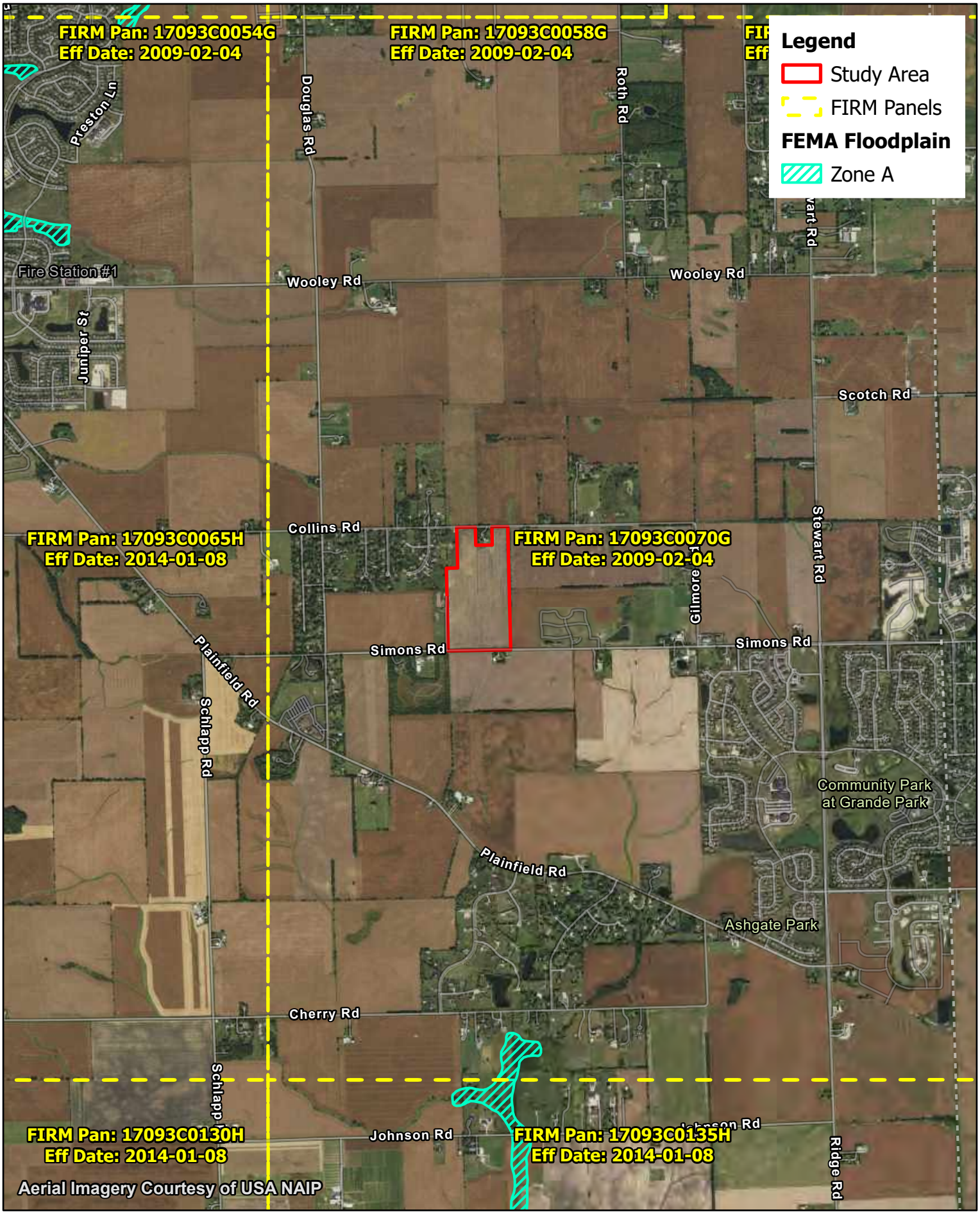
0 150 300 US Feet

N

Figure 6. Hydric Soils Map
Oswego Township, Kendall County
TPE IL KE240, LLC

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	7.2	9.8%
60C2	La Rose silt loam, 5 to 10 percent slopes, eroded	0	18.9	25.8%
60C3	La Rose clay loam, 5 to 10 percent slopes, severely eroded	0	5.4	7.4%
152A	Drummer silty clay loam, 0 to 2 percent slopes	100	6.2	8.5%
356A	Elpaso silty clay loam, 0 to 2 percent slopes	100	16.7	22.8%
442A	Mundelein silt loam, 0 to 2 percent slopes	6	0.4	0.5%
541B	Graymont silt loam, 2 to 5 percent slopes	5	18.4	25.1%
Totals for Area of Interest			**73.2**	**100.0%**



Kimley»Horn

0 0.25 0.5 Miles

N

Figure 7. FEMA Floodplain Map
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 150 300 US Feet

N

Figure 8. Delineation Summary Map
Oswego Township, Kendall County
TPE IL KE240, LLC

ATTACHMENT A

Historic Aerials



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (March 1994)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (February 2002)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (April 2005)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (June 2007)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (June 2009)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (September 2011)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (April 2013)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (April 2015)
Oswego Township, Kendall County
TPE IL KE240, LLC

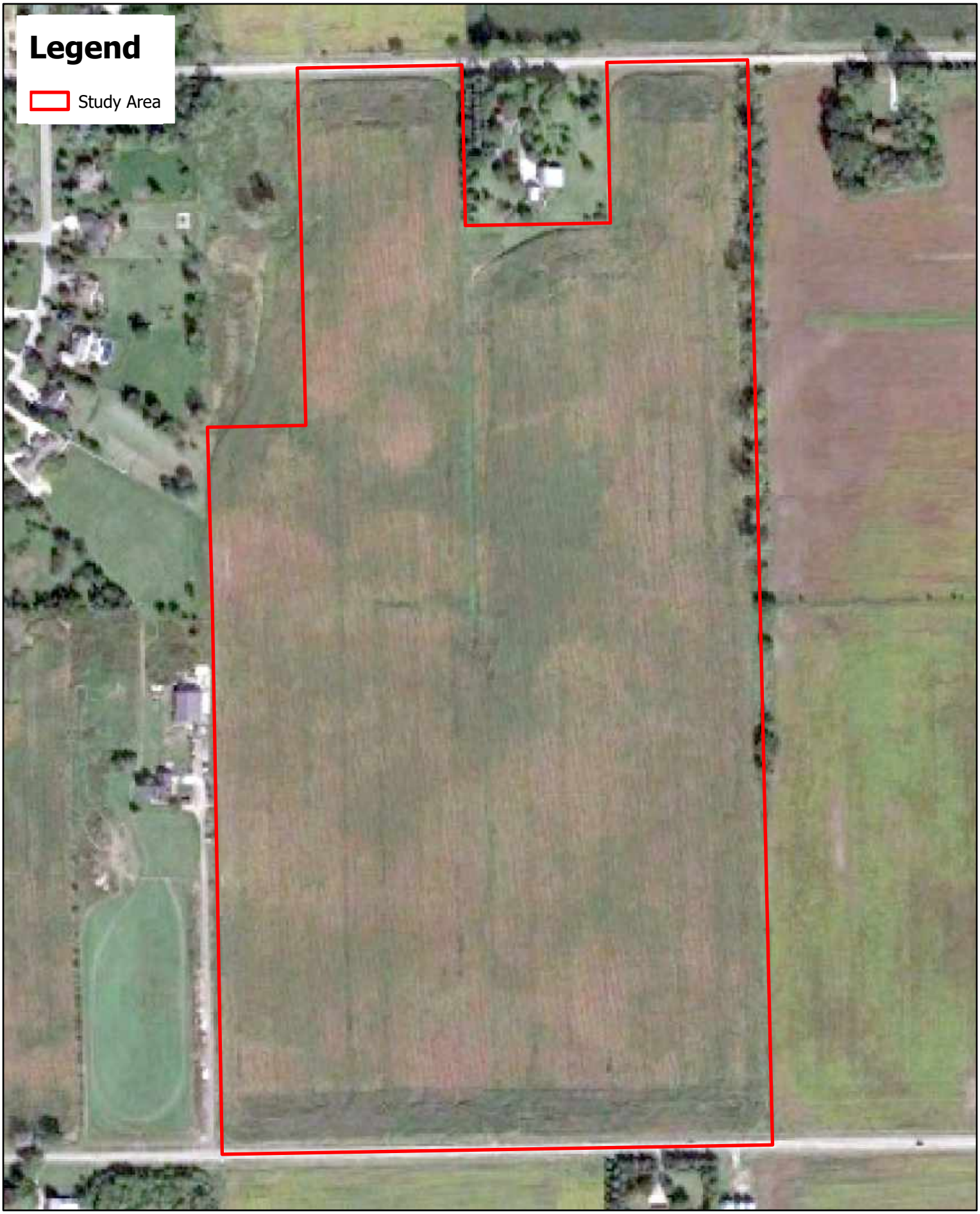


Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (April 2017)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (October 2019)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (May 2021)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

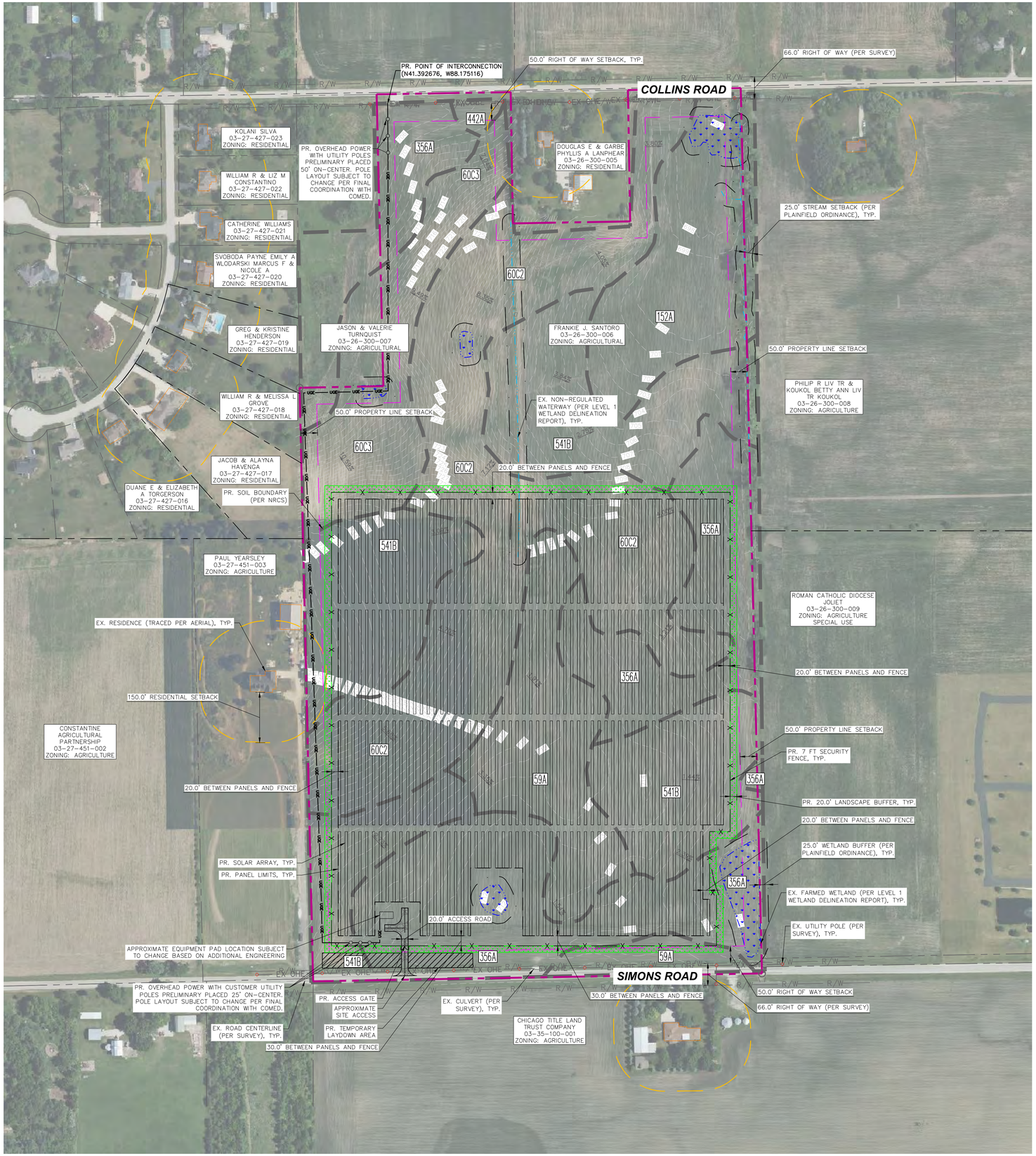
0 250 500 US Feet

N

Historic Aerial (July 2022)
Oswego Township, Kendall County
TPE IL KE240, LLC

ATTACHMENT B

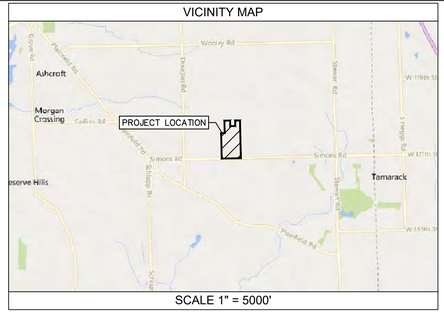
Site Plan





GRAPHIC SCALE IN FEET
0 75 150 300

VICINITY MAP



SCALE 1" = 5000'

LEGEND

ROAD LABEL	N 2200TH ST
PROPERTY LINE / PROJECT BOUNDARY	
ADJACENT PROPERTY LINE (PER SURVEY)	
ADJACENT PROPERTY LINE (TRACED PER GIS)	
RIGHT OF WAY	R/W
SETBACK	
RESIDENTIAL DWELLING SETBACK	
EX. RESIDENCE/STRUCTURE	
EX. CONTOUR	XXX
EX. OVERHEAD ELECTRIC	EX OHE
EX. UTILITY POLE	
EX. ROAD CENTERLINE	
EX. FARMED WETLAND (PER LEVEL 1 DELINEATION BY KIMLEY-HORN)	
EX. WETLAND BUFFER (PER THE CITY PLAINFIELD CODE OF ORDINANCES 4-10-6-8)	
EX. NON REGULATED WATERWAY (PER LEVEL 1 DELINEATION BY KIMLEY-HORN)	
EX. CULVERT	
EX. FLOW (DIRECTION AND SLOPE)	XX%
PR. SECURITY FENCE	X
PR. GATE	
PR. TEMPORARY LAYDOWN AREA	
PR. ACCESS ROAD	
PR. LANDSCAPE BUFFER	
PR. UNDERGROUND ELECTRIC	UGE UGE
PR. OVERHEAD ELECTRIC	OHW
PR. UTILITY POLE	
PR. EQUIPMENT PAD	
PR. SOLAR ARRAY	
PR. PANEL LIMITS	
SOIL BOUNDARY	

SITE DATA TABLE

PIN #	03-26-300-006
PROPERTY OWNER	FRANKIE J. SANTORO
SITE ADDRESS	SIMONS RD, OSEWEGO, IL 60543
LEGAL DESCRIPTION	SEC 26-37-8
ZONING JURISDICTION	KENDALL COUNTY
ZONING	A1 - AGRICULTURAL
CURRENT LAND USE	AGRICULTURAL FIELD
PROPOSED USE	COMMERCIAL SOLAR FIELD
TOTAL PARCEL AREA	73.07 ± AC
PRELIMINARY DISTURBED AREA	37.84 ± AC
PRELIMINARY SOLAR AREA	32.95 ± AC
RIGHT OF WAY SETBACK	50'
PROPERTY LINE SETBACK	50'
RESIDENTIAL SETBACK	150'

*ZONING SITE PLAN IS BEING SUBMITTED FOR SPECIAL USE PERMIT TO CONSTRUCT/OPERATE A SOLAR FARM

NOTES

1. THE PURPOSE OF THIS PLAN IS FOR SPECIAL USE PERMIT REVIEW AND APPROVAL BY KENDALL COUNTY TO CONSTRUCT A COMMERCIAL SOLAR FARM.
2. THIS PLAN WAS PRODUCED UTILIZING GIS RESOURCES, A PLAT OF SURVEY PREPARED BY LWS DATED 11/29/2023, AND INFORMATION FROM MULTIPLE SOURCES, INCLUDING KENDALL COUNTY GIS, GOOGLE EARTH, AND USGS TOPOGRAPHIC INFORMATION.
3. SUBJECT PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AS SHOWN ON THE FLOOD INSURANCE RATE MAP (COMMUNITY PANEL 17093C0070G) PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).
4. THE LOCATIONS OF PROPOSED IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO: FENCING, SOLAR ARRAY RACKING, INVERTER/TRANSFORMER PADS, OVERHEAD POLES AND LINES, ETC., SHOWN ARE APPROXIMATE AND ARE SUBJECT TO MODIFICATION DUE TO SITE CONDITIONS, ADDITIONAL PERMITTING REQUIREMENTS, EQUIPMENT SPECIFICATIONS, AND/OR OTHER CONSTRAINTS DURING FINAL ENGINEERING.
5. PROJECT AREA, INCLUDING CONSTRUCTION STAGING AREAS, WILL BE CLEARED AND GRUBBED AS NECESSARY, RETAINING PRE-DEVELOPMENT DRAINAGE PATTERNS TO THE BEST EXTENT POSSIBLE. CONSTRUCTION STAGING AND AREAS SUBJECT TO RUTTING DURING CONSTRUCTION WILL BE TEMPORARILY STABILIZED WITH GRAVEL. SOIL CONDITIONS AND EQUIPMENT LOADS WILL DETERMINE FINAL DESIGN.
6. ALL DIMENSIONS SHOWN ARE AT 90 DEGREES UNLESS OTHERWISE NOTED.
7. CONTRACTOR SHALL CALL AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. ADDITIONALLY, CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES.
8. CONTRACTOR SHALL MAINTAIN ACCESS AND UTILITY SERVICES TO ANY REMAINING BUILDING(S) OR ADJACENT BUILDING(S) THROUGHOUT THE DEMOLITION AND CONSTRUCTION PHASES. EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED/RESTORED TO THE SATISFACTION OF THE OWNER BY THE CONTRACTOR RESPONSIBLE FOR THE DAMAGE.
9. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE SIGNS, BARRICADES, WARNING LIGHTS, GUARD RAILS, AND EMPLOY FLAGGERS AS NECESSARY WHEN CONSTRUCTION ENDANGERS EITHER VEHICULAR OR PEDESTRIAN TRAFFIC. THESE DEVICES SHALL REMAIN IN PLACE UNTIL THE TRAFFIC MAY PROCEED NORMALLY AGAIN.
10. SITE WILL HAVE NO DEDICATIONS FOR OPEN SPACE, NATURAL AREA, HISTORIC BUILDING(S)/STRUCTURE(S), OR STORMWATER MANAGEMENT FACILITIES.
11. SITE WILL NOT INCLUDE WATER SOURCE OR SEWAGE DISPOSAL. APPROXIMATE LOCATION OF EXISTING WATER WELL LOCATIONS SHOWN PER THE ILLINOIS WATER WELL INTERACTIVE MAP ONLINE.
12. STORMWATER MANAGEMENT FACILITIES TO BE PROVIDED AS REQUIRED BY COUNTY AND/OR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITTING. REQUIREMENTS TO BE DETERMINED DURING FINAL ENGINEERING.
13. THE MAXIMUM HEIGHTS OF ANY SOLAR PANEL SHALL NOT EXCEED 20 FEET.
14. SOLAR PANELS WILL BE DESIGNED WITH ANTI-REFLECTIVE COATING TO MINIMIZE GLARE.
15. COLLECTION LINES WITHIN THE SOLAR FARM WILL BE LOCATED AND MAINTAINED UNDERGROUND.
16. THERE SHALL BE NO EXTERIOR LIGHTING.
17. SETBACKS SHOWN ON THIS PLAN ARE BASED ON KENDALL COUNTY CODE OF ORDINANCES, SECTION 7:00.D.17.
18. ALL NECESSARY PERMITS FOR SOIL EROSION CONTROL AND DRIVEWAY CONSTRUCTION WILL BE OBTAINED AS PART OF FINAL ENGINEERING AND PRIOR TO CONSTRUCTION.
19. LEVEL 1 WETLAND DELINEATION PERFORMED BY KIMLEY-HORN DATED 02/13/2024.
20. THE WETLAND BUFFER WAS DETERMINED BASED ON THE PLAINFIELD CODE OF ORDINANCES SECTION 4-10-6-8. STATES THAT THERE NEEDS TO BE A NATURAL VEGETATION STRIP OF AT LEAST 25 FEET. PER SECTION 400, WILL NEED A SITE DEVELOPMENT PERMIT.

SOILS DATA TABLE

MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC SOIL GROUP
59A	LISBON SILT LOAM, 0 TO 2 PERCENT SLOPES	C/D
60C2	LA ROSE SILT LOAM, 5 TO 10 PERCENT SLOPES	C
60C3	LA ROSE CLAY LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED	C
152A	DRUMMER SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES	B/D
356A	ELPASO SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES	B/D
442A	MUNDELEIN SILT LOAM, 0 TO 2 PERCENT SLOPES	B/D
541B	GRAYMONT SILT LOAM, 2 TO 5 PERCENT SLOPES	C

No.	REVISIONS	DATE
1	REVISION 1	03/28/2024

TurningPoint Energy

Kimley»Horn
© 2024 KIMLEY-HORN AND ASSOCIATES, INC.
10 EAST DOTY STREET, SUITE 800
MADISON, WI 53703 (608) 251-0407
WWW.KIMLEY-HORN.COM

KHA PROJECT 268173044
DATE 02/19/2024
SCALE AS SHOWN
DESIGNED BY MRK
DRAWN BY DE
CHECKED BY AH

ZONING SITE PLAN

TPE IL KE240, LLC

KENDALL COUNTY, IL

SHEET NUMBER
Z1.0

MEMORANDUM

To:	Michelle Carpenter *TPE IL KE240, LLC* Ashley Payne
From:	Keller Leet-Otley *Kimley-Horn and Associates, Inc.*
Date:	February 19, 2024
Subject:	*Oswego Township, Kendall County, Illinois – KE240 Environmental Constraints Memorandum*

INTRODUCTION

Kimley-Horn was contracted by TPE IL KE240, LLC to review the KE240 Solar project study area for potential environmental constraints. See Figure 1 for project location and Figure 2 for the study area boundary. The study area is located in Oswego Township, Kendall County, Illinois. The study area is approximately 73 acres in size and is located in Section 26 of Township 37N, Range 8E. Kimley-Horn reviewed available background data to assist in determining if there are any potential environmental constraints for the study area.

ENVIRONMENTAL CONSTRAINTS:

Level 1 (Desktop) Wetland Delineation

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) Topographic Map

A review of the Oswego, Illinois 7.5-minute topographic quadrangle depicted the study area as undeveloped land. The USGS topographic map is presented on Figure 3.

National Wetlands Inventory (NWI)

Based on a review of the U.S. Fish and Wildlife Service (USFWS) NWI,[1] no wetland features are present within the study area. NWI-mapped features in the vicinity of the study area are presented on Figure 4.

USGS National Hydrography Dataset (NHD)

Based on a review of the USGS NHD,[2] no NHD-mapped resources are depicted within the study area. NHD-mapped resources in the vicinity of the study area are presented on Figure 4.

[1] USFWS. 2023. National Wetlands Inventory. Vector Digital Data. Published October 2023.
[2] USGS. 2023. National Hydrography Dataset. Vector Digital Data. Published May 2023.

2-ft Contours

Two-foot contours[3] were reviewed to determine if any wetland areas or drainage swales may be present on the study area. The study area generally slopes down from a local high point along the western boundary toward the southeast and northeast. The study area ranges in elevation from 698 to 742 feet above sea level. The 2-foot contours are presented on Figure 5.

Kendall County Soil Survey

A review of the Kendall County soil survey via the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS)[4] identified seven soil types within the study area. Approximately 31 percent of the study area is mapped with a predominantly hydric soils rating of 100 percent. Approximately 36 percent of the study area is mapped with a hydric soil rating at or below 8 percent. The remainder of the study area is mapped with a non-hydric 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[5] was completed. No IDNR Public Waters are located within the project vicinity.

FEMA Floodplain

The Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) Viewer[6] was reviewed to determine if FEMA 100-year floodplains are located within the study area. Based on Panel 17093C0070G (effective February 4, 2009), the study area is not located within a FEMA 100-year floodplain. The FEMA floodplain data are presented on Figure 7.

Previous Study Area Disturbance

Historic aerials from 1994 to 2022 were reviewed to determine previous land use and disturbance on the study area and are presented in Attachment A. Five wetlands, one linear drainage feature, and one waterway feature were visible on the reviewed historic aerials, see comments in Table 1. The study area has been used for agricultural purposes since at least 1994.

Table 1. Study Area Historic Aerial Review

Year	Land Use	3-month Antecedent Precipitation Conditions	Comments
1994	Agricultural	Normal	Study area consists of a cropped agricultural field. Areas of saturation are visible in the southern and southeastern portions of the study area.
2002	Agricultural	Normal	Study area consists primarily of a cropped agricultural field. Areas of saturation are visible in the southwestern, southern, and northeastern portions of the study area.

[3] USGS. 2016. USGS 3 Meter DEM Panels. Published August 2016.
[4] USDA NRCS. 2024. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/
[5] IDNR. 2024. Illinois Public Waters. Available online at https://idnr.maps.arcgis.com/apps/webappviewer/index.html?id=b64decfb69504164a46badb2841ebb11
[6] USGS. FEMA National Flood Hazard Layer Viewer. Available online at https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd

Year	Land Use	3-month Antecedent Precipitation Conditions	Comments
2005	Agricultural	Wetter than Normal	Same comment as above.
2007	Agricultural	Drier than Normal	Study area consists of a cropped agricultural field. Three non-cropped areas are visible in the northwestern portion of the study area. One area of crop stress is visible in the southwestern corner of the study area.
2009	Agricultural	Normal	Same comment as above.
2011	Agricultural	Normal	Study area consists of a cropped agricultural field. Three non-cropped areas are visible in the northwestern portion of the study area. Three areas of crop stress are visible along the western boundary of the study area.
2013	Agricultural	Normal	Study area consists of a cropped agricultural field. No wet areas or potential streams are visible.
2015	Agricultural	Normal	Study area consists of a cropped agricultural field. One non-cropped linear feature is visible in the northern portion of the study area.
2017	Agricultural	Wetter than Normal	Study area consists of a cropped agricultural field. Three areas of saturation are visible in the southern, southeastern, and northeastern portions of the study area.
2019	Agricultural	Wetter than Normal	Study area consists of a cropped agricultural field. One non-cropped linear feature is visible in the northern portion of the study area. One area of crop stress is visible along the western boundary of the study area.
2021	Agricultural	Drier than Normal	Study area consists of a cropped agricultural field. One non-cropped linear feature is visible in the northern portion of the study area. Three areas of crop stress are visible along the western boundary of the study area.
2022	Agricultural	Normal	Same comment as above.

Desktop Wetlands Assessment

Based on the Level 1 Wetland Delineation, Kimley-Horn identified Kimley-Horn identified one potential waterway feature, one potential linear drainage feature, and five potential wetland features within the study area (see Figure 8). A Level 2 (Field) wetland delineation is recommended to confirm the extents of wetlands and waterways within the study area.

USFWS Federally Listed Threatened and Endangered Species

Kimley-Horn conducted a preliminary review of the potential for federally listed threatened, endangered, and proposed species to occur within the study area or be affected by the proposed project for the purposes of due diligence in compliance with the Endangered Species Act (ESA). A list of the threatened, endangered, and proposed species, and designated critical habitat that could occur in Kendall County was obtained and evaluated from the USFWS Information for Planning and Consultation (IPaC) online planning tool. The resource list is not considered official USFWS correspondence for ESA consultation. Habitat descriptions for the identified species were compared to the habitat within or near the study area. The resource list obtained via the USFWS IPaC for the project identified five species that should be considered in an effects analysis. The resource list is included in Attachment B and the identified species are reviewed below in Table 2.

Table 2. USWFS Listed Threatened and Endangered Species

Species	Status	Preferred Habitat	Findings
Myotis sodalis (Indiana Bat)	Endangered	During summer, Indiana bats roost under loose bark or in hallows and cavities of mature trees in the floodplain forest or savanna habitats adjacent to riparian corridors. In winter, Indiana bats hibernate in caves and mines.	There is no critical habitat for the Indiana bat within the vicinity of the study area. Minimal suitable habitat may be present within the study area due to the presence of a forested corridor along the eastern portion of the study area. Any tree trimming or removal should be completed between October 1 and March 31.
Perimyotis subflavus (Tricolored Bat)	Proposed Endangered	During the spring, summer and fall, tricolored bats roost among leaf clusters of live or recently dead deciduous hardwood trees. They are also found in Spanish moss, pine trees, and human structures. In winter, tricolored bats hibernate in caves and mines.	No critical habitat has been designated for this species. Minimal suitable habitat may be present within the study area due to the presence of a forested corridor located along the eastern portion of the study area. Tree trimming or removal would not be restricted to a specific season; however, USFWS recommends tree clearing activities be conducted in the winter.
Grus americana (Whooping crane)	Experimental population, Non-essential	The whooping crane breeds, migrates, winters and forages in a variety of habitats, including coastal marshes and estuaries, inland marshes, lakes, open ponds, shallow bays, salt marsh and sand or tidal flats, upland swales, wet	No critical habitat has been designated for this species. Potential suitable habitat is likely present within the project study area; however due to the non-essential status of the species, no adverse impacts are anticipated.

Species	Status	Preferred Habitat	Findings
		meadows and rivers, pastures, and agricultural fields.	
Danaus plexippus (Monarch butterfly)	Candidate	The monarch butterfly requires grassland habitats where milkweed and flowers are present. North American populations of the monarch butterfly typically follow a seasonal migration pattern.	No critical habitat has been designated for this species. Minimal preferred habitat may appear within the study area. The area is primarily active farmland. No adverse impacts anticipated. To avoid potential impacts, reseeding with native seed mixes is recommended, although not required.
Platanthera leucophaea (Eastern Prairie Fringed Orchid)	Threatened	The eastern prairie fringed orchid occurs in a wide variety of habitats, from wet to mesic prairie, to wetland communities, including sedge meadow, fen, marsh and marsh edge. It can occupy a very wide moisture gradient of prairie and wetland vegetation. In general, the habitat is moist or moderately moist.	No critical habitat has been designated for this species. Minimal preferred habitat may appear within the study area. Wetlands may be within study area which are listed as habitat for the eastern prairie fringed orchid. The area is primarily active farmland. No adverse impacts are anticipated.

Migratory Birds

According to the IPaC resource list, 10 migratory species on the Birds of Conservation Concern (BCC) list have been identified within the study area. The BCC list was updated in 2021 by the USFWS and is an effort to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act."

The Migratory Bird Treaty Act (MBTA) makes it illegal for anyone to "take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to Federal regulations by the USFWS". Typically, if active nests of bird species protected by the MBTA are identified, the USFWS recommends avoiding tree clearing or nest removal until at least the peak of the nesting season (generally March through August) has passed or until the nest is abandoned.

The U.S. Department of the Interior, Office of the Solicitor, published a memorandum (M-37050) dated December 22, 2017 regarding the MBTA and how "incidental take" is viewed by the Department. The memorandum analyzes whether the MBTA prohibits the accidental or "incidental" taking or killing of migratory birds. "Incidental take" is take that results from an activity, but is not the purpose of that activity. In this memorandum, the Department of the Interior concluded that "the MBTA's prohibition on pursuing, hunting, taking, capturing, killing, or attempting to do the same applies only to direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or

capturing, to human control." Therefore, according to the Department of the Interior, the MBTA does not prohibit "incidental take." Courts have different opinions and decisions with respect to including or excluding "incidental take" when considering the prohibitions under the MBTA. In 2015, the Fifth Circuit in United States v. Citgo Petroleum Corp. issued an opinion that agreed with the Eighth and Ninth circuits that a taking is limited to deliberate acts done directly and intentionally to migratory birds. Therefore, the Fifth Circuit decided that the MBTA only prohibits intentional take and does not prohibit incidental take. This decision by the Fifth Circuit set precedent within the Fifth Circuit's jurisdiction.

On January 7, 2021, the USFWS published a final rule ("MBTA rule") defining the scope of the MBTA which excluded incidental take of migratory birds from being unlawful. This interpretation of the MBTA was effective as of March 8, 2021. On May 7, 2021, the USFWS proposed to revoke the January 7, 2021 final regulation and opened a public comment period which closed on June 7, 2021. On September 29, 2021, the U.S. Department of Interior announced a series of actions to unwind the most recent rulemaking in an effort "to ensure that the MBTA conserves birds today and into the future." On October 4, 2021, the USFWS published a final rule revoking the most recent rule enacted by the Trump Administration that limited the scope of the MBTA. According to the Federal Register, the final MBTA revocation rule went into effect on December 3, 2021.

In addition, on October 4, 2021, the USFWS published an Advanced Notice of Proposed Rulemaking announcing the intent to solicit public comments and information to help develop proposed regulations that would establish a permitting system to authorize the incidental take of migratory birds in certain circumstances. The USFWS issued a Director's Order establishing criteria for the types of conduct that will be a priority for enforcement activities with respect to incidental take of migratory birds.

It should be noted that the regulatory climate with respect to the MBTA is changing; however, it is our understanding that as of December 3, 2021 incidental take of migratory birds would be liable under the MBTA. This should be considered until a rulemaking process is complete. Kimley-Horn recommends evaluating the MBTA regulation prior to ground disturbance activities commencing.

Kimley-Horn downloaded the Trust Resources Report Migratory Bird List from the IPaC online planning tool. The IPaC results are included in Attachment B. Kimley-Horn conducted a preliminary desktop review of the potential for migratory bird habitat (focusing primarily on trees and shrubs) to occur on the proposed study area or be affected by the proposed study area for the purposes of due diligence in complying with the MBTA. The desktop review revealed the presence of minimal migratory bird habitat within the study area. It is our understanding that as of December 3, 2021, incidental take would be enforceable under the MBTA.

IDNR State Listed Threatened, Endangered, and Species of Special Concern

The IDNR identified no state listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the study area; therefore, the IDNR determined that adverse effects are unlikely. The IDNR Consultation Letter is included in Attachment B.

Historic Resources Database Review

Kimley-Horn reviewed the Illinois Inventory of Archaeological Sites (IIAS) database for known historic resources within the project vicinity. According to the IIAS database, there are no previously identified archaeological sites, archaeological surveys, or cemeteries within the study area (see Attachment C). Within 0.5 miles of the study area, there is one previously identified archaeological site, three archaeological surveys, and one area of archaeological resource potential. According to the Historic and Architectural Resources Geographic Information System (HARGIS), there are no previously

identified historic buildings within the study area boundary or within 0.5 miles of the study area (see Attachment C). Therefore, there are no known resources listed in or eligible for inclusion in the National Register of Historic Places within 0.5 miles of the study area. The results of the IIAS review are sensitive in nature and should not be shared publicly. The Illinois State Historic Preservation Office (SHPO) reviewed the study area and determined that the project is exempt pursuant to Section 6 of the Illinois State Agency Historic Resources Preservation Act and no archaeological surveys are required. SHPO has requested that the project provide photographs of all existing structures within 0.25 mile of the study area. The SHPO Consultation Letter is included in Attachment C.

CONCLUSIONS AND RECOMMENDATIONS:

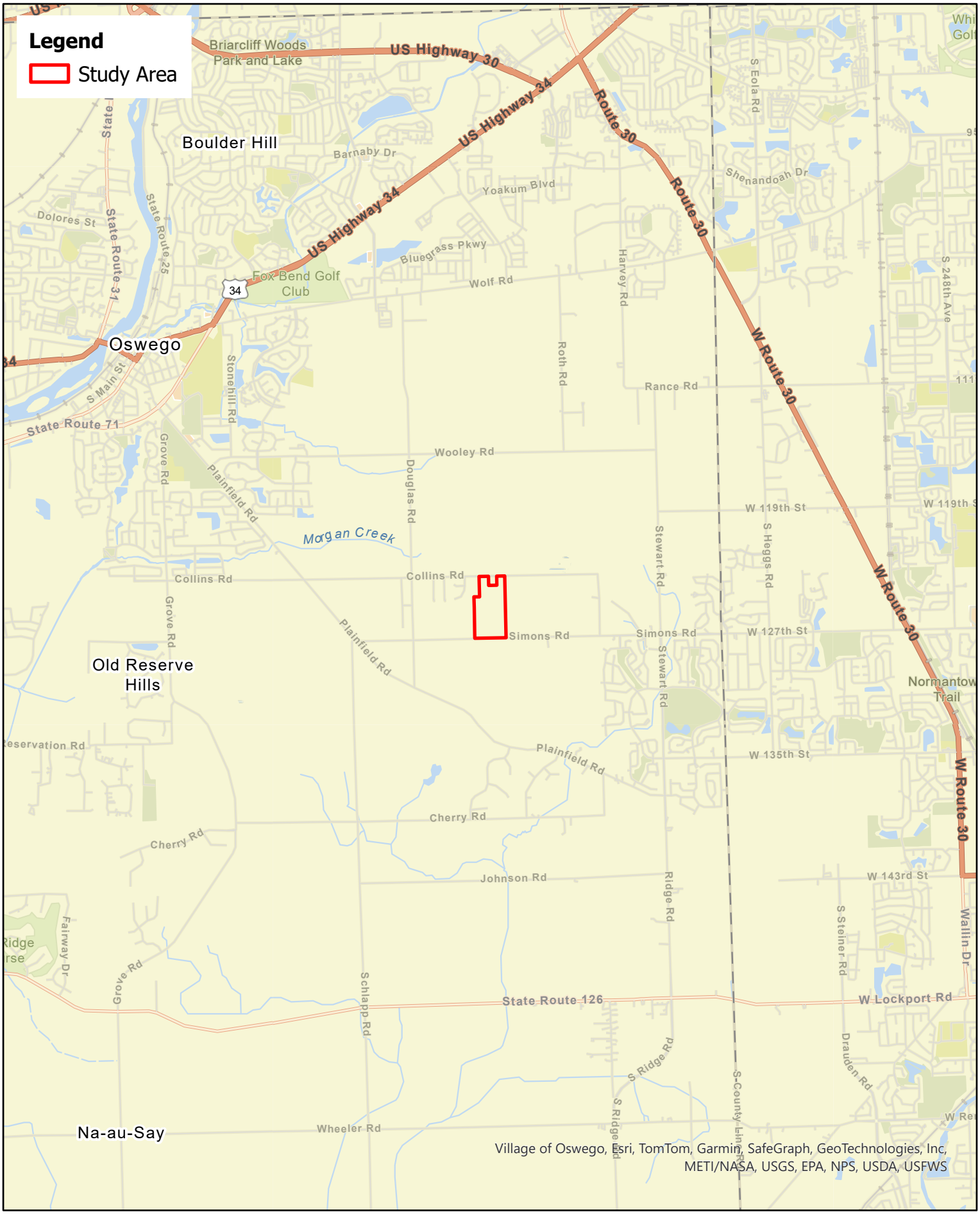
Based on the information reviewed, Kimley-Horn has identified potential environmental constraints that could require additional planning.

Based on the Level 1 (Desktop) wetland delineation, Kimley-Horn identified one potential waterway feature, one potential linear drainage feature, and five potential wetland features within the study area (see Figure 8). A Level 2 (Field) wetland delineation is recommended to determine the extents of wetlands and waterways within the study area.

Minimal suitable habitat for listed federal species may be present within the study area. If tree clearing or structure demolition is anticipated, it is recommended to be completed between October 1 and March 31, which is outside of the active bat season. The IDNR determined that adverse effects to state listed species or protected resources are unlikely.

No impacts to known IIAS-listed resources are anticipated. SHPO has determined that the project is exempt and no archaeological surveys are required; however, a site visit to document photographs of all structures within 0.25 mile of the study area will be required.

Figures



Kimley»Horn

Figure 1. Project Location Map
Oswego Township, Kendall County
TPE IL KE240, LLC

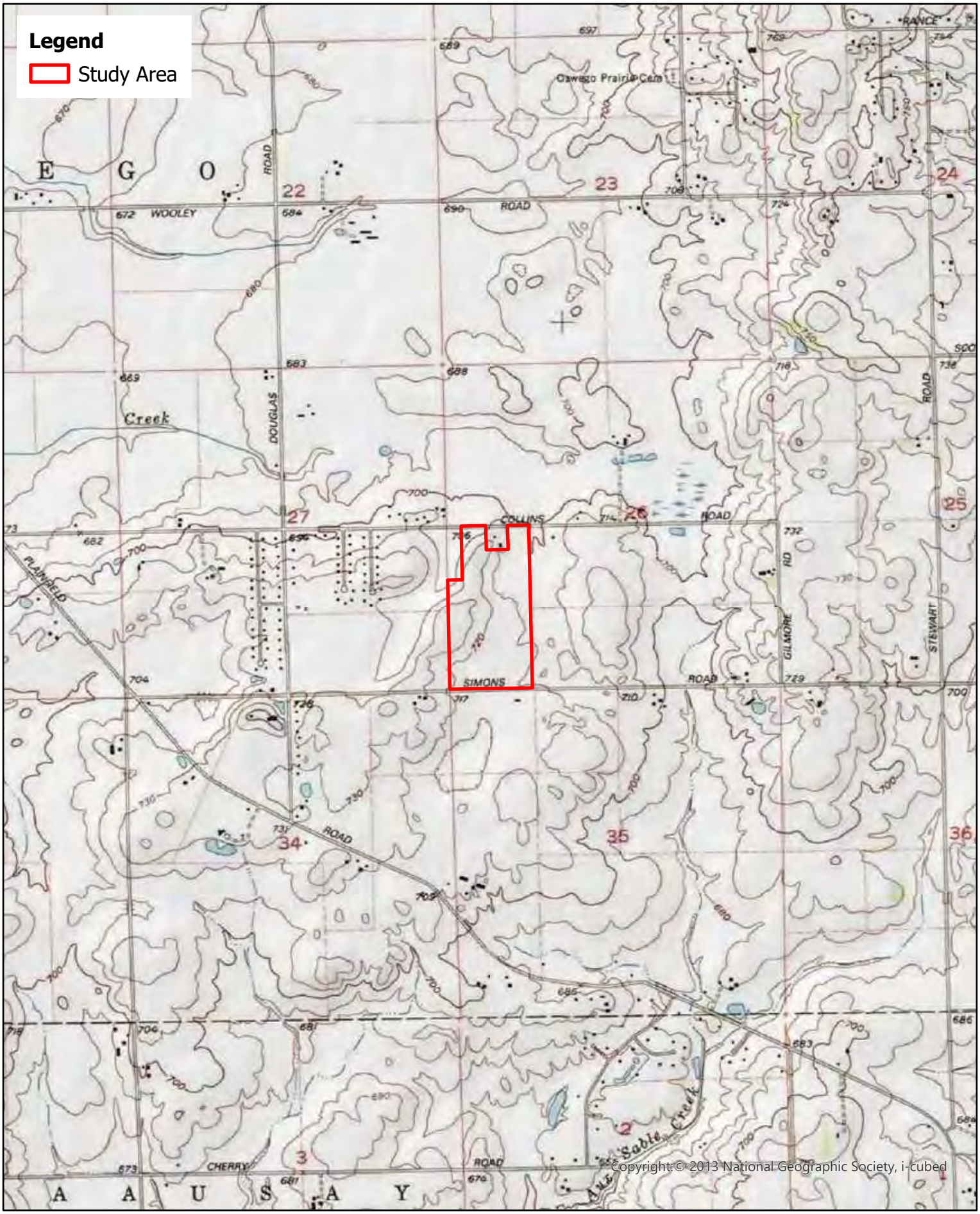


Kimley»Horn

0 150 300 US Feet

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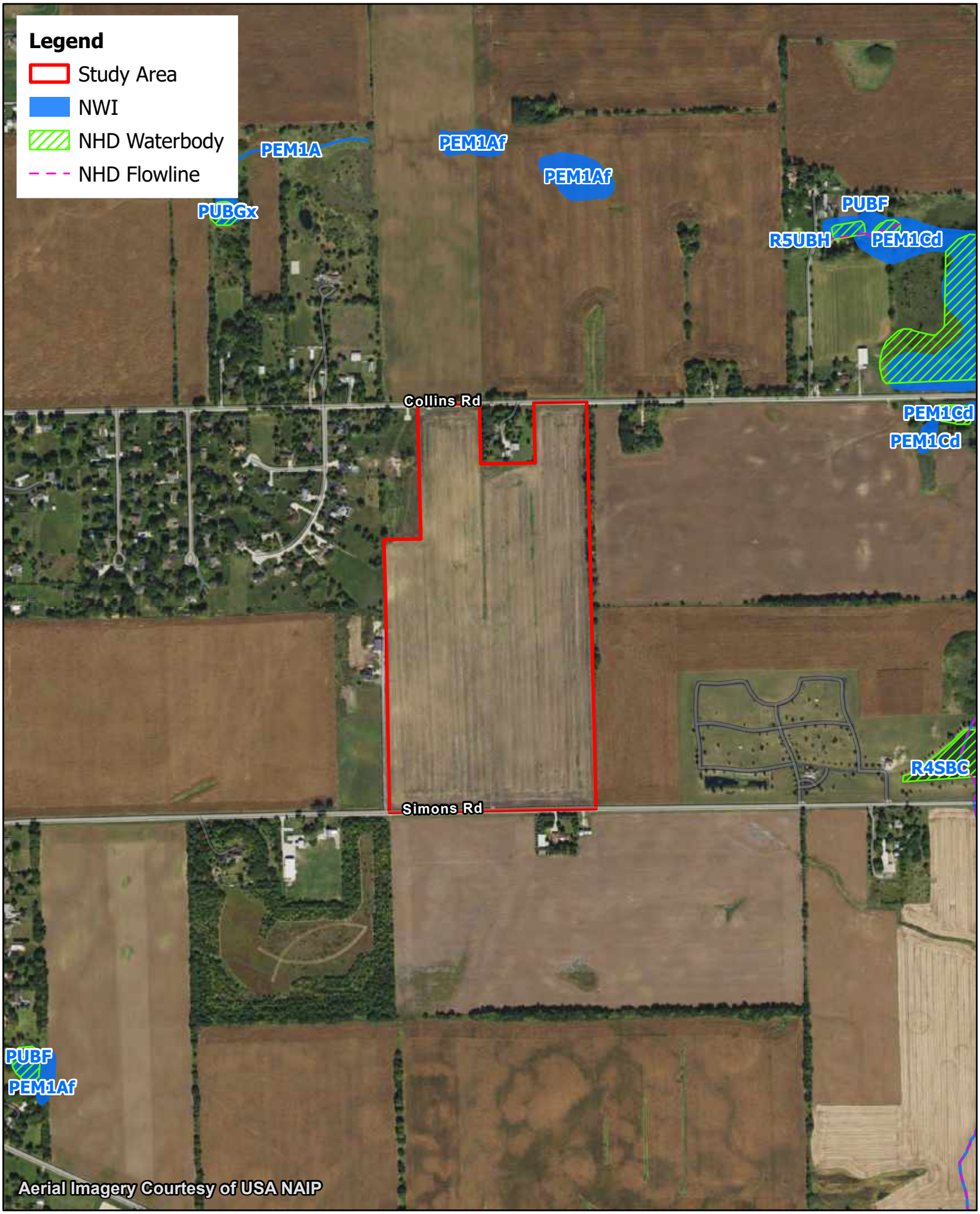
Figure 2. Study Area Boundary Map
Oswego Township, Kendall County
TPE IL KE240, LLC



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Kimley»Horn

Figure 3. USGS Topographic Map
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 400 800 US Feet

N

Figure 4. NWI and NHD Map
Oswego Township, Kendall County
TPE IL KE240, LLC

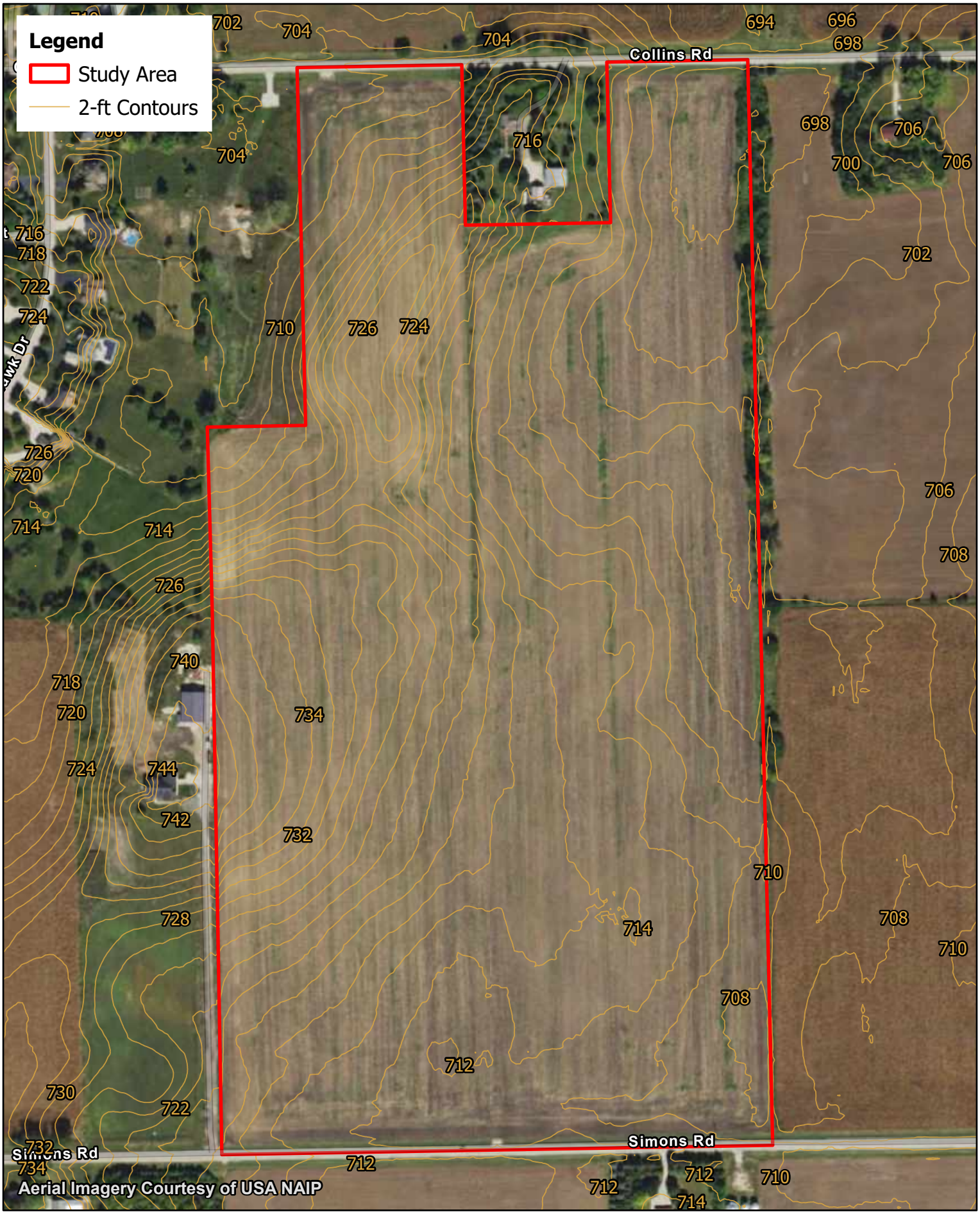
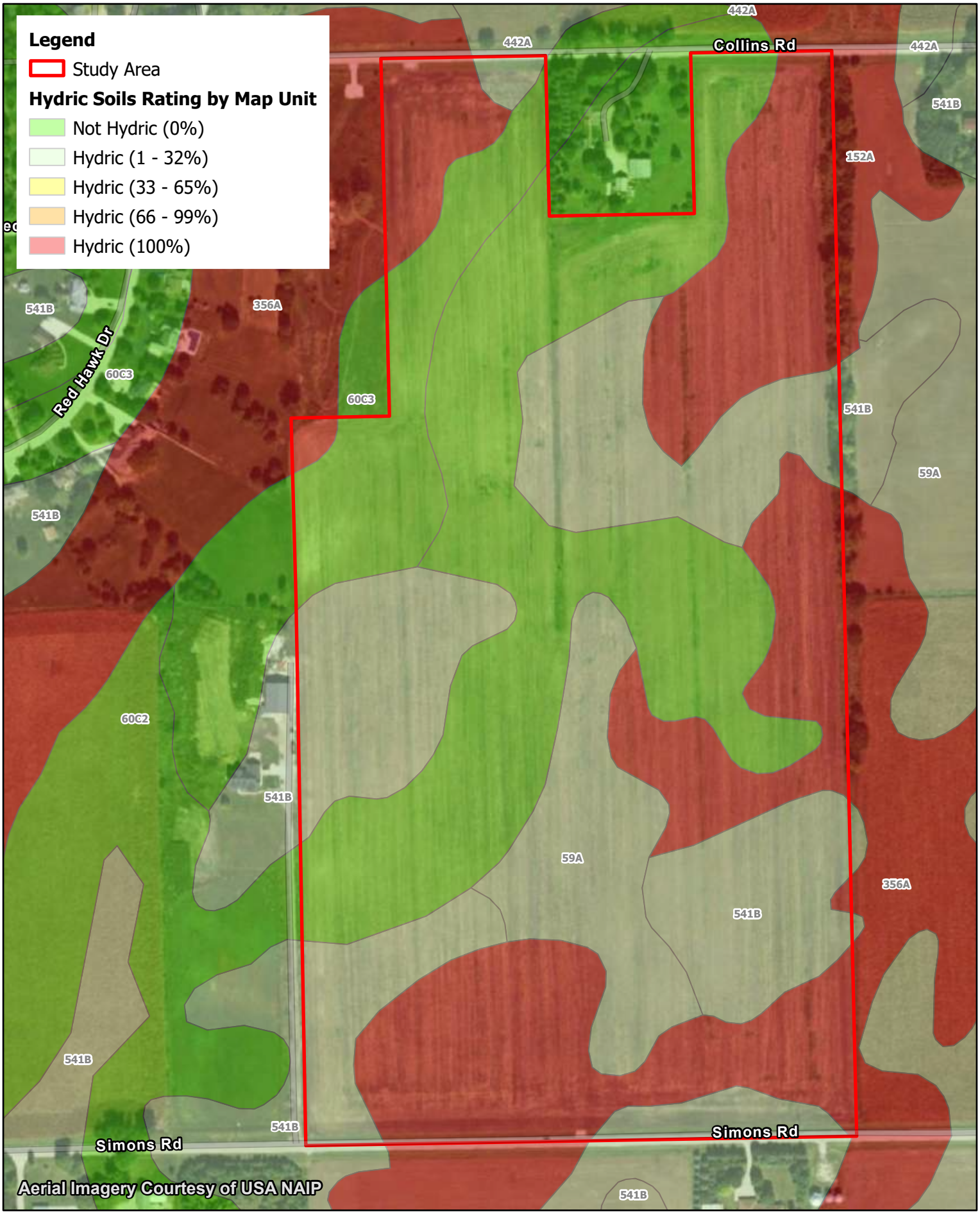


Figure 5. 2-ft Contours Map
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

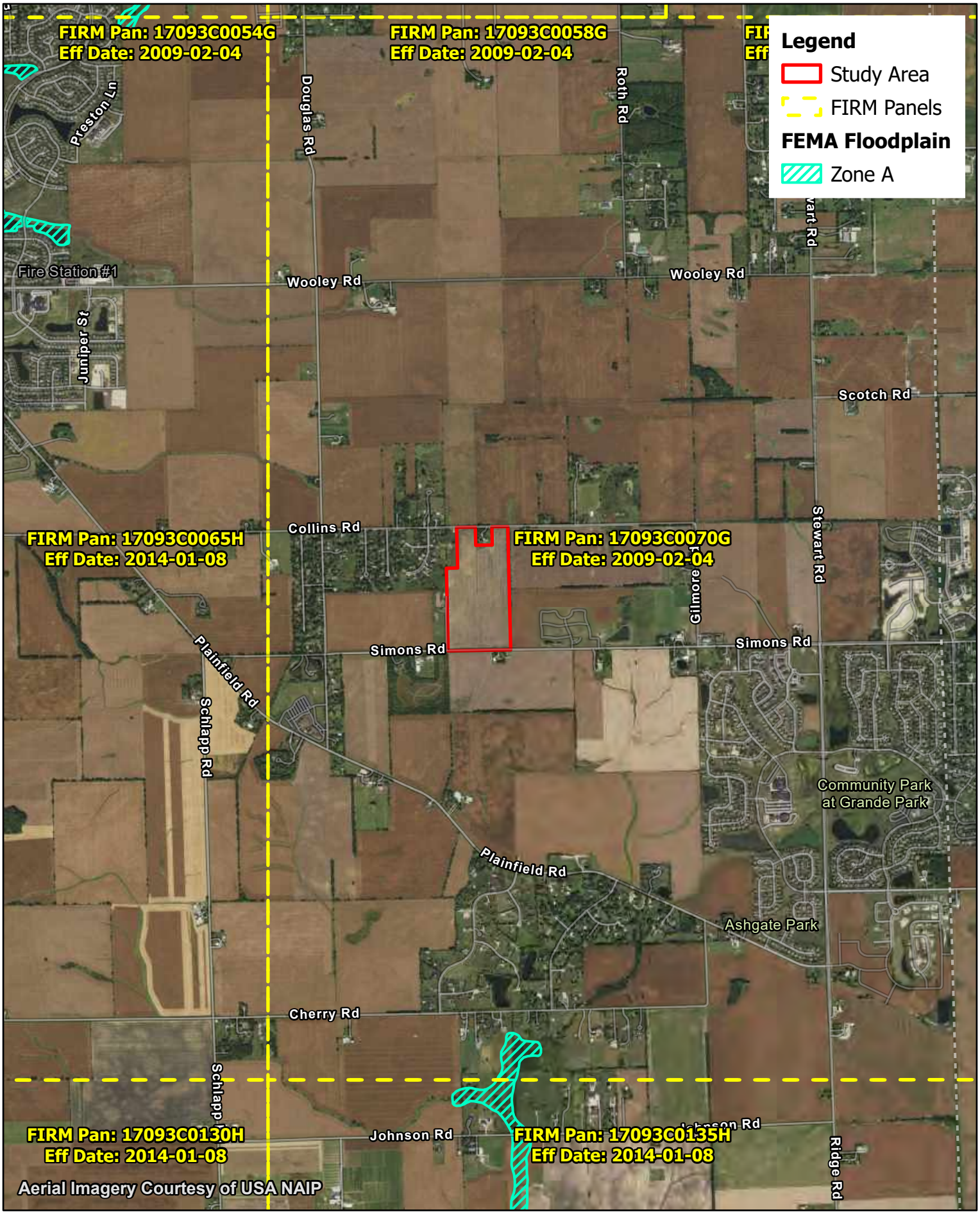
0 150 300 US Feet

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Figure 6. Hydric Soils Map
Oswego Township, Kendall County
TPE IL KE240, LLC

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	7.2	9.8%
60C2	La Rose silt loam, 5 to 10 percent slopes, eroded	0	18.9	25.8%
60C3	La Rose clay loam, 5 to 10 percent slopes, severely eroded	0	5.4	7.4%
152A	Drummer silty clay loam, 0 to 2 percent slopes	100	6.2	8.5%
356A	Elpaso silty clay loam, 0 to 2 percent slopes	100	16.7	22.8%
442A	Mundelein silt loam, 0 to 2 percent slopes	6	0.4	0.5%
541B	Graymont silt loam, 2 to 5 percent slopes	5	18.4	25.1%
Totals for Area of Interest			**73.2**	**100.0%**



Kimley»Horn

0 0.25 0.5 Miles

N

Figure 7. FEMA Floodplain Map
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 150 300 US Feet

N

Figure 8. Delineation Summary Map
Oswego Township, Kendall County
TPE IL KE240, LLC

ATTACHMENT A

Historic Aerials



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (March 1994)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (February 2002)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (April 2005)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (June 2007)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (June 2009)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (September 2011)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (April 2013)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

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Historic Aerial (April 2015)
Oswego Township, Kendall County
TPE IL KE240, LLC

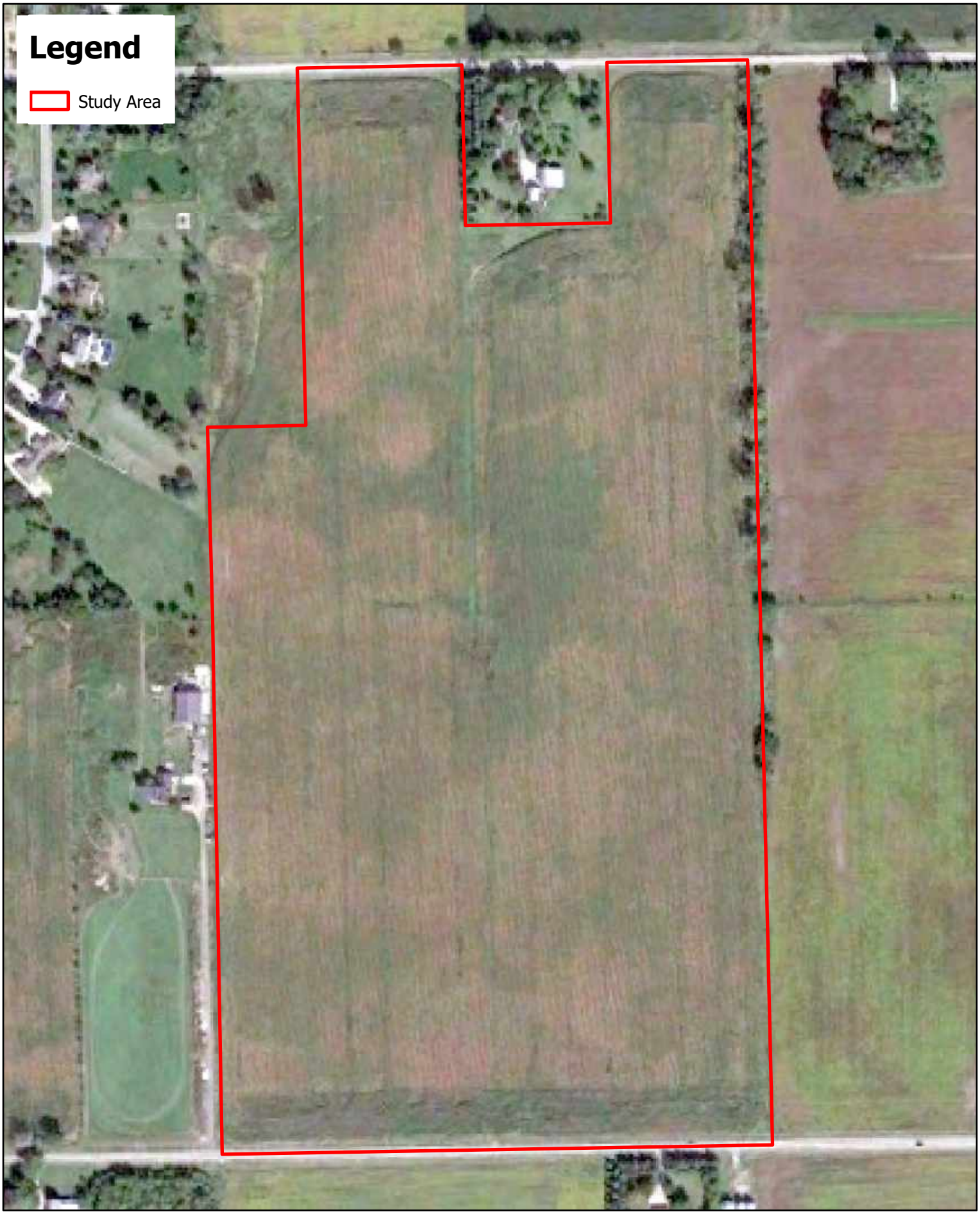


Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (April 2017)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (October 2019)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (May 2021)
Oswego Township, Kendall County
TPE IL KE240, LLC



Kimley»Horn

0 250 500 US Feet

N

Historic Aerial (July 2022)
Oswego Township, Kendall County
TPE IL KE240, LLC

ATTACHMENT B

Species Resources

EcoCAT
Ecological Compliance Assessment Tool

Applicant: Gloria Foxman
Contact: Amy Henry
Address: [redacted]

IDNR Project Number: 2405141
Date: 09/27/2023

Project: TPE IL KE240, LLC
Address: Collins Road, Oswego

Description: Construction of a solar farm with associated access roads and utilities.

Natural Resource Review Results

Consultation for Endangered Species Protection and Natural Areas Preservation (Part 1075)

The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location.

Consultation is terminated. This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary. Termination does not imply IDNR's authorization or endorsement.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Kendall

Township, Range, Section:
37N, 8E, 26



IL Department of Natural Resources Contact
Adam Rawe
217-785-5500
Division of Ecosystems & Environment

Government Jurisdiction
IL Environmental Protection Agency
Terri LeMasters
1020 North Grand Avenue East
Springfield, Illinois 62794 -9276

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
Phone: (309) 757-5800 Fax: (309) 757-5807

In Reply Refer To:
Project Code: 2024-0051052
Project Name: TPE IL KE240, LLC

February 19, 2024

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat, if present, within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) **the accuracy of this species list should be verified after 90 days**. This verification can be completed formally or informally. You may verify the list by visiting the ECOSPHERE Information for Planning and Consultation (IPaC) website https://ipac.ecosphere.fws.gov at regular intervals during project planning and implementation and completing the same process you used to receive the attached list.

Section 7 Consultation

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the U.S. Fish and Wildlife Service (Service) if they determine their project “may affect” listed species or designated critical habitat. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action may affect endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service to make "no effect" determinations. If you determine that your proposed action will have no effect on threatened or endangered species or their respective designated critical habitat, you do not need to seek concurrence with the Service.

Note: For some species or projects, IPaC will present you with *Determination Keys*. You may be able to use one or

more Determination Keys to conclude consultation on your action.

Technical Assistance for Listed Species

1. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain information on the species life history, species status, current range, and other documents by selecting the species from the thumbnails or list view and visiting the species profile page.

No Effect Determinations for Listed Species

1. If there are *no* species or designated critical habitats on the Endangered Species portion of the species list: conclude "no species and no critical habitat present" and document your finding in your project records. No consultation under ESA section 7(a)(2) is required if the action would result in no effects to listed species or critical habitat. Maintain a copy of this letter and IPaC official species list for your records.
2. If any species or designated critical habitat are listed as potentially present in the **action area** of the proposed project the project proponents are responsible for determining if the proposed action will have “no effect” on any federally listed species or critical habitat. No effect, with respect to species, means that no individuals of a species will be exposed to any consequence of a federal action or that they will not respond to such exposure.
3. If the species habitat is not present within the action area or current data (surveys) for the species in the action area are negative: conclude “no species habitat or species present” and document your finding in your project records. For example, if the project area is located entirely within a “developed area” (an area that is already graveled/paved or supports structures and the only vegetation is limited to frequently mowed grass or conventional landscaping, is located within an existing maintained facility yard, or is in cultivated cropland conclude no species habitat present. Be careful when assessing actions that affect: 1) rights-of-ways that contains natural or semi-natural vegetation despite periodic mowing or other management; structures that have been known to support listed species (example: bridges), and 2) surface water or groundwater. Several species inhabit rights-of-ways, and you should carefully consider effects to surface water or groundwater, which often extend outside of a project’s immediate footprint.
4. Adequacy of Information & Surveys - Agencies may base their determinations on the best evidence that is available or can be developed during consultation. Agencies must give the benefit of any doubt to the species when there are any inadequacies in the information. Inadequacies may include uncertainty in any step of the analysis. To provide adequate information on which to base a determination, it may be appropriate to conduct surveys to determine whether listed species or their habitats are present in the action area. Please contact our office for more information or see the survey guidelines that the Service has made available in IPaC.

May Effect Determinations for Listed Species

1. If the species habitat is present within the action area and survey data is unavailable or inconclusive: assume the species is present or plan and implement surveys and interpret results in coordination with our office. If assuming species present or surveys for the species are positive continue with the may affect determination process. May affect, with respect to a species, is the appropriate conclusion when a species might be exposed to a consequence of a federal action and could respond to that exposure. For critical habitat, ‘may affect’ is the appropriate conclusion if the action area overlaps with mapped areas of critical habitat and an essential physical or biological feature may be exposed to a consequence of a federal action and could change in response to that exposure.
2. Identify stressors or effects to the species and to the essential physical and biological features of critical habitat that overlaps with the action area. Consider all consequences of the action and assess the potential for each life stage of the species that occurs in the action area to be exposed to the stressors. Deconstruct the action into its component parts to be sure that you do not miss any part of the action that could cause effects to the species or physical and biological features of critical habitat. Stressors that affect species’ resources may have consequences even if the species is not present when the project is implemented.
3. If no listed or proposed species will be exposed to stressors caused by the action, a ‘no effect’ determination may be appropriate – be sure to separately assess effects to critical habitat, if any overlaps with the action

area. If you determined that the proposed action or other activities that are caused by the proposed action may affect a species or critical habitat, the next step is to describe the manner in which they will respond or be altered. Specifically, to assess whether the species/critical habitat is "not likely to be adversely affected" or "likely to be adversely affected."

4. Determine how the habitat or the resource will respond to the proposed action (for example, changes in habitat quality, quantity, availability, or distribution), and assess how the species is expected to respond to the effects to its habitat or other resources. Critical habitat analyses focus on how the proposed action will affect the physical and biological features of the critical habitat in the action area. If there will be only beneficial effects or the effects of the action are expected to be insignificant or discountable, conclude "may affect, not likely to adversely affect" and submit your finding and supporting rationale to our office and request concurrence.
5. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, check IPaC for species-specific Section 7 guidance and conservation measures to determine whether there are any measures that may be implemented to avoid or minimize the negative effects. If you modify your proposed action to include conservation measures, assess how inclusion of those measures will likely change the effects of the action. If you cannot conclude that the effects of the action will be wholly beneficial, insignificant, or discountable, contact our office for assistance.
6. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

For additional information on completing Section 7 Consultation including a Glossary of Terms used in the Section 7 Process, information requirements for completing Section 7, and example letters visit the Midwest Region Section 7 Consultations website at: https://www.fws.gov/office/midwest-region-headquarters/midwest-section-7-technical-assistance.

You may find more specific information on completing Section 7 on communication towers and transmission lines on the following websites:

- Incidental Take Beneficial Practices: Power Lines - https://www.fws.gov/story/incidental-take-beneficial-practices-power-lines
- Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning. - https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation

Tricolored Bat Update

On September 14, 2022, the Service published a proposal in the Federal Register to list the tricolored bat (Perimyotis subflavus) as endangered under the Endangered Species Act (ESA). The Service has up to 12-months from the date the proposal published to make a final determination, either to list the tricolored bat under the Act or to withdraw the proposal. The Service determined the bat faces extinction primarily due to the rangewide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across North America. Because tricolored bat populations have been greatly reduced due to WNS, surviving bat populations are now more vulnerable to other stressors such as human disturbance and habitat loss. Species proposed for listing are not afforded protection under the ESA; however, as soon as a listing becomes effective (typically 30 days after publication of the final rule in the Federal Register), the prohibitions against jeopardizing its continued existence and “take” will apply. Therefore, if your future or existing project has the potential to adversely affect tricolored bats after the potential new listing goes into effect, we recommend that the effects of the project on tricolored bat and their habitat be analyzed to determine whether authorization under ESA section 7 or 10 is necessary. Projects with an existing section 7 biological opinion may require

reinitiation of consultation, and projects with an existing section 10 incidental take permit may require an amendment to provide uninterrupted authorization for covered activities. Contact our office for assistance.

Other Trust Resources and Activities

Bald and Golden Eagles

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act, as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, please contact our office for further coordination. For more information on permits and other eagle information visit our website https://www.fws.gov/library/collections/bald-and-golden-eagle-management.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

PROJECT SUMMARY

Project Code: 2024-0051052
Project Name: TPE IL KE240, LLC
Project Type: Power Gen - Solar
Project Description: On behalf of Turning Point Energy (TPE), Kimley-Horn is initiating consultation with the USFWS to determine potential impacts to federally listed threatened and endangered species for a proposed commercial solar facility, referred to as KE240, leased and constructed by TPE. The Study Area comprises approximately 73.24 total acres and primarily consists of cropland. The solar facility will include access roads and associated utilities.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.6539038,-88.29601343426573,14z



Counties: Kendall County, Illinois

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Whooping Crane *Grus americana* Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non-Essential

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

FLOWERING PLANTS

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/601

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

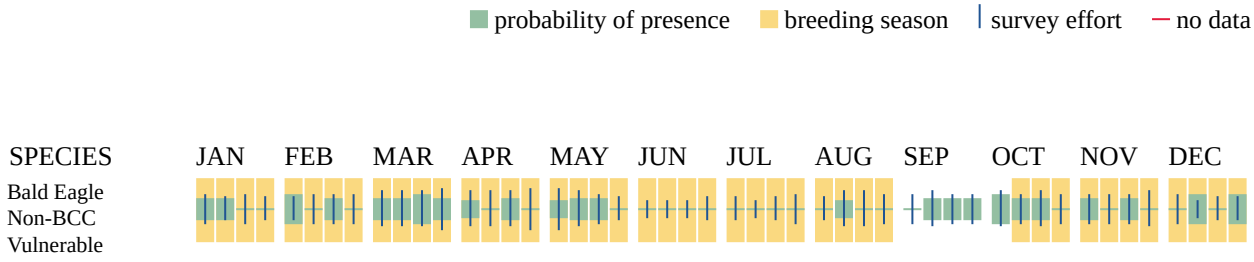
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds

- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover *Pluvialis dominica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10561	Breeds elsewhere
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9454	Breeds May 20 to Jul 31

NAME	BREEDING SEASON
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Pectoral Sandpiper *Calidris melanotos* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Ruddy Turnstone *Arenaria interpres morinella* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/10633	Breeds elsewhere
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9478	Breeds elsewhere
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



Short-billed Dowitcher BCC Rangewide (CON)



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

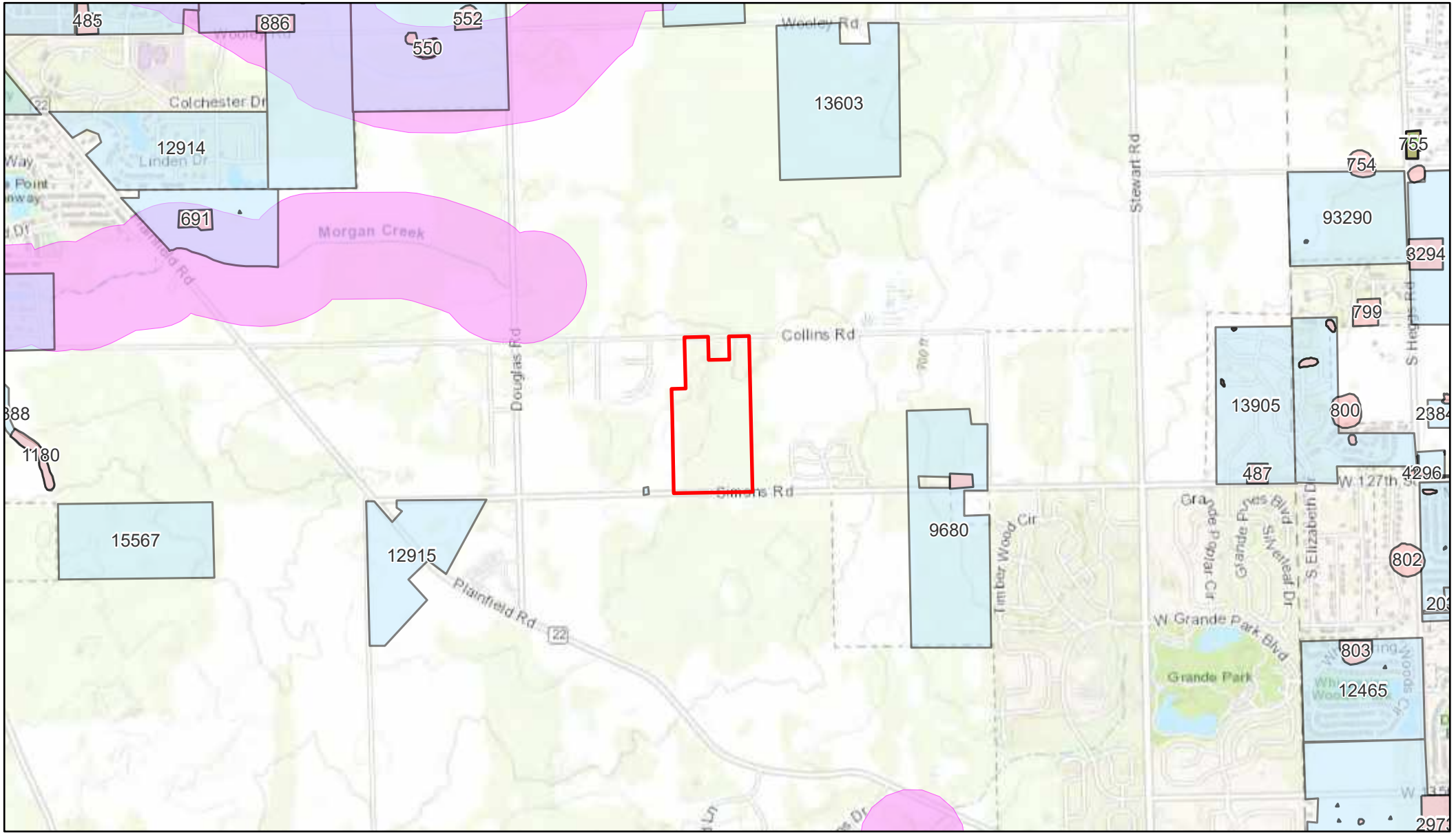
IPAC USER CONTACT INFORMATION

Agency: Kimley-Horn
Name: Cole Kiernan
Address: 767 Eustis Street
City: Saint Paul
State: MN
Zip: 55774
Email cole.kiernan@kimley-horn.com
Phone: 6124009099

ATTACHMENT C

Historic Resources

KE240 Solar



10/12/2023, 4:45:47 PM

1:36,112

0 0.23 0.45 0.9 mi

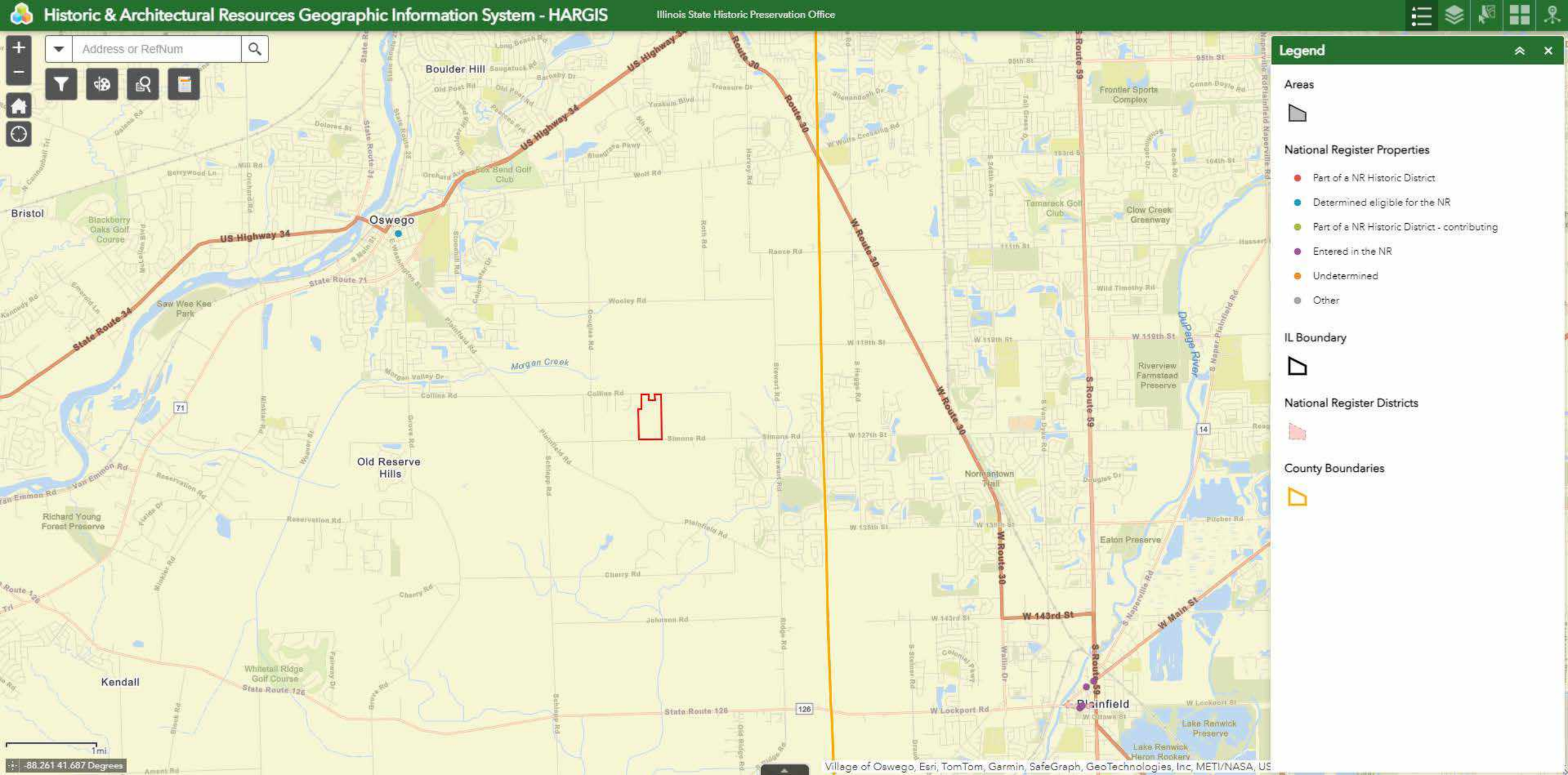
0 0.35 0.7 1.4 km

Village of Oswego, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA

- Study Area
- IAS Sites
- Surveys
- ISM Cemeteries
- IAS Cemeteries
- Archaeological Resource Potential

ArcGIS Web AppBuilder

Data capture, compilation and library maintenance: Marge Bargh, Colin Treworgy, and other ISGS Coal Section staff Compilation of library tiles to create this product: Chris Korose Documentation: Cheri Chenoweth, Chris Korose, and Alan Myers Quality Review: Cheri Chenoweth, Chris Korose,


Historic & Architectural Resources Geographic Information System - HARGIS
Illinois State Historic Preservation Office
Address or RefNum
Legend
Areas
National Register Properties
Part of a NR Historic District
Determined eligible for the NR
Part of a NR Historic District - contributing
Entered in the NR
Undetermined
Other
IL Boundary
National Register Districts
County Boundaries
Boulder Hill
Bristol
Oswego
Old Reserve Hills
Kendall
Plainfield
Normantown Trail
Eaton Preserve
Riverview Farmstead Preserve
Frontier Sports Complex
Tamarack Golf Club
Clow Creek Greenway
Lake Renwick Preserve
Lake Renwick Heron Rookery
Richard Young Forest Preserve
Saw Wee Kee Park
Whitetail Ridge Golf Course
Blackberry Oaks Golf Course
Fox Bend Golf Club
Morgan Creek
DuPage River
US Highway 34
State Route 34
State Route 71
State Route 126
W Route 30
S Route 59
W 143rd St
W Main St
Village of Oswego, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, US
1mi
-88.261 41.687 Degrees

Illinois Department of Natural Resources
JB Pritzker, Governor • Natalie Phelps Finnie, Director
One Natural Resources Way • Springfield, Illinois 62702-1271
www.dnr.illinois.gov

Kendall County
Oswego
Collins Rd, E of Red Hawk Dr
Section:26-Township:37N-Range:8E
IEPA, KHA-268173044
New construction, TPE IL KE240 Solar

PLEASE REFER TO: SHPO LOG #010100423

February 16, 2024

Amy Henry
Kimley Horn and Associates, Inc.
11995 Singletree Lane #225
Eden Prairie, MN 55344

The Illinois State Historic Preservation Office is required by the Illinois State Agency Historic Resources Preservation Act (20 ILCS 3420, as amended, 17 IAC 4180) to review all state undertakings for their effect on cultural resources. Pursuant to this requirement, we have received information regarding the above referenced project for our comment.

According to the information provided there is no federal involvement in your project. Be aware the state law is less restrictive than the federal cultural resource laws concerning archaeology. If your project will use federal loans or grants, need federal agency permits, use federal property, or involve assistance from a federal agency, then your project must be reviewed under the National Historic Preservation Act of 1966, as amended. Please notify us immediately if such is the case.

Our files do not identify any known historic properties within this proposed project area, nor is it within the high probability area for archaeological resources as defined in the state Act. Accordingly, this project is **EXEMPT** pursuant to Section 6 of the Illinois State Agency Historic Resources Preservation Act. An archaeological survey for your above referenced project is not required under Illinois law. Please know, however, we are always receptive to reviewing the results of any due diligence survey coverages.

This does not pertain to any discovery during construction, nor is it a clearance for purposes of the Illinois Human Remains Protection Act (20 ILCS 3440).

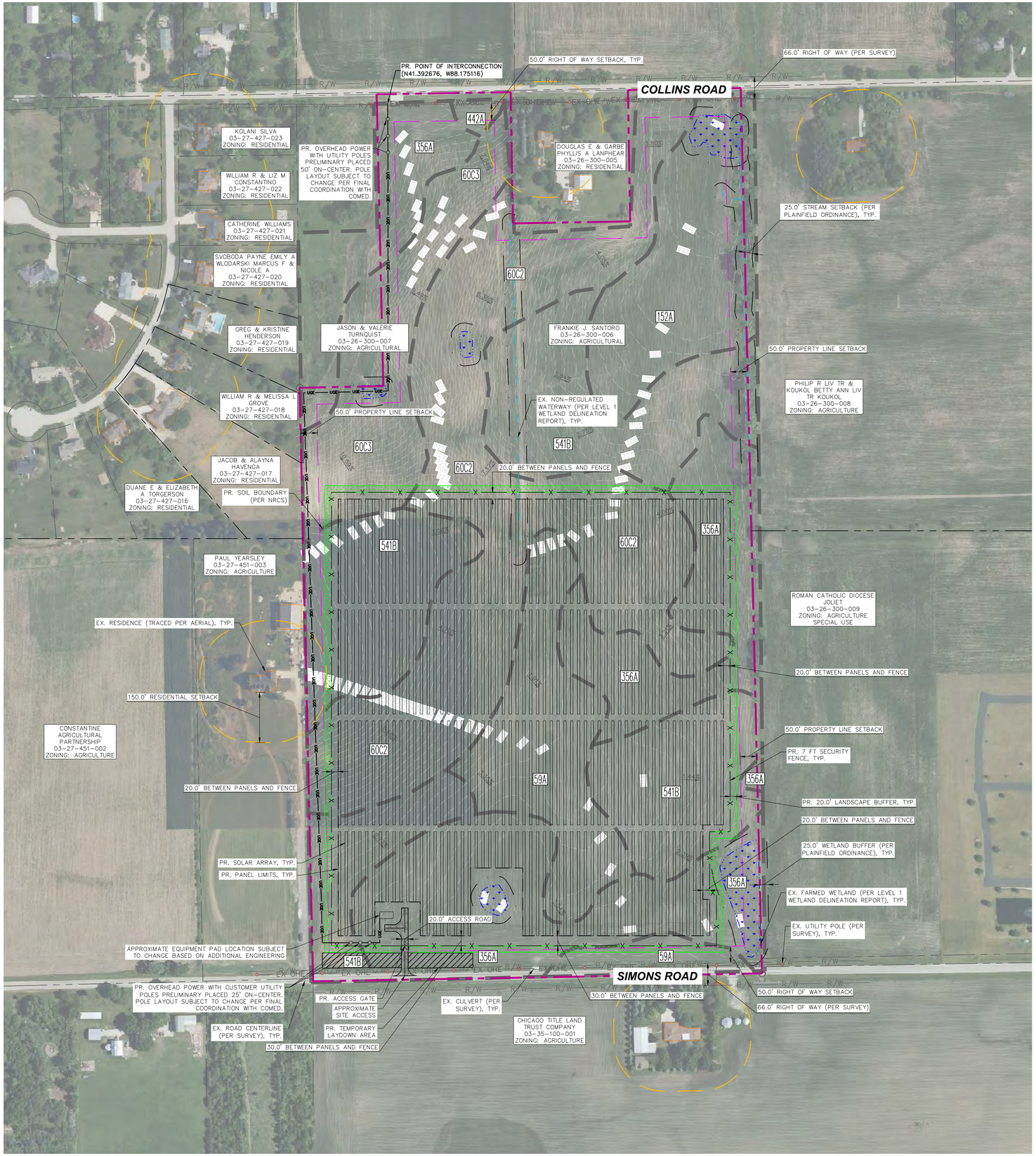
If further assistance is needed please contact Jeff Kruchten, Principal Archaeologist, at 217/785-1279 or jeff.kruchten@illinois.gov.

Sincerely,

[redacted]
Carey L. Mayer, AIA
Deputy State Historic
Preservation Officer

ATTACHMENT D

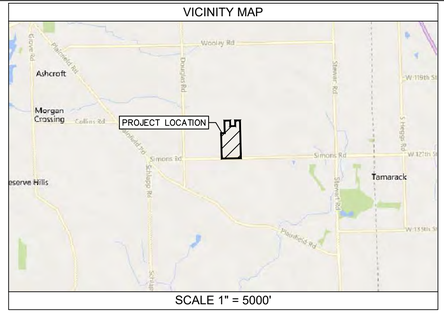
Site Plan





GRAPHIC SCALE IN FEET
0 75 150 300

VICINITY MAP



SCALE 1" = 5000'

LEGEND

ROAD LABEL	N 2200TH ST
PROPERTY LINE / PROJECT BOUNDARY	
ADJACENT PROPERTY LINE (PER SURVEY)	
ADJACENT PROPERTY LINE (TRACED PER GIS)	
RIGHT OF WAY	R/W
SETBACK	
RESIDENTIAL DWELLING SETBACK	
EX. RESIDENCE/STRUCTURE	
EX. CONTOUR	XXX
EX. OVERHEAD ELECTRIC	EX OHE
EX. UTILITY POLE	
EX. ROAD CENTERLINE	
EX. FARMED WETLAND (PER LEVEL 1 DELINEATION BY KIMLEY-HORN)	
EX. WETLAND BUFFER (PER THE CITY PLAINFIELD CODE OF ORDINANCES 4-10-6-8)	
EX. NON REGULATED WATERWAY (PER LEVEL 1 DELINEATION BY KIMLEY-HORN)	
EX. CULVERT	
EX. FLOW (DIRECTION AND SLOPE)	XX%
PR. SECURITY FENCE	X
PR. GATE	
PR. TEMPORARY LAYDOWN AREA	
PR. ACCESS ROAD	
PR. LANDSCAPE BUFFER	
PR. UNDERGROUND ELECTRIC	UGE UGE
PR. OVERHEAD ELECTRIC	OHW
PR. UTILITY POLE	
PR. EQUIPMENT PAD	
PR. SOLAR ARRAY	
PR. PANEL LIMITS	
SOIL BOUNDARY	

SITE DATA TABLE

PIN #	03-26-300-006
PROPERTY OWNER	FRANKIE J. SANTORO
SITE ADDRESS	SIMONS RD, OSEWEGO, IL 60543
LEGAL DESCRIPTION	SEC 26-37-8
ZONING JURISDICTION	KENDALL COUNTY
ZONING	A1 - AGRICULTURAL
CURRENT LAND USE	AGRICULTURAL FIELD
PROPOSED USE	COMMERCIAL SOLAR FIELD
TOTAL PARCEL AREA	73.07 ± AC
PRELIMINARY DISTURBED AREA	37.84 ± AC
PRELIMINARY SOLAR AREA	32.95 ± AC
RIGHT OF WAY SETBACK	50'
PROPERTY LINE SETBACK	50'
RESIDENTIAL SETBACK	150'

*ZONING SITE PLAN IS BEING SUBMITTED FOR SPECIAL USE PERMIT TO CONSTRUCT/OPERATE A SOLAR FARM

NOTES

1. THE PURPOSE OF THIS PLAN IS FOR SPECIAL USE PERMIT REVIEW AND APPROVAL BY KENDALL COUNTY TO CONSTRUCT A COMMERCIAL SOLAR FARM.
2. THIS PLAN WAS PRODUCED UTILIZING GIS RESOURCES, A PLAT OF SURVEY PREPARED BY LWS DATED 11/29/2023, AND INFORMATION FROM MULTIPLE SOURCES, INCLUDING KENDALL COUNTY GIS, GOOGLE EARTH, AND USGS TOPOGRAPHIC INFORMATION.
3. SUBJECT PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AS SHOWN ON THE FLOOD INSURANCE RATE MAP (COMMUNITY PANEL 17093C0070G) PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).
4. THE LOCATIONS OF PROPOSED IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO: FENCING, SOLAR ARRAY RACKING, INVERTER/TRANSFORMER PADS, OVERHEAD POLES AND LINES, ETC., SHOWN ARE APPROXIMATE AND ARE SUBJECT TO MODIFICATION DUE TO SITE CONDITIONS, ADDITIONAL PERMITTING REQUIREMENTS, EQUIPMENT SPECIFICATIONS, AND/OR OTHER CONSTRAINTS DURING FINAL ENGINEERING.
5. PROJECT AREA, INCLUDING CONSTRUCTION STAGING AREAS, WILL BE CLEARED AND GRUBBED AS NECESSARY, RETAINING PRE-DEVELOPMENT DRAINAGE PATTERNS TO THE BEST EXTENT POSSIBLE. CONSTRUCTION STAGING AND AREAS SUBJECT TO RUTTING DURING CONSTRUCTION WILL BE TEMPORARILY STABILIZED WITH GRAVEL. SOIL CONDITIONS AND EQUIPMENT LOADS WILL DETERMINE FINAL DESIGN.
6. ALL DIMENSIONS SHOWN ARE AT 90 DEGREES UNLESS OTHERWISE NOTED.
7. CONTRACTOR SHALL CALL AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. ADDITIONALLY, CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES.
8. CONTRACTOR SHALL MAINTAIN ACCESS AND UTILITY SERVICES TO ANY REMAINING BUILDING(S) OR ADJACENT BUILDING(S) THROUGHOUT THE DEMOLITION AND CONSTRUCTION PHASES. EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED/RESTORED TO THE SATISFACTION OF THE OWNER BY THE CONTRACTOR RESPONSIBLE FOR THE DAMAGE.
9. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE SIGNS, BARRICADES, WARNING LIGHTS, GUARD RAILS, AND EMPLOY FLAGGERS AS NECESSARY WHEN CONSTRUCTION ENDANGERS EITHER VEHICULAR OR PEDESTRIAN TRAFFIC. THESE DEVICES SHALL REMAIN IN PLACE UNTIL THE TRAFFIC MAY PROCEED NORMALLY AGAIN.
10. SITE WILL HAVE NO DEDICATIONS FOR OPEN SPACE, NATURAL AREA, HISTORIC BUILDING(S)/STRUCTURE(S), OR STORMWATER MANAGEMENT FACILITIES.
11. SITE WILL NOT INCLUDE WATER SOURCE OR SEWAGE DISPOSAL. APPROXIMATE LOCATION OF EXISTING WATER WELL LOCATIONS SHOWN PER THE ILLINOIS WATER WELL INTERACTIVE MAP ONLINE.
12. STORMWATER MANAGEMENT FACILITIES TO BE PROVIDED AS REQUIRED BY COUNTY AND/OR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITTING. REQUIREMENTS TO BE DETERMINED DURING FINAL ENGINEERING.
13. THE MAXIMUM HEIGHTS OF ANY SOLAR PANEL SHALL NOT EXCEED 20 FEET.
14. SOLAR PANELS WILL BE DESIGNED WITH ANTI-REFLECTIVE COATING TO MINIMIZE GLARE.
15. COLLECTION LINES WITHIN THE SOLAR FARM WILL BE LOCATED AND MAINTAINED UNDERGROUND.
16. THERE SHALL BE NO EXTERIOR LIGHTING.
17. SETBACKS SHOWN ON THIS PLAN ARE BASED ON KENDALL COUNTY CODE OF ORDINANCES, SECTION 7:00.D.17.
18. ALL NECESSARY PERMITS FOR SOIL EROSION CONTROL AND DRIVEWAY CONSTRUCTION WILL BE OBTAINED AS PART OF FINAL ENGINEERING AND PRIOR TO CONSTRUCTION.
19. LEVEL 1 WETLAND DELINEATION PERFORMED BY KIMLEY-HORN DATED 02/13/2024.
20. THE WETLAND BUFFER WAS DETERMINED BASED ON THE PLAINFIELD CODE OF ORDINANCES SECTION 4-10-6-8. STATES THAT THERE NEEDS TO BE A NATURAL VEGETATION STRIP OF AT LEAST 25 FEET. PER SECTION 400, WILL NEED A SITE DEVELOPMENT PERMIT.

SOILS DATA TABLE

MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC SOIL GROUP
59A	LISBON SILT LOAM, 0 TO 2 PERCENT SLOPES	C/D
60C2	LA ROSE SILT LOAM, 5 TO 10 PERCENT SLOPES	C
60C3	LA ROSE CLAY LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED	C
152A	DRUMMER SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES	B/D
356A	ELPASO SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES	B/D
442A	MUNDELEIN SILT LOAM, 0 TO 2 PERCENT SLOPES	B/D
541B	GRAYMONT SILT LOAM, 2 TO 5 PERCENT SLOPES	C

No.	REVISIONS	DATE
1	REVISION 1	03/28/2024

TurningPoint Energy

Kimley»Horn
© 2024 KIMLEY-HORN AND ASSOCIATES, INC.
10 EAST DOTY STREET, SUITE 800
MADISON, WI 53703 (608) 251-0407
WWW.KIMLEY-HORN.COM

KHA PROJECT 268173044
DATE 02/19/2024
SCALE AS SHOWN
DESIGNED BY MRK
DRAWN BY DE
CHECKED BY AH

ZONING SITE PLAN

TPE IL KE240, LLC

KENDALL COUNTY, IL

SHEET NUMBER
Z1.0

Illinois Department of Natural Resources

JB Pritzker, Governor • Natalie Phelps Finnie, Director
One Natural Resources Way • Springfield, Illinois 62702-1271
www.dnr.illinois.gov

Kendall County
Oswego
Collins Rd, E of Red Hawk Dr
Section:26-Township:37N-Range:8E
IEPA, KHA-268173044
New construction, TPE IL KE240 Solar

PLEASE REFER TO: SHPO LOG #010100423

February 16, 2024

Amy Henry
Kimley Horn and Associates, Inc.
11995 Singletree Lane #225
Eden Prairie, MN 55344

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Sincerely,

[redacted]

Deputy State Historic
Preservation Officer

Operations & Maintenance ("O&M") Plan – TPE IL KE240, LLC

O&M Plan / O&M Practices and Services

The O&M plan is structured to both maximize system performance and meet all permitting requirements. Regional O&M staff and seasonal staff will be assigned to perform:

1. Preventative maintenance,
2. Corrective maintenance, and
3. Support of monitoring and asset management services.

A summary scope of work for each is as follows:

Preventative Maintenance

- Industry standard of care to ensure and maintain solar production levels
- Regular maintenance on project components per manufacturer recommendations and industry best practices and standards of care
- Module cleanings are not expected given the average monthly rainfall in the area. If cleaning is required, modules will be cleaned to ensure project performance.
- Vegetation abatement as required to ensure project performance
- Primary component inspection on an annual basis (panels, inverter, high voltage equipment)
    - Array & balance of system inspection
    - Module visual inspection
    - Data Acquisition System (DAS) & Meteorological (MET) station inspection
    - Inverter full inspection
    - High voltage equipment inspections
- Mechanical & electrical maintenance on an annual basis including inverter maintenance per manufacturer warranty requirements and standards of care
- Yearly inspection and maintenance as needed for roads, storm water, and other site civil features

Corrective Maintenance

- Remote problem diagnosis & qualification via the project DAS system
- On-site technician dispatch: Trained, qualified and insured service techs for rapid response
- Warranty submittal/claims notification, tracking of replacement parts' arrival/storage/ installation, etc.
- Maintenance ticket updates and closure identifying root cause/problem resolution reporting to owner

Monitoring

- Remote equipment monitoring (24x7x365) via DAS system
- Remote dispatch per customer/owner requirements

- Ticketing: Create and dispatch automated ticketing with issue resolution notifications and root cause reporting
- Problem tracking and ensured resolution reporting included within monthly report
- Identify potential and actual underperformance issues; recommend remedies
- Customized data analysis and alerts for customer:
    - Collection and hosting of system monitoring data
    - Owner access to online portal monitoring and production with weather data
    - Operator to host site communication and fees for monitoring

Monitoring and asset management services are provided by the late-stage development company's remote operation center and central services staff.

Plan and Timeline for Responding to Loss of Major Plant Components

O&M personnel will be notified of any loss of major plant component or related failures by the 7x24 remote operations center. This center will dispatch onsite technicians for system critical failures (inverter, transformer, or tracker motor failure). The plan for such losses is to:

- Remove and replace the failed equipment with spare parts, nearby parts in inventory or emergency delivery of parts from manufacturer as rapidly as possible.
- Diagnose reason for failure.
- Work with general contractor and/or manufacturers for any warranty or related claims.

Compliance with Prudent Utility Practices

"Prudent Utility Practices" are defined as the practices, methods and acts (including the generally accepted practices, methods and acts engaged in or approved by the operators of similar electric generating facilities) that, at the time of such practice, method or act is employed and in the exercise of reasonable judgment in light of the facts known at such time, would be expected to accomplish the desired result in a workmanlike manner, consistent with applicable laws and other governmental requirements and reliability, safety and environmental protection. However, Prudent Utility Practices shall not require the use of the optimum practice, method or act, but shall only require the use of acceptable practices, methods or acts generally accepted in the United States in performing obligations in accordance with Prudent Utility Practices.

All O&M practices follow Prudent Utility Practices with the utmost focus on safety. As a part of all O&M contracts with vendors, contractors, and sub-contractors, our team will ensure that these companies are responsible for the safe performance of work and for the safety of its, and it's subcontractors', employees, representatives, agents and invitees of contractor or its subcontractors at and around the project site, or any other person who enters the project site for any purpose. To facilitate this, all contractors must provide a safety plan whereby contractor maintains responsibility for maintaining all safety precautions and measures for areas on and around the project site. As part of this safety plan, contractor must provide a safe working environment at the project site during the performance of the work, and shall, among other requirements, seek to minimize the number of safety-related incidents during the performance of the work (with both TPE's and contractor's mutual objective of zero lost time accidents). Such safety plan shall include requirements for the safety prequalification of each

subcontractor and a drug and alcohol program (which shall include a drug testing policy). Furthermore, the safety plan shall meet the requirements of applicable laws and applicable standards.

After the commencement of work, TPE and contractor shall periodically review safety compliance, particularly in light of any injuries or near-miss incidents that may arise through the performance of the work, and cooperate jointly to develop necessary changes to the safety plan in light of such circumstances, if any.

The safety plan shall apply to all individuals accessing the project site and performing work on the project. As part of the safety plan, a safety representative will be identified with the necessary qualifications and experience to supervise the implementation of, and monitoring of compliance with, the safety plan. The safety representative shall make routine inspections of the project site and shall hold regular safety meetings with contractor's personnel, subcontractors and others.

Each staff member undergoes personal background checks, qualifies as possessing safety and related solar skills training required, or shall gain this training from an approved O&M training program prior to starting work on the job site.

The contractor shall make the site safety plan available to local authorities having jurisdiction/permitting authorities (AHJs) during the construction process, upon request. The safety plan should include provisions for the management of site access, traffic management, road maintenance, and site security.

Emergency Response

The site owner shall provide an emergency response plan to the AHJs prior to commercial operation of the facility, if required by the local AHJs. The site owner shall provide an education training session to county representatives and first responders prior to commercial operation of the facility, if required by the local AHJs. The site owner shall provide a means and procedure for site access in coordination with the local AHJs.

Equipment Manufacturer Recommendations

The O&M plan referenced above complies with or exceeds all standard utility-scale PV equipment manufacturer recommendations. We can provide copies of all major equipment O&M recommendations prior to formal procurement as needed.

Mowing and Weed Management

Vegetation should be well maintained in the defined lease area for the solar array. Management should comply with any local ordinances or conditions of approval. Mowing and weed whacking schedules will be developed and allow for flexibility based on rainfall and vegetation growth.

Buffer Management

Vegetative Buffers should be inspected during maintenance visits to ensure compliance with local ordinances or conditions of approval. Tree health and growth should be assessed and promoted to ensure compliance with local ordinances.

Warranties

All warranties are managed and handled at the project company level and are the responsibility of the late-stage development company that will operate and own the project over its useful life. Manufacturers of major equipment including modules, inverters, racking and transformers provide equipment warranties for the life of their products.

Outage Schedules

All planned shutdown of equipment for routine maintenance will be planned and coordinated with the local utility. When possible, these outages will occur in non-solar producing hours (nighttime). As such, no planned outages are scheduled.

Spare Parts

As part of the installation of the project, spare parts may be procured and stored with the O&M service provider for faster access to parts when necessary. This may include spare modules, inverters, parts, tracker components, fuses, wire and related inventory. Additionally, along with the warranty of the equipment, we expect to gain committed response intervals from manufacturers to address equipment replacement requirements. Spare parts will not be stored on site, rather, they will be stored off site in the O&M provider's facilities.

Start-up / Ramp-up Requirements / Times

The PV solar plant starts up as the sun rises in the morning and ramps down as the sun sets in the evening. We can provide specific historical times for the location of our solar array as a means of working to optimize this generation asset.

KE240 Solar Facility Decommissioning Plan and Site Reclamation Plan

1.0 Facility Description

KE240 Solar Photovoltaic Facility is a 4.99 MW AC solar farm proposed at Simons Rd, IL 60543 in Kendall County (the "Facility"). The Facility is to be constructed on approximately 38 acres of 73-acre parcel located primarily on farmland without buildings. The purpose of the Facility is the generation of electricity. The Project will be interconnected to the Commonwealth Edison ('ComEd') electric distribution grid near the Northwest corner of the site, along Collins Rd.

The Facility will be a ground-mounted solar array. The solar panels will be mounted on steel and aluminum structures consisting of posts, beams, rails and bracing. Vertical steel posts will be driven into the ground to a depth of approximately eight feet to anchor the structures. The solar panels will be connected to the inverters mounted on the racking structure via copper and aluminum wire. The inverters will connect to electric panels, transformers, and then switchgear at the array location via underground wire. Output from the Facility will be connected overhead to the existing utility distribution lines.

The estimated useful Facility lifetime is 25 years or more. The following list is a summary of the site features:

- 4.99 MW Solar array consisting of silicone solar panels.
- Driven post steel and aluminum racking system.
- 7' Security fence surrounding the array perimeter
- 1 Slab on grade concrete pads for electrical equipment, including inverter and transformer.
- Copper and aluminum wire.
- Underground conduit at the array location.
- Overhead poles and wires from the array location to utility poles.
- Gravel access roads.
- Miscellaneous electrical equipment.

2.0 Project Decommission and Recycling

The Facility consists of numerous materials that can be resold or recycled for significant scrap value, including steel, aluminum, glass, copper, and plastics. (Often, current market salvage values of a Facility exceed estimated decommissioning and site restoration expenses.) The Facility has an anticipated operational life of 20 years or longer if properly maintained. At the end of operational life of the Facility, the Facility will be safely dismantled using conventional construction equipment, rather than being demolished or otherwise disposed of.

2.1 Temporary Erosion Control

Temporary erosion and sedimentation control best management practices will be used during the decommissioning phase of the Facility. Control features will be regularly inspected during the decommissioning phase and removed at the end at the process. All decommissioning activities will conform with local and state regulations. Demolition debris shall be placed in temporary onsite storage area(s) pending final transportation and/or recycling according to the procedures listed below.

2.2 Permits and Approvals

It is anticipated a NPDES Permit from the Illinois Environmental Protection Agency (IEPA) and a SWPPP will be required. The proposed development area of the site does not contain a protected resource, thus terminating consultation with the Illinois Department of Natural Resources. Furthermore, no federal approvals are expected. Appropriate applications for permits will be submitted and approved prior to decommission activities.

2.3 Material Removal Process

The decommission process will consist of the following general steps:

2.3.1 Facility shall be disconnected safely from the power grid and all equipment shall be switched to off position.

2.3.2 PV modules shall be disconnected, packaged, and returned to manufacturer or appropriate facility for recycling, or resold for other project use.

2.3.3 Above and underground cabling shall be removed and sent to an appropriate recycling facility or sold for salvage value.

2.3.4 Inverters will be disconnected from racking and shipped intact to an approved electrical equipment recycler or appropriately disposed of.

2.3.5 Racking materials shall be dismantled, removed, and recycled off-site at an approved recycler, sold for scrap value, or appropriately disposed of.

2.3.6 Fencing will be dismantled, removed, and recycled off-site at an approved recycler, sold for scrap value, or appropriately disposed of.

2.3.7 Grade slabs will be broken and removed and appropriately disposed of in compliance with local and state regulations.

2.3.8 All remaining electrical and support equipment will be dismantled, decontaminated (if appropriate) and recycled, sold for scrap value, or disposed of.

2.4 PV Module Removal and Recycling

Solar photovoltaic modules used in the Facility are manufactured within regulatory requirements for toxicity based on Toxicity Characteristic Leaching Procedure (TCLP). The solar panels are not considered as hazardous waste. The panels used in the Facility will contain silicon, glass, and aluminum, which have value for recycling. Solar panels have a warranty of 20 – 25 years and useful life of 35 – 50 years or longer. The most realistic outcome for solar modules is selling them for re use in other generation projects. Modules will be sold for re use or dismantled and packaged per manufacturer or approved recyclers specifications and shipped to an approved off-site approved recycler. Per the Health and Safety Impacts of Solar Photovoltaics White Paper by North Carolina State University, section 1.2.3 Panel End-of-Life Management, modules can be recycled at the time of decommissioning.

2.5 Electric Wire Removal

Electric wire made from copper or aluminum has scrap value for recycling. DC wiring can be removed manually from the panels to the inverter. Underground wire in the array of the array will be pulled and removed from the ground. Overhead cabling for the interconnection will be removed from poles. All wire will be sent to an approved recycling facility or sold for scrap value.

2.6 Electrical Equipment Removal

Inverters, panels, transformers, switchgear, and other electrical equipment will be dismantled, packaged, and removed from the site per manufacture's recommendations for removal, decontamination, disposal, or recycling. Any dielectric fluids present in transformer, or other electric equipment will be removed, packaged, and set to an approved waste facility.

2.7 Racking and Fencing removal

All Racking and fencing material will be broken down into manageable units and removed from facility and sent to an approved recycler or sold for scrap value. All racking posts driven into the ground will be pulled and removed.

2.8 Concrete Slab Removal

Concrete slabs used as equipment pads will be broken and removed and appropriately disposed of in compliance with local and state regulations. Clean concrete will be crushed and disposed of off-site and or recycled and reused either on or off-site.

2.9 Roads

Gravel from on-site access roads shall be removed and recycled. Once the gravel is removed, the soil below the access roads shall be scarified a depth of 18-inches and blended and replaced with topsoil as noted in the Site Restoration section below.

2.10 Landscaping

Unless requested in writing to remain in place by the landowner, all vegetative landscaping installed as part of the Project will be removed. Any weed control measures used during the project, including weed-control fabrics or other ground covers shall be removed. Landscape areas will be restored as noted in the Site Restoration section below.

2.11 Site Restoration

Once removal of all Project equipment and landscaping is complete, all areas of the project site that were traversed by vehicles and Construction and/or Decommission equipment that exhibit compaction and rutting shall be restored. All prior agricultural land shall be ripped at least 12 inches deep or to the extent possible. The existence of drainage tile lines or underground

utilities may necessitate less ripping depth. The disturbed area shall then be disked. Once this is complete, seed shall be distributed.

2.12 Final Site Walkthrough

A final site walkthrough will be conducted to remove debris and/or trash generated within the site during the decommissioning process and will include removal and proper disposal of any debris that may have been wind-blown to areas outside the immediate footprint of the Facility being removed.

3.0 Decommissioning Terms

The Facility shall be decommissioned within 12 months of the end of the Facility's operational life, but outside of the winter season.

Per the requirements of the Illinois Department of Agriculture (IDOA), an Agricultural Impact Mitigation Agreement (AIMA) must be signed by the Facility owner and filed with the County Board. The IDOA prepared the AIMA to help preserve the integrity of Agricultural Land that is impacted by the Construction and Decommission of a Commercial Solar Energy Facility. Per the AIMA, all solar panels shall be removed from the property and the land at completion of the decommissioning phase as described in this document, and expiration of site lease, the land will be returned to the owner in substantially the existing condition as of the date hereof.

4.0 Decommissioning Cost Estimate

Kimley-Horn prepared the attached Decommissioning Estimate utilizing Industry Standard prices in 2024. Removal costs were determined using RS Means Cost Data. Removal costs includes materials, contractor installation/demolition, and mobilization and demobilization.

5.0 Attachments

- Decommissioning and Site Reclamation Cost Estimate (With Salvage)

Project Name: TPE IL KE240, LLC
Project Locality: Kendall County
Decommissioning Estimate Pro Forma with Salvage

Kimley»Horn

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs. LS = Lump Sum, HR = Hours, EA = Each, LF = Linear Feet.

Item	Quantity	Unit	Unit Price	Total Salvage	Total Price (incl. markups)	Total Price
Mobilization	1	LS	$15,510.00	$ -	$15,510.00	$ (15,510.00)
Contractor's G&A	1	LS	$2,810.00	$ -	$2,810.00	$ (2,810.00)
SWPPP, Erosion Control Measures	38	AC	$670.00	$ -	$25,460.00	$ (25,460.00)
Seeding	2.0	AC	$2,810.81	$ -	$5,621.62	$ (5,621.62)
Tilling 6" topsoil/scarifying access road and rough grading existing soil	1	AC	$30,700.42	$ -	$30,700.42	$ (30,700.42)
Remove and Recycle Chainlink Fence, 7' High	5,103	LF	$6.53	$ 3,143.45	$33,322.59	$ (30,179.14)
Remove Power Pole	6	EA	$1,064.62	$ -	$6,387.72	$ (6,387.72)
Remove and Recycle Underground Cables	112,275	LF	$0.35	$ 18,300.78	$39,296.15	$ (20,995.37)
Remove and Recycle Above Ground Cables	68,038	LF	$0.53	$ 11,090.26	$36,060.35	$ (24,970.09)
Remove and Recycle Inverters	1	EA	$5,055.12	$ 5,400.00	$5,055.12	$ 344.88
Remove and Recycle Photovoltaic Modules	17,056	EA	$5.71	$ 147,324.85	$97,389.76	$ 49,935.09
Remove and Recycle Piles	2,850	EA	$10.84	$ 45,144.00	$30,894.00	$ 14,250.00
Remove and Recycle Support Assemblies	385,037	LB	$0.05	$ 42,354.11	$19,251.87	$ 23,102.24
			Subtotal:	**$ 272,757.45**	**$347,759.60**	**$ (75,002.15)**
				25-Year Inflation (3%/year):		**$ (56,766.97)**
					Total:	**$ (131,769.12)**

Notes:

1. Quantities were recorded on 03/29/2024.
2. Equipment rental rates and labor productivity and unit rates were derived from RSMeans Online (Heavy Construction, 2024 data).
3. Labor, material, and equipment rates are based on the RSMeans City Cost Index (CCI) for La Salle.
4. PV Module Removal/Recycle labor and equipment costs are computed at present values.
5. The age at decommissioning of this estimate is 25 years.
6. This estimate assumes 26 modules/tracker for one-third length tracker, 52 modules/tracker for two-thirds length trackers, and 78 modules/tracker for full length trackers.
7. This estimate assumes 5 piles/tracker for one-third length tracker, 9 piles/tracker for two-thirds length trackers, and 13 piles/tracker for full length trackers.
8. This estimate assumes 77,162 LB of support assemblies per 1 MW output.
9. Material salvage values were based off of current US salvage exchange rates.
10. Photovoltaic Module material salvage rate is based on straight-line depreciation of modules (-0.5% per year).
11. Material salvage values were determined using the most prevalent salvageable metal in each component. Copper Wire @$0.16/LF (AC and DC Cables) and Steel @$0.62/LF of fence, @$0.99/pile, and @$0.11/LB.
12. Inverter resale value is dependent on the assumption that all inverters will be decommissioned and resold half way through their useful life (every 5 years).
13. This estimate assumes string inverters centralized in one (1) location with transformer and pad.

National Flood Hazard Layer FIRMette

FEMA

88°18'5"W 41°39'27"N



88°17'27"W 41°39'N

Feet

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

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/26/2023 at 1:39 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Federal Aviation Administration

« OE/AAA

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference CFR Title 14 Part 77.9.

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

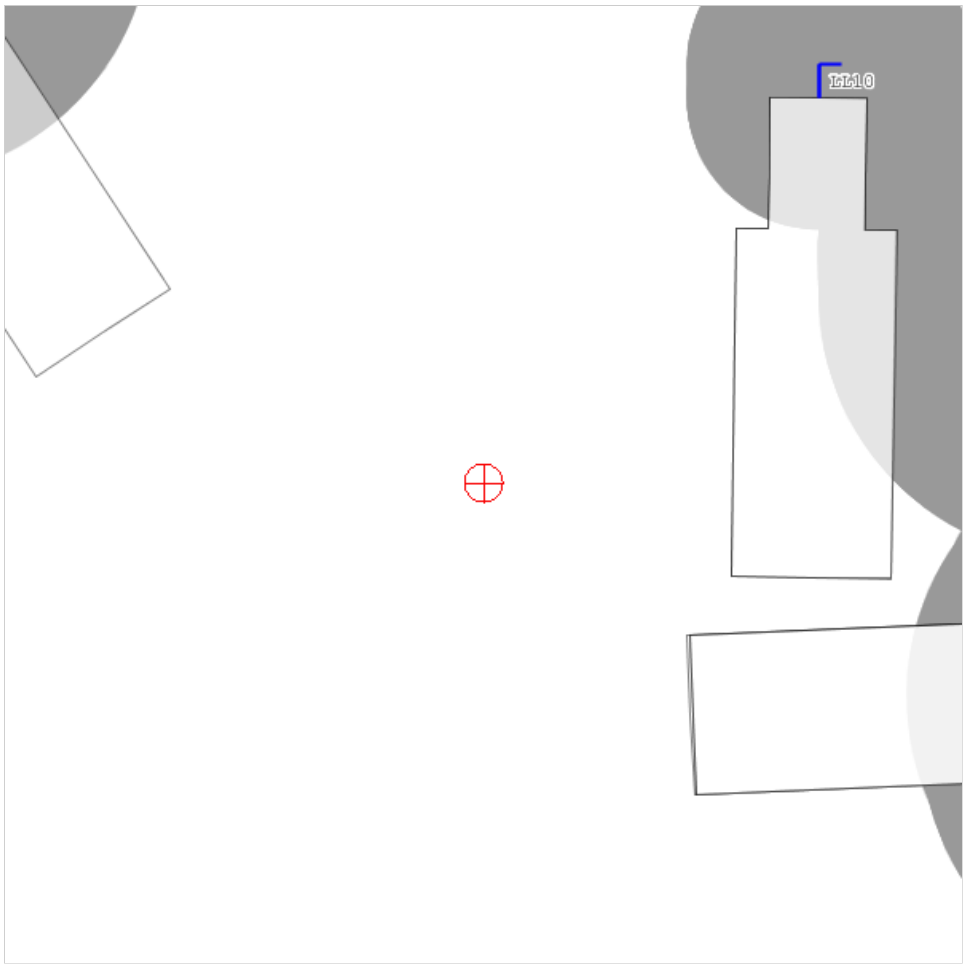
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

* **Structure Type:**	SOLAR | Solar Panel Please select structure type and complete location point information.
Latitude:	41 Deg 39 M 7.9 S N
Longitude:	88 Deg 17 M 45.7 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	713 (nearest foot)
Structure Height :	20 (nearest foot)
Is structure on airport:	(●) No ( ) Yes

Results

You do not exceed Notice Criteria.


LL10

Federal Aviation Administration

« OE/AAA

Notice Criteria Tool

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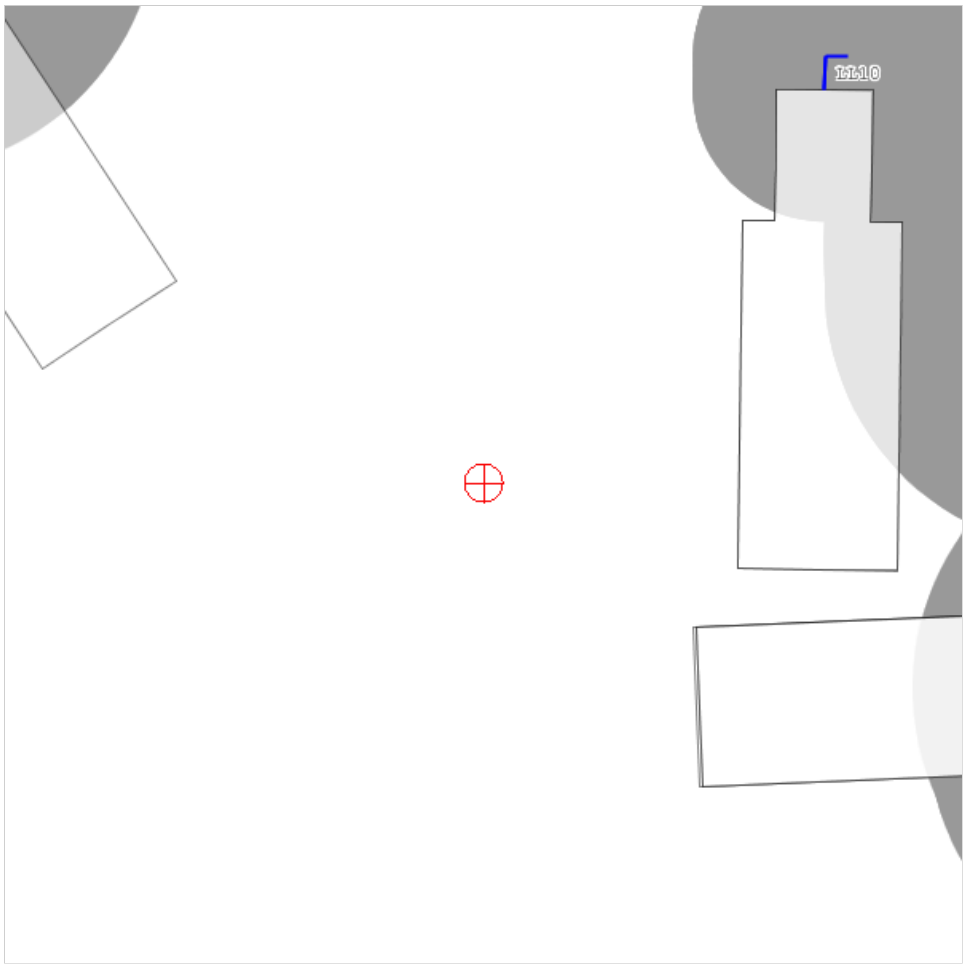
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

* **Structure Type:**	POWER_LINE | Utility Pole Please select structure type and complete location point information.
Latitude:	41 Deg 39 M 1.9 S N
Longitude:	88 Deg 17 M 51.8 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	713 (nearest foot)
Structure Height :	50 (nearest foot)
Is structure on airport:	(●) No ( ) Yes

Results

You do not exceed Notice Criteria.


1L10

Federal Aviation Administration

« OE/AAA

Notice Criteria Tool

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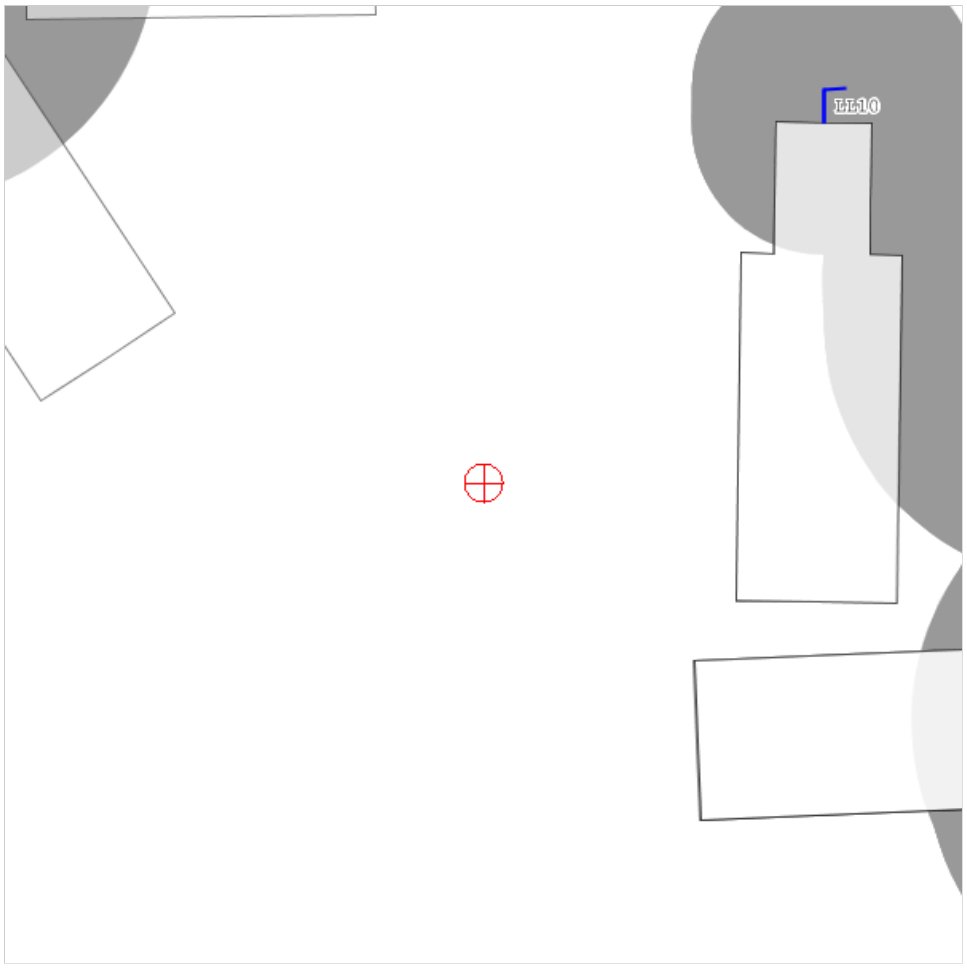
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The tool below will assist in applying Part 77 Notice Criteria.

* **Structure Type:**	POWER_LINE | Utility Pole Please select structure type and complete location point information.
Latitude:	41 Deg 39 M 26.5 S N
Longitude:	88 Deg 17 M 50.8 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	705 (nearest foot)
Structure Height :	50 (nearest foot)
Is structure on airport:	(●) No ( ) Yes

Results

You do not exceed Notice Criteria.


LL10

FORGESOLAR GLARE ANALYSIS

Project: **ILKE240**
Site configuration: **ILKE240 5 Degree Resting Angle**

Created 15 Mar, 2024
Updated 16 Mar, 2024
Time-step 1 minute
Timezone offset UTC-6
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 1 MW to 5 MW
Site ID 114510.19719

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
PV analysis methodology V2



Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Route 1	0	0.0	0	0.0
Route 2	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.37
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	41.650905	-88.298085	717.13	5.00	722.13
2	41.653675	-88.298074	735.50	5.00	740.50
3	41.653703	-88.293910	704.73	5.00	709.73
4	41.650618	-88.293878	708.37	5.00	713.37
5	41.650615	-88.297710	713.78	5.00	718.78
6	41.650908	-88.297716	715.14	5.00	720.14

Route Receptors

Name: Route 1
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	41.650234	-88.300045	733.12	5.00	738.12
2	41.650250	-88.298130	716.14	5.00	721.14
3	41.650328	-88.292209	710.45	5.00	715.45

Name: Route 2
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	41.657489	-88.300405	710.90	5.00	715.90
2	41.657537	-88.296500	707.02	5.00	712.02
3	41.657585	-88.292788	699.41	5.00	704.41

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	41.657933	-88.290868	712.73	10.00
OP 2	2	41.657093	-88.292464	706.51	10.00
OP 3	3	41.656788	-88.295463	714.32	10.00
OP 4	4	41.658360	-88.299205	703.98	10.00
OP 5	5	41.656486	-88.299516	713.16	10.00
OP 6	6	41.655696	-88.299583	720.24	10.00
OP 7	7	41.654943	-88.299937	722.77	10.00
OP 8	8	41.654726	-88.300532	723.85	10.00
OP 9	9	41.653267	-88.298633	741.22	10.00
OP 10	10	41.649275	-88.300768	731.31	10.00
OP 11	11	41.649838	-88.294455	715.32	10.00
OP 12	12	41.650977	-88.288411	711.85	10.00

Obstruction Components

Name: Obstruction 1
Top height: 30.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	41.650209	-88.294929	711.84
2	41.650224	-88.293942	711.59
3	41.649912	-88.293906	712.24
4	41.649898	-88.294025	712.68
5	41.650129	-88.294060	712.00
6	41.650117	-88.294651	712.44
7	41.649953	-88.294682	713.08
8	41.649918	-88.294936	712.34
9	41.650209	-88.294929	711.84

Name: Obstruction 10
Top height: 30.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	41.653680	-88.298114	735.74
2	41.652807	-88.298113	738.38

Name: Obstruction 2
Top height: 30.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	41.656408	-88.298083	705.96
2	41.656537	-88.297753	705.70
3	41.656683	-88.297845	705.20
4	41.656563	-88.298161	704.97
5	41.656408	-88.298083	705.96

Name: Obstruction 3
Top height: 30.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	41.650145	-88.298392	717.31
2	41.650153	-88.299518	724.77
3	41.649824	-88.299510	728.49
4	41.649826	-88.298386	716.14
5	41.650145	-88.298392	717.31

Name: Obstruction 4
Top height: 30.0 ft



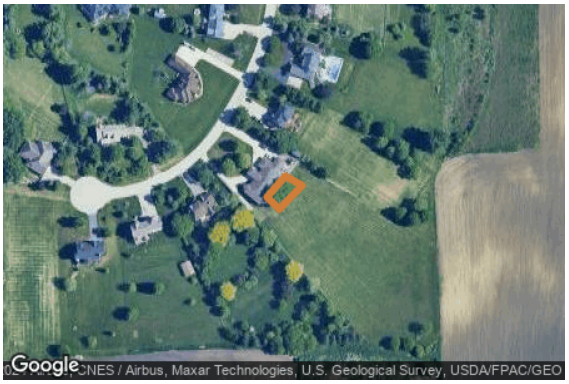
Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	41.649848	-88.300394	734.30
2	41.649864	-88.299927	735.83
3	41.650209	-88.299903	731.45
4	41.650213	-88.300103	733.50
5	41.649954	-88.300096	737.70
6	41.649950	-88.300397	734.88
7	41.649848	-88.300394	734.30

Name: Obstruction 5
Top height: 30.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	41.654618	-88.300521	718.57
2	41.654806	-88.300214	722.83
3	41.654653	-88.300033	715.59
4	41.654445	-88.300426	715.78
5	41.654618	-88.300521	718.57

Name: Obstruction 6
Top height: 30.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	41.654741	-88.299870	715.62
2	41.654892	-88.299674	714.82
3	41.654952	-88.299817	718.88
4	41.654818	-88.299976	718.23
5	41.654741	-88.299870	715.62

Name: Obstruction 7
Top height: 30.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	41.657400	-88.299819	706.52
2	41.657440	-88.298284	704.64
3	41.657206	-88.298244	704.01
4	41.657196	-88.298708	704.77
5	41.657362	-88.298732	704.98
6	41.657368	-88.299145	704.65
7	41.657274	-88.299813	706.79
8	41.657400	-88.299819	706.52

Name: Obstruction 8
Top height: 30.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	41.653971	-88.293676	703.93
2	41.657460	-88.293843	697.45
3	41.657454	-88.293513	696.64
4	41.653613	-88.293451	704.82
5	41.653613	-88.293658	704.46
6	41.653971	-88.293676	703.93

Name: Obstruction 9
Top height: 30.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	41.656484	-88.296222	724.06
2	41.657458	-88.296246	706.96
3	41.657450	-88.295970	711.37
4	41.656893	-88.295938	719.67
5	41.656883	-88.296106	718.99
6	41.656472	-88.296093	722.26
7	41.656484	-88.296222	724.06

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Route 1	0	0.0	0	0.0
Route 2	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0

PV: PV array 1 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Route 1	0	0.0	0	0.0
Route 2	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0

PV array 1 and Route: Route 1

No glare found

PV array 1 and Route: Route 2

No glare found

PV array 1 and OP 1

No glare found

PV array 1 and OP 2

No glare found

PV array 1 and OP 3

No glare found

PV array 1 and OP 4

No glare found

PV array 1 and OP 5

No glare found

PV array 1 and OP 6

No glare found

PV array 1 and OP 7

No glare found

PV array 1 and OP 8

No glare found

PV array 1 and OP 9

No glare found

PV array 1 and OP 10

No glare found

PV array 1 and OP 11

No glare found

PV array 1 and OP 12

No glare found

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.
Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare. This primarily affects V1 analyses of path receptors.
Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.
The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.
The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.
The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

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Kimley»Horn

December 21, 2023

Prepared For: TPE Development, LLC

Prepared By: Tad Hardy, P.E.
Kimley-Horn

Subject: ***Illinois Community Solar - Noise Assessment***

Executive Summary

The purpose of this technical memorandum is to evaluate potential noise levels associated with the operational equipment for a 5MW Community Solar site in Illinois (a "Project"). A Project will consist of solar panels mounted on a racking system spanning 20-40 acres and up to forty (40) string inverters on a single equipment pad within the project area.

Noise Regulations

The Illinois Pollution Control Board (IPCB) noise regulations are based on allowable octave band sound pressure levels during daytime and nighttime hours. According to Title 35 (Environmental Protection), Subtitle H (Noise), Chapter I (Pollution Control Board), Part 901 (Sound Emission Standards and Limitations for Property Line-Noise Sources), a facility operating in an agricultural field (Class C Land) cannot cause an exceedance of sound levels at any point within a residential land use (Class A Land) during daytime hours as shown in **Table 1**.

Table 1: Maximum Allowable Sound Emitted to Class A Land During Daytime Hours

Octave Band Center Frequency (Hertz)	Allowable Octave Band Sound Pressure Levels (dB) of Sound Emitted to any Receiving Class A Land from		
	Class C Land	Class B Land	Class A Land
31.5	**75**	72	72
63	**74**	71	71
125	**69**	65	65
250	**64**	57	57
500	**58**	51	51
1000	**52**	45	45
2000	**47**	39	39
4000	**43**	34	34
8000	**40**	32	32

Since the solar array does not generate power at night, the equipment will not operate at night and will comply with the IPCB nighttime hour limits.

Noise Assessment

Noise levels from anticipated operational equipment likely to be installed at a proposed Project were evaluated to assist with determining a conservative distance that the equipment should be located from the edge of the project boundary.

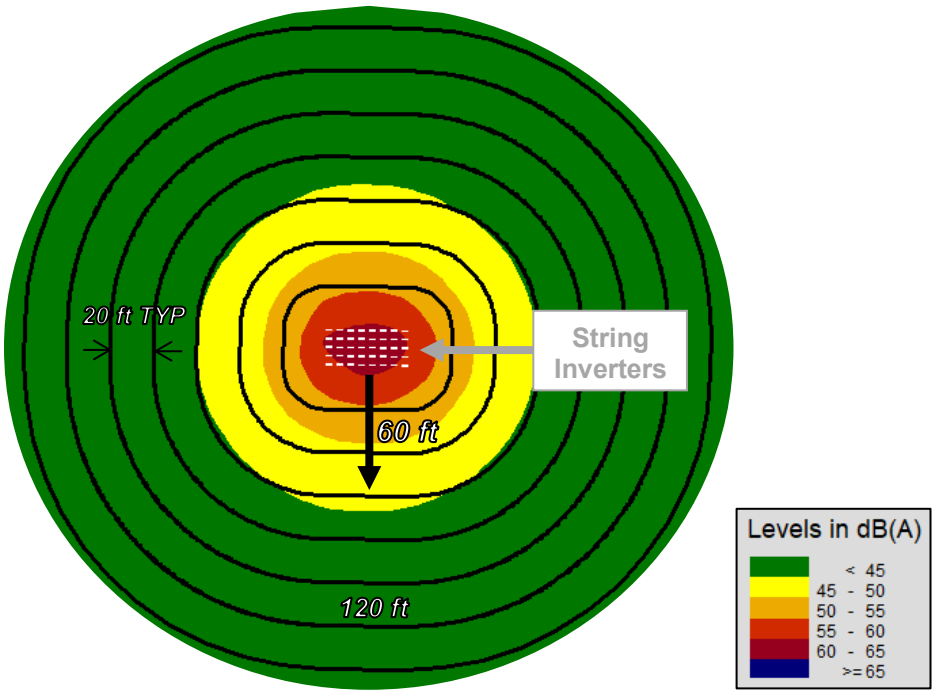
String Inverters

String inverters generate steady, unvarying noise that can create issues when located near noise-sensitive uses. It was assumed that up to forty (40) string inverters would be located on an equipment pad within a proposed solar site. Based on noise emission levels for string inverter equipment, a reference sound level of 65 dB(A) at 1 meter (i.e., 3 feet) for each inverter was used, which is typical for these types of inverters. **Table 2** shows the octave band emission levels for a typical string inverter used for reference. The sound from the simultaneous operation of the string inverters was calculated using SoundPLAN. The anticipated noise level contours from the operation of inverter equipment are shown in **Figure 1**.

Table 2: Sound Emissions for String Inverter

Octave Band Center Frequency	31 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2kHz	4 kHz	8kHz
Frequency Sound Level	58	57	59	59	66	57	56	56	51

Figure 1: Anticipated Noise Level Contours for String Inverter Operations



Recommendations and Conclusions

Based on the analysis of this memo, if the equipment pad is located greater than 40 feet from the project boundary, operational noise levels are anticipated to be in compliance with the IPCB noise regulations. See **Table 3** below for the SoundPLAN-predicted octave band noise levels at a distance of approximately 40 feet from the string inverter equipment pad.

Table 3: Predicted Octave Band Sound Emissions for String Inverter Operations

Octave Band Center Frequency	31 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2kHz	4 kHz	8kHz
Maximum Octave Band SPLs from Inverters	46.8	45.8	44.6	42.5	49.2	42.0	41.7	41.5	35.8

Groundwater / Drinking Water Protection Practices for Agricultural Lands

April 2021

MN RURAL WATER ASSOCIATION

MINNESOTA

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This document was developed to provide guidance to local governments on a range of drinking water/groundwater protection programs and initiatives, including grants from state and federal agencies and public and private conservation easement programs. It will be updated periodically as new information becomes available.

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Introduction

Purpose

This guide was developed to assist local government and watershed staff, water utilities, and other interest groups in identifying the most effective groundwater and drinking water protection strategies for agricultural land in their regions. It draws on the findings of the *Minnesota Nitrogen Fertilizer Management Plan (NFMP)*, the *Minnesota Agricultural BMP Handbook*, and related research to suggest practices – both agricultural and non-agricultural – that will minimize risks to drinking water and public health.

Nitrogen fertilizer (including both artificial fertilizer and manure) is used in current agricultural crop production systems to increase the productivity of these systems. However, nitrate that is not utilized by the crop may leach into the groundwater, where it is a public health concern, especially for pregnant women and infants under six months of age. The drinking water standard, known as the Health Risk Limit, is 10 milligrams of nitrate (measured as nitrogen) per liter of drinking water (mg/L).[1]

Note: *This guide focuses on groundwater as a drinking water source, rather than surface water. Likewise, the focus is on nitrate that originates from agricultural sources, not from other potential nitrate sources such as septic systems.*

The practices in this guide are applicable to public water suppliers, to owners of private wells, and to farmers and agricultural landowners with an interest in managing the land to protect the quality of their drinking water.

The susceptibility of groundwater to contamination from nitrate and other chemicals depends on multiple factors, including properties of soils and geologic materials, land use practices, and climate factors such as the amount and intensity of precipitation.

The practices emphasized in this guide are targeted to protect highly vulnerable drinking water supplies and groundwater resources on soils that are coarse-textured, have shallow depth to groundwater or bedrock, or are located in karst geology. Some of the practices may also be appropriate for marginal soils – those that are erosive, flood-prone, or otherwise less well-suited to row crop agriculture. Many practices align with the Alternative Management Tools[2] (AMTs) identified in the NFMP, defined as "locally developed solutions for addressing groundwater nitrate problems that are implemented on a site-specific basis." AMTs fall into four major categories:

1. **Utilizing new technologies**, such as controlled release fertilizers and precision agriculture;
2. **Developing new crop varieties**, such as varieties that use nitrogen more efficiently;
3. **Increasing continuous cover** through use of perennial crops, cover crops and diversified crop rotations; and
4. **Retiring cropland** through conservation easements and other means.

Managing Risks to Drinking Water Supplies

Groundwater is the source of drinking water for approximately 75% of Minnesota's population, with 54% served by public water systems and 20% by private wells. Based on MDA and MDH monitoring data, elevated nitrate levels in drinking water may indicate the presence of other contaminants, such as

[1] Minnesota Department of Health, "Nitrate in Drinking Water." https://www.health.state.mn.us/communities/environment/water/docs/contaminants/nitratefctsht.pdf

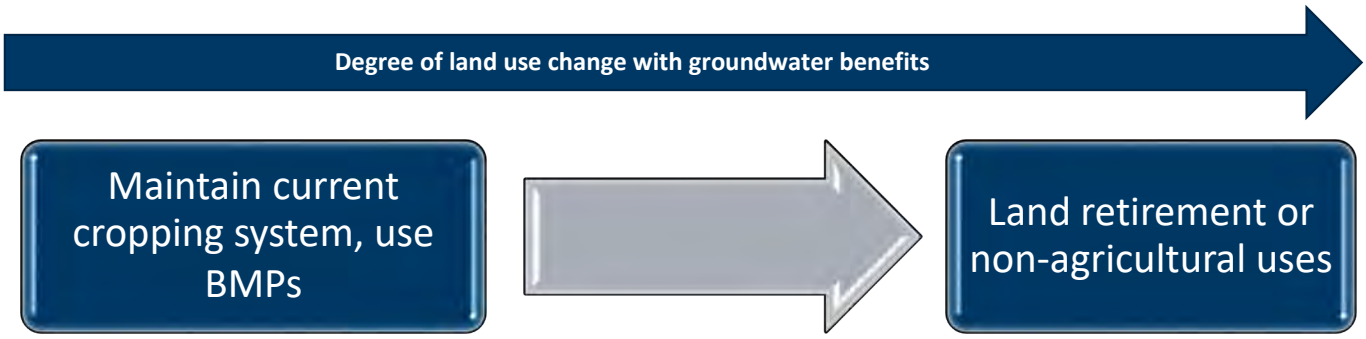
[2] Minnesota Department of Agriculture, "Alternative Management Tools." https://www.mda.state.mn.us/chemicals/fertilizers/nutrient-mgmt/nitrogenplan/nitrogenmgmt/amts

bacteria or pesticides. Preventing nitrate contamination of drinking water supplies is typically much more cost-effective than removing the contamination.[3]

In 2016-2017, 27 public water systems recorded a source water sample between 5 and 10 mg/L of nitrate and 10 systems recorded levels over 10 mg/L. Raw (source) water that exceeds the health risk limit of 10 mg/L nitrate-N is typically blended with water at a lower concentration. However, blending water from deeper wells can also increase the concentration of naturally-occurring chemicals such as iron, manganese, and radium. Some public water suppliers have had to install reverse osmosis treatment systems to remove nitrate and other contaminants to meet state and federal drinking water standards.

Groundwater Protection Practices

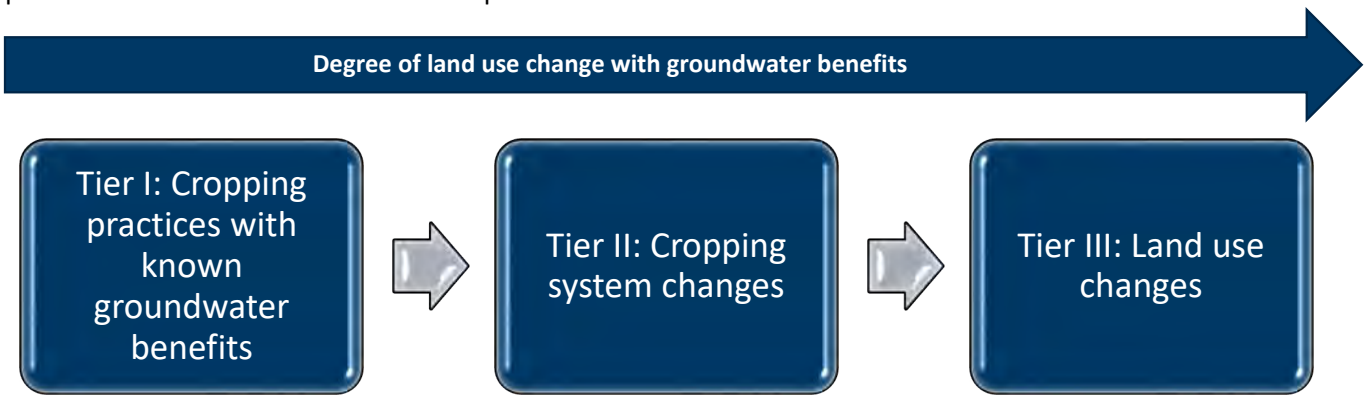
Conservation programs tend to focus mostly on two ends of the groundwater protection spectrum: best management practices (BMPs) applied to the existing cropping system, or land retirement, whether temporary or permanent, often through a conservation easement or conversion to a non-agricultural land use.



In practice, protecting or improving drinking water often depends on efforts made by many individual landowners employing a variety of BMPs, land retirement, and other practices in a given area.

There is increasing interest among conservation professionals and local governments, including public water suppliers, in practices that transition from a system based solely on annual row crops toward one that incorporates perennials and extended crop rotations to improve water quality and soil health.

Agricultural cost-share programs and easement programs can provide technical and financial assistance. However, technical and financial assistance is not always available or adequate for these mid-spectrum practices. The enhanced version of the spectrum looks like this:



[3] https://www.health.state.mn.us/communities/environment/water/swp/reqrec.html#Wellhead

The three tiers are discussed below under "The Groundwater/Drinking Water Protection Spectrum."

Selecting the Right Groundwater Protection Practices

Applicability to Local Water Plans and Watershed Planning

Both local water management plans traditionally developed by counties and the major watershed-scale plans now being developed under the One Watershed One Plan Program must address both surface water and groundwater resource issues. Groundwater Restoration and Protection Strategies (GRAPS) are interagency reports prepared by the Department of Health to inform the One Watershed One Plan process. The GRAPS report compiles information on groundwater resources in a particular watershed to help identify key groundwater quality and quantity concerns.

Water management plans establish a framework for future implementation. If a plan identifies specific groundwater protection strategies, those strategies are more likely to be funded under state and federal grant and cost-share programs.

Working with Producers

The practices outlined in this document may also be helpful to local governments, conservation district and watershed district staff, and others who work with individual producers interested in exploring alternatives to their current mix of crops and methods. Each practice should be evaluated for use at both a farm scale and a field scale for applicability. A variety of conservation programs and practices can be deployed across a single property, depending on its specific mix of resources and vulnerabilities.

Regional Effectiveness

Some of the practices described in this guide are broadly applicable across all agricultural landscapes, while others are likely to be most effective in specific areas. For example, nutrient management practices are most critical on the coarse-textured soils that are most susceptible to leaching of nitrate into groundwater. These soils are primarily found in Minnesota's Central Sands region. Areas of karst topography in southeastern Minnesota are also highly vulnerable, since the fractured limestone bedrock in this region allows nitrate to readily move downward into groundwater.

In highly vulnerable Drinking Water Supply Management Areas (DWSMAs), the most effective practices for reducing nitrate pollution are those that convert land from annual row crops to perennial crops or non-agricultural uses. In less vulnerable areas, practices such as cover crops or crop rotations may be appropriate. A localized assessment of soils, geology, and the mix of crops and livestock in each DWSMA can help to determine an appropriate balance of conservation practices to minimize nitrogen loss.

The Groundwater / Drinking Water Protection Spectrum

As noted above, the major practices discussed in this guide are grouped into three tiers – a generalized set of categories based on the degree to which they change or depart from conventional cropping systems and practices. The level of groundwater protection provided by each practice will vary depending on many factors, including the land area covered, the vulnerability of that land to contamination, and the intensity of the practice. Individual practices may not be sufficient to protect groundwater on their own, but stacking of complementary practices can increase their effectiveness. For example, cover crops combined with crop rotation can reduce the amount of nitrogen fertilizer needed in subsequent years. Practices that improve soil health also improve water retention, enhancing

the effectiveness of irrigation and drainage water management. Note that *practices that primarily benefit surface water quality, such as riparian buffers, conservation tillage and prescribed grazing, are not included in this groundwater/drinking water-focused spectrum*.

Tier I – Cropping Practices with Known Groundwater Benefits. These include management practices that provide measurable benefits within conventional cropping systems that have high potential for nutrient/pesticide leaching, such as continuous corn and/or irrigation.

1. Integrated Pest Management (595)
2. Irrigation Water Management (442) and Irrigation System Sprinkler (449)
3. Irrigation Water Nitrogen Credits
4. Karst Sinkhole Treatment (525)
5. Nutrient Management (590)

Tier II – Cropping System Changes. These involve practices that change or modify cropping systems to lower the inherent risk of nitrogen loss, such as introducing crop rotations with perennial crops.

1. Agroforestry, including Tree Crops / Silvopasture
2. Cover Crops (340), including Harvestable Cover Crops
3. Conservation Crop Rotation (328)
4. Forage and Biomass Planting (512)
5. Perennial Crops for Food, etc.
6. Pollinator Conservation Planting/ Honey Bee Production
7. Specialty and Short-Season Crops (with Cover Cropping, Nutrient Management)

Tier III – Land Use Changes. These practices take land out of agricultural production, transitioning to land retirement or non-agricultural land uses. Land may be converted to natural vegetation and wetlands under several federal and state easement programs, to energy development or to limited urban development combined with open space.

1. Conservation Cover (327), Critical Area Planting (342)
2. Open Space Design/Limited Development
3. Outdoor Recreational Uses
4. Solar Farm with Pollinator Habitat/Perennials

For each of the listed practices, NRCS practice numbers are noted as applicable. Goals are drawn from the "Purposes" section for each NRCS conservation practice standard, focusing on the groundwater-related goals.

Grant, Loan and Easement Programs

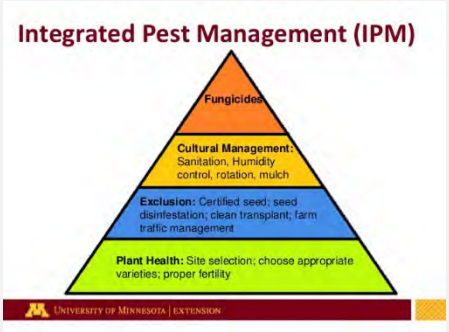
A selection of state, federal, and related programs that support these practices are profiled below under "Grant, Loan and Easement Programs for Groundwater/Drinking Water Protection." Funding is available for most practices through the federal NRCS programs such as the Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program (CSP). Other state and federal programs include:

- AgBMP Loan Program (MDA)
- Minnesota Agricultural Water Quality Certification Program (MAWQCP)
- Conservation Reserve Program (CRP)
- Conservation Reserve Enhancement Program (CREP)
- Other Easement Programs
- Outdoor Heritage Fund (Lessard-Sams Outdoor Heritage Council)
- Projects and Practices (Clean Water Fund) Grants: Drinking Water Subprogram

- Reinvest In Minnesota Reserve (RIM) Program (stand-alone)
- Source Water Projection Grants (MDH)
- Wellhead Protection Partners Grants (BWSR)

Tier I: Cropping Practices with Known Groundwater Benefits

The management practices in this tier are considered to provide measurable benefits within conventional cropping systems that may have naturally high potential for nutrient and pesticide leaching, such as continuous corn and or irrigation.

Practice – Tier I	Regional Effectiveness
Integrated Pest Management (595): Site-specific evaluation and plan for pest management to avoid unnecessary use of pesticides. Methods include herbicide banding rather than broadcast application, conservation tillage, and use of biological pest controls. • Funding: EQIP can provide 50-90% of establishment cost. • NRCS guidance includes practices for mitigating potential negative impacts of pesticides on pollinators using IPM, in *Agronomy Technical Note 9*, 2014. The MDA is responsible for development, promotion and evaluation of pesticide management BMPs. For further information: https://www.mda.state.mn.us/protecting/waterprotection/pmp *Goals: Prevent or mitigate off-site pesticide risks to water quality from leaching, solution runoff, etc. Prevent or mitigate risks to ecosystems from drift and volatilization, and risks to pollinators from contact.* **Impact on groundwater:** By increasing the efficiency of application, IPM can reduce the amount of pesticide and herbicides infiltrating into groundwater by avoiding unnecessary application and reducing rates of application. (MDA 2017).	 All regions
Irrigation Water Management (442) and Irrigation System Sprinkler (449): Determining and controlling the volume, frequency and application rate of irrigation water in a planned, efficient manner. Irrigation sprinkler systems are modified under this practice (449) to use lower-pressure nozzles to improve efficiency and reduce energy use. *Goals: Improve irrigation water use efficiency, minimize soil erosion, decrease degradation of surface and groundwater resources, etc.* **Impact on groundwater:** Research shows that by reducing irrigation water use, irrigation water management can reduce nitrate leaching to groundwater. Split fertilizer applications also reduce loss of nitrate from corn crops on irrigated sandy soils (MDA 2017).	 Most applicable to Coarse-Textured Soils

Irrigation Water Nitrogen Credits: Taking nitrogen fertilizer credits for nitrate present in irrigation water. This is an accompanying practice to Irrigation Water Management – crediting nitrogen from irrigation water reduces the amount of nitrogen fertilizer needed and related costs. "The University of Minnesota recommends crediting nitrogen from irrigation water as part of nitrogen fertilizer best management practices (BMPs) on irrigated soils. Proper nitrogen crediting and use of nitrogen BMP's are tools that will help the irrigator make profitable production decisions and that will also help protect water quality."[4] **Impact on groundwater:** Crediting can reduce fertilizer use, thus reducing potential nitrate leaching to groundwater.	 Most applicable to Coarse-Textured Soils
Karst Sinkhole Treatment (525): Treatment with a vegetated buffer (25 ft. min.) around the sinkhole and management of nutrients and pesticides within the surrounding watershed. *Goals: Improve ground and surface water quality, conserve soil and water resources.* **Impact on groundwater:** Localized impact avoiding leaching and intrusion of nutrients and pesticides around sinkholes.	 Applicable in karst topography - Southeast
Nutrient Management (590): The 4Rs of nutrient management – apply the Right nutrient source at the Right rate at the Right time in the Right place – to improve nutrient use efficiency by the crop and to minimize nutrient losses to the surface and groundwater. The Nitrogen Fertilizer BMPs form the core of the Minnesota Nitrogen Fertilizer Management Plan (NFMP) for groundwater protection. The Alternative Management Tools listed in the NFMP include detailed descriptions of advanced nutrient management such as variable rate applications and remote sensing (i.e., precision agriculture), sub-surface banding and controlled-release fertilizer methods. The Groundwater Protection Rule and extensive guidance materials outline practices for each Nitrogen BMP Region and for Coarse-Textured Soils (Sand Plain and localized areas). The rule: • Restricts the application of nitrogen fertilizer in the fall and on frozen soils in areas with vulnerable groundwater and in DWSMAs with elevated nitrate (≥5.4 mg/L) • Can require mitigation practices in DWSMAs with elevated nitrate greater than 8.0 mg/L if BMPs are not followed or if	 Most applicable to Coarse-Textured Soils

[4] http://www.chsprairielakes.com/about-us/latest-news/irrigation-water-nitrogen-crediting-service/

nitrate in groundwater increases.[5] Localized planning, assessment and modeling work may all be needed to determine the actual need for N reduction. *Goals (NRCS): Minimize pollution of surface and groundwater resources; conserve nutrients for plant production, improve soil health, etc.* **Impact on groundwater:** Nitrate loss to groundwater is high in coarse-textured soils, especially with irrigation. Reducing N rate (through use of in-season split applications, appropriate N source and inhibitors) and eliminating N applications during periods of little or no plant uptake (such as Fall through Preplant) will have the greatest impact on N leaching. However, it can be difficult to achieve sufficient reductions without reducing N application below the economically optimum rate (MDA 2017). Manure management methods to reduce water quality impacts include techniques such as stacking solid manure on a concrete pad and using water diversion systems, catch basins, and grass buffer strips to hold and filter runoff.[6] Land application of manure must meet setbacks from water features and use agronomic rates. Proper crediting of N in manure can reduce the need for fertilizer application. See MPCA guidance on land application of manure.	

Tier II: Cropping System Changes

These practices modify or change management of conventional summer annual crops to include longer crop rotations with small grains or perennials, forage and biomass planting, cover crops, and grazing practices that utilize forage crops. Because the return on these practices is more uncertain, higher incentives – and longer contracts with farmers – than those available through EQIP or other federal programs may be necessary. State funding programs have generally not been oriented toward establishment of harvestable perennial crops, but this approach is now being used in a few key wellhead protection areas to support planting of Kernza[7] and alfalfa and has potential for broader applicability.

[5] Groundwater Protection Rule has exceptions and detailed provisions not captured in this summary. See https://www.mda.state.mn.us/nfr for details.

[6] See https://extension.umn.edu/manure-management/tips-reduce-water-quality-issues. State rules (MR 7020.2125) establish requirements for manure stockpiling sites and MPCA provides detailed technical guidelines for this practice.

[7] https://www.mda.state.mn.us/2020-2021-forever-green-projects

Practice – Tier II	Regional Effectiveness
Agroforestry, including Tree Crops / Silvopasture: See Alley Cropping (311), Tree and Shrub Establishment (612) and Woody Residue Treatment (384) "Agroforestry is the intentional combining of agricultural and forestry practices to improve environmental quality, productivity, and economic returns." (UM Extension). • Practices include alley cropping, windbreaks, living snow fences, silvopasture (integrating livestock grazing and tree planting), riparian buffers • Alley cropping may be used to improve soil health, reduce runoff and erosion, increase carbon storage, etc. Plantings include fast-growing woody species or nut or fruit trees, nursery stock trees, etc. • No cost information is available – length of time to maturity is obstacle for some tree crops. *Goals (NRCS): Enhance or diversify a farm enterprise, improve water quality, reduce excess nutrients in runoff and groundwater, reduce soil erosion, increase carbon storage, wildlife habitat, etc.* **Impact on groundwater:** Similar impacts to riparian forest buffers (390, 391) and vegetative filters. Riparian vegetation can promote the settling of sediment and associated pollutants, including nitrates. However, Nitrogen removal varies widely by buffer width, hydrological flow path, and vegetative cover (MDA 2017).	 Potentially valuable against wind erosion in western MN Potential in SE, SC, historically forested "Big Woods" region
Cover Crops (340): Grasses, legumes, and forbs planted for seasonal vegetative cover, soil health, water retention, etc. Many cover crops are grazed and some can be harvested for food or forage. • Funding availability: EQIP, CSP, AgBMP Loan Program, and several SWCD and other LGU programs • NRCS-MN offers a detailed Cover Crop Seeding Guide (Technical Note 33) and calculation tool. • Additional cover crop calculator tools are available that quantify costs and benefits.[8] • Minnesota Cover Crop Research from the Minnesota Office for Soil Health • Growing season length, lack of needed equipment and logistics, and the trial-and-error nature of practice are frequently-cited obstacles to widespread adoption. • Cover crops have great potential in combination with short-season crops, e.g., canning crops, small grains. • Harvestable cover crops include winter camelina, pennycress, winter rye. Many cover crops can also be grazed. (Winter	 

[8] http://mccc.msu.edu/selector-tool/

Practice – Tier II	Regional Effectiveness
camelina is approved by NRCS as a recommended cover for MN.) *Goals: Reduce erosion, reduce water quality degradation by utilizing excessive soil nutrients, improve soil health and organic matter, etc.* **Impact on groundwater:** Cover crops can take up nutrients that would otherwise be lost from the field through surface or drainage water or infiltration. Studies in Minnesota and Iowa show reductions in nitrate loads in drainage water by over 60% with rye and oat cover crops (MDA 2017). Studies of winter camelina in particular show large decreases in nitrate loads in groundwater.	All regions, currently most widely used in South, Southeast
Conservation Crop Rotation (328): Planned succession of crops on the same field, including at least one low nitrogen input crop or two or more years of hay in a 5-year rotation. Studies suggest crop rotation leads to more efficient recovery of N by crops and is more effective at limiting nitrate leaching than timing of N fertilizer applications. • Various models of crop rotation include: 1) Adding perennials; 2) Extended rotation with small grains; 3) Grazed pasture in a 6-7 year rotation (consider no-till planting alfalfa after soybeans).[9] • Funding: EQIP; AgBMP Loan Program for capital costs. CSP also funds crop rotation to address soil erosion, organic matter improvement, and other soil health improvements. • If goal of practice is to reduce water quality degradation due to excess nutrients, NRCS practice standard recommends deep-rooted crops with quick germination and root system formation. *Goals: Reduce erosion and water quality degradation; improve soil moisture efficiency; provide feed and forage for livestock, food and cover habitat for wildlife, etc.* **Impact on groundwater:** Research indicates that perennial grasses and alfalfa have substantially less nitrate loss than row crops in a corn-soybean rotation (MDA 2017). A 4-year rotation incorporating alfalfa has been shown to have greater benefits than a 2- or 3-year rotation. Conservation crop rotation can lead to more efficient use of nitrogen (N) by crops, requiring less N input and less N susceptible to leaching.	  All regions, but most important for Central Sands, SE, SW

[9] NRCS, Iowa: Cropland Conservation Practices https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd332005.pdf

Practice – Tier II	Regional Effectiveness
Forage and Biomass Planting (512): Perennial vegetation utilized for pasture, hay, or biomass production. • Funding availability: EQIP, CSP, AgBMP Loan Program • Costs will differ widely depending on crop and practice. • Often in combination with Prescribed Grazing (528), and Forage Harvest Management (511) for hay, silage, haylage. *Goals: Improve livestock nutrition, health, soil and water quality, reduce erosion, produce feedstock for biofuel, etc.* **Impact on groundwater:** Similar to Conservation Crop Rotation above, planting of forage and biomass crops can reduce nitrate leaching compared to row crops in a corn-soybean rotation. According to an NRCS study, "once established, these perennial species… improve water infiltration, reduce runoff, retain nutrients that might otherwise enter a waterway… build soil organic matter [and] increase soil nitrogen through root and nodule turnover."[10]	 Central Sands, SE, SW – link to cattle on landscape and markets for hay / biomass
Perennial Crops for Food, etc. (Conservation Crop Rotation (328); not included under forage and biomass crops above): • Alfalfa • Kernza for food (the grain of intermediate wheatgrass, already classified as a forage crop) is now recognized by NRCS as part of Conservation Crop Rotation (328); allows grazing and grain harvest in one season. • Other emerging crops such as tree crops (hazelnuts, elderberries), perennial sunflowers, etc. • Small grains (oats, barley, flax) • Funding availability is uncertain but is becoming available in wellhead protection areas under approved watershed management plans (One Watershed One Plan). The potential for incorporating perennial crops into additional NRCS conservation practices is being explored. (Practice has been available for organic transitions but not conventional crops.) **Impact on groundwater:** Research indicates substantial reductions in nitrate leaching from Kernza and alfalfa (FGI, 2020). Small grains if followed by cover crops/relay crops can maximize cover crop benefits.	 Potentially all regions, with variability by crop

[10] Barker, D., et. al. 2012. Forage and Biomass Planting. Chapter 2 in *Conservation Outcomes from Pastureland and Hayland Practices: Assessment, Recommendations, and Knowledge Gaps*. NRCS. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1080494.pdf

Practice – Tier II	Regional Effectiveness
Pollinator Conservation / Honey Bee Production (multiple NRCS practices, but primarily Conservation Cover (327)): The Xerces Society has developed various guidance documents under 327[11]. See also "Conservation Work for Honeybees" – over three dozen NRCS conservation practices provide benefits to pollinators. EQIP funding provides additional incentives for including pollinator habitat as a supplement to other practices. **Impact on groundwater:** Research in this area is ongoing. Impacts are likely similar to those of Forage and Biomass Plantings (above).	 All regions
Specialty and Short-Season Crops (with Cover Cropping, Nutrient Management): Alternative small-scale specialty crops – including organic crops – can be part of a transition from a corn-soy monoculture.[12] If cultivated intensively, these crops can pose as great a concern as row crops for nitrate contamination. However, if combined with cover cropping and effective nutrient management, these practices can be effective in protecting groundwater. • Specialty crops are defined by the USDA as: fruits and vegetables, tree nuts, dried fruits, horticulture and nursery crops, floriculture, and processed products with 50% or more specialty crop content. • Canning crops and other short-season crops are considered "low-hanging fruit" for cover cropping, (due to longer time for cover crop establishment). • MDA offers Specialty Crop Block Grants (USDA-funded) to improve operational efficiencies, reduce costs or other barriers, increase access to distribution systems and new markets; and for research and development, compliance with federal standards. • Renewing the Countryside offers Specialty Crop Enhancement Teams in southeast and south central Minnesota. Program is intended to help edible specialty crop producers overcome obstacles, increase profits and grow operations. • U MN Extension Regional Sustainable Development Partnership Program works to develop supply chains for crops and systems that increase diversity on the landscape, by connecting U of MN researchers with community innovators.	  All regions, depending on crop and seasonal extension methods

[11] Biology Jobsheet #18: Establishment of Introduced Grasses and Legumes; Honey Bee Habitat (2016)

Biology Jobsheet #16: Native Habitat Development for Pollinators, Honey Bees and Monarchs (2018)

Biology Tech. Note No. 78: Using 2014 Farm Bill Programs for Pollinator Conservation (2015)

[12] USDA provides resources for small and mid-sized producers: https://www.usda.gov/topics/farming/resources-small-and-mid-sized-farmers

Practice – Tier II	Regional Effectiveness
• FSA Organic Certification Cost-Share funding available for organic certification, up to 75% of costs. • FSA microloan programs available for small, beginning, and non-traditional farm operations such as truck farms, CSAs, etc. **Impact on groundwater:** This strategy is designed to improve the economics of alternative practices, not to directly impact groundwater resources.	

Tier III: Land Use Changes

These practices take land entirely or partially out of agricultural production, placing it into wildlife habitat, protected open space, or other land uses, including options for limited development. Funding through federal and state easement programs and private not-for-profit land trusts and conservation organizations may be available. Funding through the Outdoor Heritage Fund (see below under Programs) is available for many habitat-related land retirement programs.

Practice – Tier III	Regional Effectiveness
Conservation Cover (327); Critical Area Planting (342): Conversion of land from an intensive cropping system to permanent native or non-native vegetation. Generally undertaken under one of the easement or land retirement programs listed below under "Programs." *Goals: Reduce soil erosion, soil quality degradation; improve water quality, develop wildlife habitat, reduce air quality impacts.* **Impact on groundwater:** Conservation cover reduces nitrate losses in surface runoff by significant amounts (MDA 2017). Additional research on groundwater impacts are needed; however, conversion of land in vulnerable DWSMAs from row crops to conservation cover has resulted in decreases in nitrate concentrations.	 All regions
Open Space Design/Limited Development: The concept of "limited development" is used by land trusts, other nonprofits, and private developers to protect significant natural areas or public open space while allowing development of less sensitive portions of a site. Leading organizations in this sphere include The Nature Conservancy (TNC), the Trust for Public Land, and the Minnesota Land Trust. These non-profits have partnered with DNR and other agencies to conduct land transactions, since they can often move more quickly than public agencies. Private developers have also employed conservation design techniques to protect significant open space, often using easements for permanent protection. • TNC – "has bought land in critical conservation areas (especially land that buffers and surrounds core natural areas), placed conservation easements on the land and then resold the restricted property. This is referred to as a "conservation buyer" project."	 All regions, given proximity to urban areas, sufficient development pressure Photo: Fields of St. Croix Conservation Development, Lake Elmo

Practice – Tier III	Regional Effectiveness
• In a DWSMA, any development would need to treat all stormwater to a very high level or move it off the site for treatment. • Grants to LGUs and other consortiums could be used for this purpose. **Impact on groundwater:** Impacts are likely to be indirect but are contingent on the manner in which open space and other land uses are designed.	
Outdoor Recreational Uses: Includes game farm/hunting preserve, wildlife management areas, waterfowl production areas, etc. • Worthington Wells WMA is one example of conversion of cropland to public wildlife management area. (Pheasants Forever, DNR, and multiple partners protect over 95% of highly vulnerable acres in Worthington DWSMA.) **Impact on groundwater:** Similar to Conservation Cover.	 All regions; vulnerable DWSMAs
Solar Farm with Pollinator Habitat/Perennials: Many solar installations include native prairie plantings. BWSR offers a Habitat Friendly Solar Program that promotes the planting and management of wildlife habitat with an emphasis on pollinator benefits on solar projects Project sponsors must use DNR's Prairie Establishment & Maintenance Technical Guide for Solar Projects, fill out BWSR's Solar Site Pollinator Habitat Assessment form for Project Planning, and work with habitat restoration experts. A follow-up assessment is required after three years of vegetation establishment and every three years afterwards. **Impact on groundwater:** Research is ongoing, but impacts are likely to be similar to those of Conservation Cover and/or Forage and Biomass Planting.	 All regions, depending on access to power grid

Grant, Loan and Easement Programs for Groundwater/Drinking Water Protection

This section highlights several federal and state grant and loan programs that can be targeted toward groundwater protection. It does not encompass all programs and may not capture the most recent guidance (since programs can change from year to year), but rather is intended as a starting point for further exploration.

AgBMP Loan Program: This MDA program provides low-interest loans to farmers, rural landowners, and agriculture supply businesses to solve existing water quality problems. The purpose is to encourage agricultural Best Management Practices that prevent or reduce runoff from feedlots, farm fields and other pollution problems identified by the local government in water plans.	
MN Ag Water Quality Certification Program (MAWQCP): A voluntary program for farmers and agricultural landowners to proactively implement water quality conservation practices and management into comprehensive farm management systems. The program is a partnership with federal, state, public, and private collaborators. Certification systematically identifies and then mitigates risks to water quality on a field-by-field basis; every field and crop on a farm must meet MAWQCP's criteria. Participants receive priority for technical and financial assistance to implement practices and improve soil health. Farmers who become MAWQCP-certified obtain regulatory certainty for ten years as complying with any new water quality rules or laws during that time.	
Environmental Quality Incentive Program (EQIP): Voluntary conservation program from NRCS that helps agricultural producers in a manner that promotes agricultural production and environmental quality as compatible goals. Through EQIP, agricultural producers receive financial and technical assistance to implement structural and management conservation practices that optimize environmental benefits on working agricultural land. Eligible practices, payment rates, prioritization of resource concerns, and ranking criteria are developed based on input and recommendations from both the State Technical Advisory Committee (STAC) and Local Work Groups. Although EQIP is available statewide, eligibility criteria, complicated procedures and limited funding can all reduce participation. The 2018 Farm Bill specifies that 10% of financial assistance must be dedicated to source water protection.	
Conservation Stewardship Program (CSP): For producers already implementing conservation practices, CSP offers opportunities to expand on these efforts by offering enhancements and additional practices. In Minnesota, CSP applications are evaluated on a regional basis addressing priority resources concerns within four geographic regions. CSP contracts are for five years with an option to renew. CSP offers two types of payments: 1. Payments to maintain the existing level of conservation based on the land uses included in the contract and NRCS assessment of existing stewardship, and 2. Payments to implement additional conservation activities.	

Conservation Reserve Program (CRP): A program of the USDA's Farm Service Agency, CRP provides annual rental payments to producers to increase conservation practices on ecologically sensitive cropland and pastureland. Includes Continuous, General, Grasslands, and CREP (listed below). Under general CRP sign-up, producers submit competitive bids during specified enrollment periods, and contracts are scored and awarded based on an environmental benefits index. Under continuous sign-up, environmentally sensitive agricultural land can be devoted to conservation practices and enrolled in CRP at any time. The CRP Grasslands program allows grazing, but for a lower payment than typical CRP payments. Producers are generally given ten- to 15-year contracts with annual rental payments and restoration cost-share assistance. Haying, grazing, or other income-producing activities allowed, but with a significant penalty.

The disadvantages of CRP are its temporary nature, limited availability, and declining land base. In Minnesota, CRP has declined from 1.83 million acres in 2007 to 1.03 million acres in 2020.

CRP enrollment was capped at 24 million acres nationally by 2018 in the 2014 federal Farm Bill. The 2018 Farm Bill raised the cap to 27 million acres.





Conservation Reserve Enhancement Program (CREP): A state-level sub-program of CRP, with the federal government contributing up to 80 percent of the cost of the CREP. The current Minnesota CREP was approved in 2017 with the goal of taking marginal land out of production and replacing it with natural vegetation and wetlands that protect water quality and provide increased habitat. It includes $350 million from USDA and $150 million from the State of Minnesota. In this new CREP, up to 60,000 acres can be enrolled across 54 counties, primarily targeting riparian and marginal agricultural land. CREP combines an initial 15-year CRP contract with a permanent RIM easement. Payments are based on current CRP rental rates and RIM rates that approximate 90% of the value of the land. CREP payments will always be higher than those provided for BMPs or contracts for other practices. Payment rates were updated in 2018.

CREP encompasses four practices, one of which is wellhead protection (CP-2). The other three practices are Grass Filter Strips (Buffers) and Wetland Restoration (non-floodplain and floodplain).

In limited situations RIM-only cropland and non-cropland may be allowed as a part of a MN CREP application to make the easement area more manageable and to provide greater benefits to the landowner and the resources. (See also RIM stand-alone summary below).



Applies in designated counties in southern and western Minnesota

Other Easement Programs:

- **Private and Local Easement Programs:** A number of private not-for-profit conservation organizations and LGUs work with landowners to restore high quality natural habitat on their lands, typically through conservation easement. Easement-holders in Minnesota include the Minnesota Land Trust, The Nature Conservancy, Pheasants Forever, and a number of local and regional foundations and governments. Dakota County operates an easement program to protect farmland and natural areas, and Washington County purchases conservation easements on high priority conservation areas.
- **Wetland Reserve Easements (WREP):** Under the Wetlands Reserve Easements program, NRCS helps to restore, protect and enhance enrolled wetlands. Eligible lands include:
    - Farmed or converted wetlands that can successfully be restored;
    - Croplands or grasslands subject to flooding; and
    - Riparian areas that link protected wetland areas.

https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/acep/



Photo: Vermillion River, Dakota County. Vermillion River Watershed JPO

Outdoor Heritage Fund (Lessard-Sams Outdoor Heritage Council)

The Lessard-Sams Outdoor Heritage Council (LSOHC) provides annual funding recommendations to the legislature from the Outdoor Heritage Fund, one of four funds created by the Clean Water, Land and Legacy Amendment. Funding is allocated to projects that restore, protect, and enhance wetlands, prairies, forests, and habitat for fish, game, and wildlife. Proposals must be consistent with the Council's visions for Minnesota's ecological sections. Agricultural regions of the state generally fall into the Prairie, Forest/Prairie Transition, and Southeast Forest ecological sections. Funding goes to state agencies, local governments, and conservation organizations for land and easement acquisition and habitat restoration programs.



Projects and Practices (Clean Water Fund) Grants: Drinking Water Subprogram: This competitive CWF grant administered by BWSR makes an investment in on-the-ground projects and practices that will protect or restore water quality in lakes, rivers or streams, or will protect groundwater or drinking water. Surface water activities are the focus of the primary Projects and Practices grant.

The Drinking Water Subprogram sets aside up to 20% of the total available funding for projects that protect drinking water. Appropriate practices could include soil health practices, perennial crops, increased incentives for conservation practice adoption, stormwater treatment and sealing of unused public or private wells. (See factsheet, Clean Water Fund Drinking Water Protection Grant).



All regions
Photo Minnesota River Basin Data Center

Reinvest In Minnesota Reserve (RIM) Program - stand-alone program: The primary land acquisition program for state-held conservation easements and restoration of wetlands and native grasslands on private lands in MN. Payment is a lump sum after the easement is recorded, based on Assessor's Township Average Market Values (ATAMV) for tillable land (updated annually by BWSR). RIM been primarily used in combination with CREP recently, since that maximizes leverage over federal funds. However, stand-alone RIM will be considered in situations where CREP is not feasible or acceptable.	 All regions
Source Water Protection Grants: These MDH-administered Clean Water Fund grants to public water suppliers provide funding in various categories: • Plan Implementation Grants: To implement MDH-approved wellhead protection plans for community or nontransient noncommunity water suppliers. Maximum $10,000; no match required. • Competitive Grants: To implement source water protection practices and manage potential contamination sources, whether or not a wellhead protection plan is in place. Maximum $10,000 ($30,000 for combined applications); match required. • Transient grants: To support wellhead protection measures addressing potential contamination sources for noncommunity transient systems such as campgrounds, lodging, etc. Maximum $10,000; match required.	 Activities within DWSMAs
Wellhead Protection Partner Grants: This pilot program from BWSR allows grants to local governments for perpetual or long-term protection of wellhead protection areas with very high or high vulnerability supplies. In cases where CREP or RIM-only easements are not feasible, grants can be used to protect the wellhead area by easement, fee acquisition, or other long-term (20-year minimum) protection mechanism.	 DWSMAs with high or very high vulnerability

References

MDA. 2017. (Lenhart, C., & Peterson, H.) *Agricultural BMP Handbook for Minnesota 2017*. Available through the Minnesota Digital Water Research Library: https://wrl.mnpals.net/islandora/object/WRLrepository:2955

MDA. 2015. *Minnesota Nitrogen Fertilizer Management Plan*. https://www.mda.state.mn.us/pesticide-fertilizer/minnesota-nitrogen-fertilizer-management-plan

MPCA. 2014. *The Minnesota Nutrient Reduction Strategy.* St. Paul. https://www.pca.state.mn.us/water/nutrient-reduction-strategy

NRCS. Cropland Conservation Practices for Protecting Groundwater. USDA, MN Rural Water, University of MN Extension, MN Departments of Agriculture and Health.

Warner, Richard. 2019. Policies and Programs Supporting Perennial Farming Systems to Protect Drinking Water Sources in Minnesota. Green Lands Blue Waters.

Acronyms

ACEP	Agricultural Conservation Easement Program
BMP	Best Management Practice
CRP	Conservation Reserve Program
CREP	Conservation Reserve Enhancement Program
DNR	Minnesota Department of Natural Resources
DWSMA	Drinking Water Supply Management Area
FSA	Farm Service Agency
MAWQCP	Minnesota Agricultural Water Quality Certification Program
MDA	Minnesota Department of Agriculture
MDH	Minnesota Department of Health
MPCA	Minnesota Pollution Control Agency
NRCS	Natural Resources Conservation Service
RIM	Reinvest in Minnesota Reserve Program
SWCD	Soil and Water Conservation District
USDA	U.S. Department of Agriculture

Health and Safety Impacts of Solar Photovoltaics:

A California-Focused Forward to the Health and Safety Impacts of Solar Photovoltaics white paper published by the N.C. Clean Energy Technology Center at North Carolina State University in May 2017

By: Thomas H. Cleveland, P.E., lead author of the North Carolina white paper
RE: Soscol Ferry Road Solar, a proposed 1.98 MW_{AC} PV facility in Napa, CA
Date: July 31, 2019

For the last several years North Carolina (NC) has trailed only California in the capacity of annual solar photovoltaic (PV) installed. For most of that time North Carolina's PV development was nearly entirely distribution-connected ground-mounted solar facilities, most commonly 5 MW_{AC} projects. More recently, North Carolina is developing a mixture of transmission-connected PV facilities between 20 and 75 MW_{AC} and distribution-connected facilities of 1 to 5 MW_{AC}, but still has relatively few commercial or residential PV projects. As the state quickly transitioned from zero utility-scale solar facilities to over 400 utility-scale solar facilities concerns about the health and safety impacts of photovoltaics were raised at countless public hearings across the state and in many meetings of state officials and regulators, including several NC general assembly committee meetings. These concerns led to several years of engagement on this topic by the NC Clean Energy Technology Center at North Carolina State University that resulted in a detailed, peer-reviewed university white paper on the latest scientific understanding regarding PV health and safety impacts, with a focus on North Carolina.

Naturally, there is also interest in the potential health and safety impacts of PV in California, where there is significantly more installed solar capacity than in North Carolina, in a mixture of residential, commercial, and small- and large-scale ground-mounted utility-scale solar projects. While there are massive similarities between the PV installations and their potential health and safety impacts in each state, there are some differences in policy, climate, industry practices, electricity regulation, and more that are worth highlighting. This forward is an attempt by the lead researcher and author of the North Carolina white paper to provide a supplement to the original paper that clearly demonstrates the applicability of the paper to PV in California and to offer California-specific supplements or modifications where the original paper had a North Carolina focus.

Most importantly, all the white paper's conclusions about the negligible negative health and safety impacts of photovoltaics apply fully in California, as well as anywhere in the United States. Similarly, there is nothing unique about the 1.98 MW_{AC} Soscol Ferry Road Solar project that would cause any health or safety impacts different than those discussed in the N.C. white paper.

Throughout the white paper there are instances of North Carolina-specific information, or issues where the situation in California is different than it is in North Carolina. The following is a list of the significant instances of either situation, in the order they appear in the white paper, along with the relevant California-specific information.

- Type of PV Technology Used: Crystalline silicon, Cadmium Telluride (CdTe), and CIGS are all being installed in California as they are in N.C. Since the publication of the N.C. report the author has confirmed the recent installation of utility-scale projects using CIGS modules, but these are still not common. Like in NC, the majority of the current PV installation capacity in California is crystalline silicon, also like NC these are generally Tier I modules. The Soscol Ferry Rd. project will use Tier I crystalline silicon modules.
- Design Wind Speed: The ASCE 7-2016 design wind speed in the vast majority of California, including in Napa County where the Soscol Ferry Road Solar project is located, is 90-95 MPH, which is much lower than the design wind speeds of hurricane-prone eastern N.C. where most PV development in the state is located. A few mountainous regions of California have design wind speeds over 100 MPG, however these extreme

terrains are unlikely to install ground-mounted PV systems.

- Offset Electricity Fuel Mix: The white paper includes a rough estimation that the fuel mix of the generators offset by PV energy production in N.C. is 90% natural gas and 10% coal. From this mix an estimate of the reduction in cadmium emissions due to PV was calculated. The 10% coal estimate is certainly too high for California. An offset fuel mix for California could be reasonably estimated as 100% natural gas, resulting in about 75% of the cadmium emissions savings calculated for NC.

- PV Module Recycling: The white paper included local reports from PV developers in North Carolina of recycling damaged PV modules. It is quite possible that the same is occurring in California, but the author does not have data on the current common waste management practices for damaged PV modules in California. The Electric Power Research Institute (EPRI) published two extensive reports on the Photovoltaic Module Recycling in the United States (April 2018) and Insights in Photovoltaic Recycling Processes in Europe (December 2017), which are great sources for current information on PV module recycling. The EPRI report on recycling in the U.S. states that there are commercial recyclers in the U.S. accepting and recycling PV modules, using processes not unlike those described in the white paper.

- PV Module Washing: Unlike North Carolina, many regions of California regularly experience long periods of time with little to no rain, which can result in enough accumulation of dirt on the PV modules that it justifies occasionally washing the modules to renew their performance. In North Carolina there is generally a heavy rain often enough to keep the panels clean enough to not require manual panel washing. This difference does not have an impact on the health or safety impact of the photovoltaic modules other than perhaps some increased risk of electric shock when washing the modules. Proper installation, maintenance, and washing techniques should reduce this risk to near zero.

- Vegetation Maintenance: The climate in many regions of California, including Napa County where the Soscol Ferry Road Solar project is located, cause the growth of vegetation requiring maintenance to be less vigorous than the vegetation in moist North Carolina. Thus, PV sites in California use similar vegetation maintenance techniques to North Carolina however they need to spend less time and make fewer trips to adequately maintain vegetation on site.

- California Hazardous Waste Policy:
  - As explained in the white paper, in the United States a waste material is considered hazardous waste if the results of a Toxicity Characteristic Leaching Procedure (TCLP) test find concentrations of any of 40 hazardous chemicals above the allowed EPA concentration limit for that chemical. However, in California, materials must additionally meet the more stringent Hazardous Waste Control Law (HWCL), which is like the Reduction of Hazardous Substances (ROHS) directive, adopted in February 2003 by the European Union (EU).[i]
  - In 2015, California passed SB-489 directing the CA DTSC (Department of Toxic Substances Control) to write rules to reclassify PV modules as universal waste, even if they fail TCLP. These rules exclude physically damaged, fractured, or fragmented PV modules that are no longer recognizable as PV modules.[ii] A primary goal of the legislation is to allow producers of waste PV modules to avoid difficult and costly waste determination procedures. In April 2019 the CA DTSC proposed rules to implement SB-489. After the public comment period that ended in June 2019 DTSC may adjust and adopt the rules.[iii]

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[i] *Program on Technology Innovation: Feasibility Study on Photovoltaic Module Recycling in the United States, Technical Update, April 2018*; Electric Power Research Institute (EPRI); April 2018.

[ii] ibid

[iii] (webpage) Beveridge & Diamond law firm; News alert: California Department of Toxic Substances Control Proposes Regulation Classifying Discarded Solar Panels as Universal Waste ; https://www.bdlaw.com/publications/california-department-of-toxic-substances-control-proposes-regulation-classifying-discarded-solar-panels-as-universal-waste/ (last accessed 7/22/2019)

NC CLEAN ENERGY
TECHNOLOGY CENTER

Health and Safety Impacts of Solar Photovoltaics

MAY 2017



NC STATE UNIVERSITY

Health and Safety Impacts of Solar Photovoltaics

The increasing presence of utility-scale solar photovoltaic (PV) systems (sometimes referred to as solar farms) is a rather new development in North Carolina's landscape. Due to the new and unknown nature of this technology, it is natural for communities near such developments to be concerned about health and safety impacts. Unfortunately, the quick emergence of utility-scale solar has cultivated fertile grounds for myths and half-truths about the health impacts of this technology, which can lead to unnecessary fear and conflict.

Photovoltaic (PV) technologies and solar inverters are not known to pose any significant health dangers to their neighbors. The most important dangers posed are increased highway traffic during the relative short construction period and dangers posed to trespassers of contact with high voltage equipment. This latter risk is mitigated by signage and the security measures that industry uses to deter trespassing. As will be discussed in more detail below, risks of site contamination are much less than for most other industrial uses because PV technologies employ few toxic chemicals and those used are used in very small quantities. Due to the reduction in the pollution from fossil-fuel-fired electric generators, the overall impact of solar development on human health is overwhelmingly positive. This pollution reduction results from a partial replacement of fossil-fuel fired generation by emission-free PV-generated electricity, which reduces harmful sulfur dioxide (SO_2), nitrogen oxides (NO_x), and fine particulate matter ($PM_{2.5}$). Analysis from the National Renewable Energy Laboratory and the Lawrence Berkeley National Laboratory, both affiliates of the U.S. Department of Energy, estimates the health-related air quality benefits to the southeast region from solar PV generators to be worth 8.0 ¢ per kilowatt-hour of solar generation.[1] This is in addition to the value of the electricity and suggests that the air quality benefits of solar are worth more than the electricity itself.

Even though we have only recently seen large-scale installation of PV technologies, the technology and its potential impacts have been studied since the 1950s. A combination of this solar-specific research and general scientific research has led to the scientific community having a good understanding of the science behind potential health and safety impacts of solar energy. This paper utilizes the latest scientific literature and knowledge of solar practices in N.C. to address the health and safety risks associated with solar PV technology. These risks are extremely small, far less than those associated with common activities such as driving a car, and vastly outweighed by health benefits of the generation of clean electricity.

This paper addresses the potential health and safety impacts of solar PV development in North Carolina, organized into the following four categories:

(1) Hazardous Materials
(2) Electromagnetic Fields (EMF)
(3) Electric Shock and Arc Flash
(4) Fire Safety

1. Hazardous Materials

One of the more common concerns towards solar is that the panels (referred to as “modules” in the solar industry) consist of toxic materials that endanger public health. However, as shown in this section, solar energy systems may contain small amounts of toxic materials, but these materials do not endanger public health. To understand potential toxic hazards coming from a solar project, one must understand system installation, materials used, the panel end-of-life protocols, and system operation. This section will examine these aspects of a solar farm and the potential for toxicity impacts in the following subsections:

(1.2) Project Installation/Construction
(1.2) System Components
    1.2.1 Solar Panels: Construction and Durability
    1.2.2 Photovoltaic technologies
        (a) Crystalline Silicon
        (b) Cadmium Telluride (CdTe)
        (c) CIS/CIGS
    1.2.3 Panel End of Life Management
    1.2.4 Non-panel System Components
(1.3) Operations and Maintenance

1.1 Project Installation/Construction

The system installation, or construction, process does not require toxic chemicals or processes. The site is mechanically cleared of large vegetation, fences are constructed, and the land is surveyed to layout exact installation locations. Trenches for underground wiring are dug and support posts are driven into the ground. The solar panels are bolted to steel and aluminum support structures and wired together. Inverter pads are installed, and an inverter and transformer are installed on each pad. Once everything is connected, the system is tested, and only then turned on.



Figure 1: Utility-scale solar facility (5 MW_{AC}) located in Catawba County. Source: Strata Solar

1.2 System Components

1.2.1 Solar Panels: Construction and Durability

Solar PV panels typically consist of glass, polymer, aluminum, copper, and semiconductor materials that can be recovered and recycled at the end of their useful life.[2] Today there are two PV technologies used in PV panels at utility-scale solar facilities, silicon, and thin film. As of 2016, all thin film used in North Carolina solar facilities are cadmium telluride (CdTe) panels from the US manufacturer First Solar, but there are other thin film PV panels available on the market, such as Solar Frontier's CIGS panels. Crystalline silicon technology consists of silicon wafers which are made into cells and assembled into panels, thin film technologies consist of thin layers of semiconductor material deposited onto glass, polymer or metal substrates. While there are differences in the components and manufacturing processes of these two types of solar technologies, many aspects of their PV panel construction are very similar. Specifics about each type of PV chemistry as it relates to toxicity are covered in subsections a, b, and c in section 1.2.2; on crystalline silicon, cadmium telluride, and CIS/CIGS respectively. The rest of this section applies equally to both silicon and thin film panels.

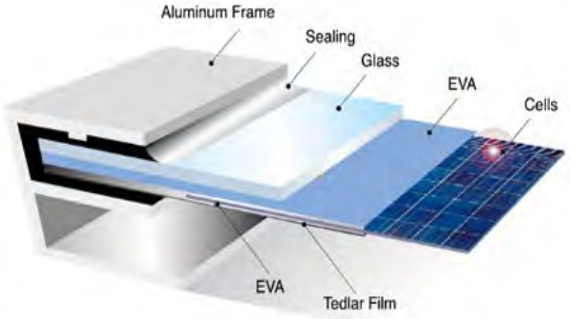


Figure 2: Components of crystalline silicon panels. The vast majority of silicon panels consist of a glass sheet on the topside with an aluminum frame providing structural support. Image Source: www.riteksolar.com.tw

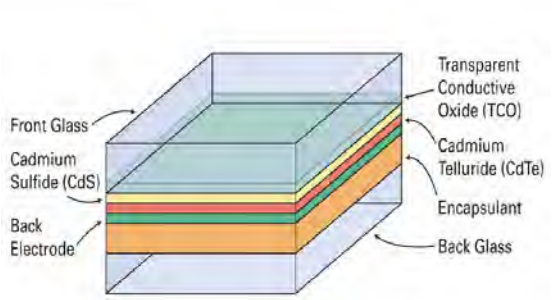


Figure 3: Layers of a common frameless thin-film panel (CdTe). Many thin film panels are frameless, including the most common thin-film panels, First Solar's CdTe. Frameless panels have protective glass on both the front and back of the panel. Layer thicknesses not to scale. Image Source: www.homepower.com

To provide decades of corrosion-free operation, PV cells in PV panels are encapsulated from air and moisture between two layers of plastic. The encapsulation layers are protected on the top with a layer of tempered glass and on the backside with a polymer sheet. Frameless modules include a protective layer of glass on the rear of the panel, which may also be tempered. The plastic ethylene-vinyl acetate (EVA) commonly provides the cell encapsulation. For decades, this same material has been used between layers of tempered glass to give car windshields and hurricane windows their great strength. In the same way that a car windshield cracks but stays intact, the EVA layers in PV panels keep broken panels intact (see Figure 4). Thus, a damaged module does not generally create small pieces of debris; instead, it largely remains together as one piece.



Figure 4: The mangled PV panels in this picture illustrate the nature of broken solar panels; the glass cracks but the panel is still in one piece. Image Source: http://img.alibaba.com/photo/115259576/broken_solar_panel.jpg

PV panels constructed with the same basic components as modern panels have been installed across the globe for well over thirty years.[3] The long-term durability and performance demonstrated over these decades, as well as the results of accelerated lifetime testing, helped lead to an industry-standard 25-year power production warranty for PV panels. These power warranties warrant a PV panel to produce at least 80% of their original nameplate production after 25 years of use. A recent SolarCity and DNV GL study reported that today's quality PV panels should be expected to reliably and efficiently produce power for thirty-five years.[4]

Local building codes require all structures, including ground mounted solar arrays, to be engineered to withstand anticipated wind speeds, as defined by the local wind speed requirements. Many racking products are available in versions engineered for wind speeds of up to 150 miles per hour, which is significantly higher than the wind speed requirement anywhere in North Carolina. The strength of PV mounting structures were demonstrated during Hurricane Sandy in 2012 and again during Hurricane Matthew in 2016. During Hurricane Sandy, the many large-scale solar facilities in New Jersey and New York at that time suffered only minor damage.[5] In the fall of 2016, the US and Caribbean experienced destructive winds and torrential rains from Hurricane Matthew, yet one leading solar tracker manufacturer reported that their numerous systems in the impacted area received zero damage from wind or flooding.[6]

In the event of a catastrophic event capable of damaging solar equipment, such as a tornado, the system will almost certainly have property insurance that will cover the cost to cleanup and repair the project. It is in the best interest of the system owner to protect their investment against such risks. It is also in their interest to get the project repaired and producing full power as soon as possible. Therefore, the investment in adequate insurance is a wise business practice for the system owner. For the same

reasons, adequate insurance coverage is also generally a requirement of the bank or firm providing financing for the project.

1.2.2 Photovoltaic (PV) Technologies

a. **Crystalline Silicon**

This subsection explores the toxicity of silicon-based PV panels and concludes that they do not pose a material risk of toxicity to public health and safety. Modern crystalline silicon PV panels, which account for over 90% of solar PV panels installed today, are, more or less, a commodity product. The overwhelming majority of panels installed in North Carolina are crystalline silicon panels that are informally classified as Tier I panels. Tier I panels are from well-respected manufacturers that have a good chance of being able to honor warranty claims. Tier I panels are understood to be of high quality, with predictable performance, durability, and content. Well over 80% (by weight) of the content of a PV panel is the tempered glass front and the aluminum frame, both of which are common building materials. Most of the remaining portion are common plastics, including polyethylene terephthalate in the backsheet, EVA encapsulation of the PV cells, polyphenyl ether in the junction box, and polyethylene insulation on the wire leads. The active, working components of the system are the silicon photovoltaic cells, the small electrical leads connecting them together, and to the wires coming out of the back of the panel. The electricity generating and conducting components makeup less than 5% of the weight of most panels. The PV cell itself is nearly 100% silicon, and silicon is the second most common element in the Earth's crust. The silicon for PV cells is obtained by high-temperature processing of quartz sand (SiO_2) that removes its oxygen molecules. The refined silicon is converted to a PV cell by adding extremely small amounts of boron and phosphorus, both of which are common and of very low toxicity.

The other minor components of the PV cell are also generally benign; however, some contain lead, which is a human toxicant that is particularly harmful to young children. The minor components include an extremely thin antireflective coating (silicon nitride or titanium dioxide), a thin layer of aluminum on the rear, and thin strips of silver alloy that are screen-printed on the front and rear of cell.[7] In order for the front and rear electrodes to make effective electrical contact with the proper layer of the PV cell, other materials (called glass frit) are mixed with the silver alloy and then heated to etch the metals into the cell. This glass frit historically contains a small amount of lead (Pb) in the form of lead oxide. The 60 or 72 PV cells in a PV panel are connected by soldering thin solder-covered copper tabs from the back of one cell to the front of the next cell. Traditionally a tin-based solder containing some lead (Pb) is used, but some manufacturers have switched to lead-free solder. The glass frit and/or the solder may contain trace amounts of other metals, potentially including some with human toxicity such as cadmium. However, testing to simulate the potential for leaching from broken panels, which is discussed in more detail below, did not find a potential toxicity threat from these trace elements. Therefore, the tiny amount of lead in the grass frit and the solder is the only part of silicon PV panels with a potential to create a negative health impact. However, as described below, the very limited amount of lead involved and its strong physical and chemical attachment to other components of the PV panel means that even in worst-case scenarios the health hazard it poses is insignificant.

As with many electronic industries, the solder in silicon PV panels has historically been a lead-based solder, often 36% lead, due to the superior properties of such solder. However, recent advances in lead-free solders have spurred a trend among PV panel manufacturers to reduce or remove the lead in their panels. According to the 2015 Solar Scorecard from the Silicon Valley Toxics Coalition, a group that tracks environmental responsibility of photovoltaic panel manufacturers, fourteen companies (increased from twelve companies in 2014) manufacture PV panels certified to meet the European Restriction of

Hazardous Substances (RoHS) standard. This means that the amount of cadmium and lead in the panels they manufacture fall below the RoHS thresholds, which are set by the European Union and serve as the world's de facto standard for hazardous substances in manufactured goods.[8] The Restriction of Hazardous Substances (RoHS) standard requires that the maximum concentration found in any homogenous material in a produce is less than 0.01% cadmium and less than 0.10% lead, therefore, any solder can be no more than 0.10% lead.[9]

While some manufacturers are producing PV panels that meet the RoHS standard, there is no requirement that they do so because the RoHS Directive explicitly states that the directive does not apply to photovoltaic panels.[10] The justification for this is provided in item 17 of the current RoHS Directive: "The development of renewable forms of energy is one of the Union's key objectives, and the contribution made by renewable energy sources to environmental and climate objectives is crucial. Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources (4) recalls that there should be coherence between those objectives and other Union environmental legislation. Consequently, this Directive should not prevent the development of renewable energy technologies that have no negative impact on health and the environment and that are sustainable and economically viable."

The use of lead is common in our modern economy. However, only about 0.5% of the annual lead consumption in the U.S. is for electronic solder for all uses; PV solder makes up only a tiny portion of this 0.5%. Close to 90% of lead consumption in the US is in batteries, which do not encapsulate the pounds of lead contained in each typical automotive battery. This puts the lead in batteries at great risk of leaching into the environment. Estimates for the lead in a single PV panel with lead-based solder range from 1.6 to 24 grams of lead, with 13g (less than half of an ounce) per panel seen most often in the literature.[11] At 13 g/panel[12], each panel contains one-half of the lead in a typical 12-gauge shotgun shell. This amount equates to roughly 1/750th of the lead in a single car battery. In a panel, it is all durably encapsulated from air or water for the full life of the panel.[14]

As indicated by their 20 to 30-year power warranty, PV modules are designed for a long service life, generally over 25 years. For a panel to comply with its 25-year power warranty, its internal components, including lead, must be sealed from any moisture. Otherwise, they would corrode and the panel's output would fall below power warranty levels. Thus, the lead in operating PV modules is not at risk of release to the environment during their service lifetime. In extreme experiments, researchers have shown that lead can leach from crushed or pulverized panels.[15, 16] However, more real-world tests designed to represent typical trash compaction that are used to classify waste as hazardous or non-hazardous show no danger from leaching.[17, 18] For more information about PV panel end-of-life, see the Panel Disposal section.

As illustrated throughout this section, silicon-based PV panels do not pose a material threat to public health and safety. The only aspect of the panels with potential toxicity concerns is the very small amount of lead in some panels. However, any lead in a panel is well sealed from environmental exposure for the operating lifetime of the solar panel and thus not at risk of release into the environment.

b. Cadmium Telluride (CdTe) PV Panels

This subsection examines the components of a cadmium telluride (CdTe) PV panel. Research demonstrates that they pose negligible toxicity risk to public health and safety while significantly reducing the public's exposure to cadmium by reducing coal emissions. As of mid-2016, a few hundred MWs of

cadmium telluride (CdTe) panels, all manufactured by the U.S. company First Solar, have been installed in North Carolina.

Questions about the potential health and environmental impacts from the use of this PV technology are related to the concern that these panels contain cadmium, a toxic heavy metal. However, scientific studies have shown that cadmium telluride differs from cadmium due to its high chemical and thermal stability.[19] Research has shown that the tiny amount of cadmium in these panels does not pose a health or safety risk.[20] Further, there are very compelling reasons to welcome its adoption due to reductions in unhealthy pollution associated with burning coal. Every GWh of electricity generated by burning coal produces about 4 grams of cadmium air emissions.[21] Even though North Carolina produces a significant fraction of our electricity from coal, electricity from solar offsets much more natural gas than coal due to natural gas plants being able to adjust their rate of production more easily and quickly. If solar electricity offsets 90% natural gas and 10% coal, each 5-megawatt (5 MW_{AC}, which is generally 7 MW_{DC}) CdTe solar facility in North Carolina keeps about 157 grams, or about a third of a pound, of cadmium *out of* our environment.[22, 23]

Cadmium is toxic, but all the approximately 7 grams of cadmium in one CdTe panel is in the form of a chemical compound cadmium telluride,[24] which has $1/100^{th}$ the toxicity of free cadmium.[25] Cadmium telluride is a very stable compound that is non-volatile and non-soluble in water. Even in the case of a fire, research shows that less than 0.1% of the cadmium is released when a CdTe panel is exposed to fire. The fire melts the glass and encapsulates over 99.9% of the cadmium in the molten glass.[27]

It is important to understand the source of the cadmium used to manufacture CdTe PV panels. The cadmium is a byproduct of zinc and lead refining. The element is collected from emissions and waste streams during the production of these metals and combined with tellurium to create the CdTe used in PV panels. If the cadmium were not collected for use in the PV panels or other products, it would otherwise either be stockpiled for future use, cemented and buried, or disposed of.[28] Nearly all the cadmium in old or broken panels can be recycled which can eventually serve as the primary source of cadmium for new PV panels.[29]

Similar to silicon-based PV panels, CdTe panels are constructed of a tempered glass front, one instead of two clear plastic encapsulation layers, and a rear heat strengthened glass backing (together >98% by weight). The final product is built to withstand exposure to the elements without significant damage for over 25 years. While not representative of damage that may occur in the field or even at a landfill, laboratory evidence has illustrated that when panels are ground into a fine powder, very acidic water is able to leach portions of the cadmium and tellurium,[30] similar to the process used to recycle CdTe panels. Like many silicon-based panels, CdTe panels are reported (as far back ask 1998[31]) to pass the EPA's Toxic Characteristic Leaching Procedure (TCLP) test, which tests the potential for crushed panels in a landfill to leach hazardous substances into groundwater.[32] Passing this test means that they are classified as non-hazardous waste and can be deposited in landfills.[33, 34] For more information about PV panel end-of-life, see the Panel Disposal section.

There is also concern of environmental impact resulting from potential catastrophic events involving CdTe PV panels. An analysis of worst-case scenarios for environmental impact from CdTe PV panels, including earthquakes, fires, and floods, was conducted by the University of Tokyo in 2013. After reviewing the extensive international body of research on CdTe PV technology, their report concluded, "Even in the worst-case scenarios, it is unlikely that the Cd concentrations in air and sea water will exceed the environmental regulation values."[35] In a worst-case scenario of damaged panels abandoned on the ground, insignificant amounts of cadmium will leach from the panels. This is because this scenario is

much less conducive (larger module pieces, less acidity) to leaching than the conditions of the EPA's TCLP test used to simulate landfill conditions, which CdTe panels pass.[36]

First Solar, a U.S. company, and the only significant supplier of CdTe panels, has a robust panel take-back and recycling program that has been operating commercially since 2005.[37] The company states that it is "committed to providing a commercially attractive recycling solution for photovoltaic (PV) power plant and module owners to help them meet their module (end of life) EOL obligation simply, cost-effectively and responsibly." First Solar global recycling services to their customers to collect and recycle panels once they reach the end of productive life whether due to age or damage. These recycling service agreements are structured to be financially attractive to both First Solar and the solar panel owner. For First Solar, the contract provides the company with an affordable source of raw materials needed for new panels and presumably a diminished risk of undesired release of Cd. The contract also benefits the solar panel owner by allowing them to avoid tipping fees at a waste disposal site. The legal contract helps provide peace of mind by ensuring compliance by both parties when considering the continuing trend of rising disposal costs and increasing regulatory requirements.

c. CIS/CIGS and other PV technologies

Copper indium gallium selenide PV technology, often referred to as CIGS, is the second most common type of thin-film PV panel but a distant second behind CdTe. CIGS cells are composed of a thin layer of copper, indium, gallium, and selenium on a glass or plastic backing. None of these elements are very toxic, although selenium is a regulated metal under the Federal Resource Conservation and Recovery Act (RCRA).[38] The cells often also have an extremely thin layer of cadmium sulfide that contains a tiny amount of cadmium, which is toxic. The promise of high efficiency CIGS panels drove heavy investment in this technology in the past. However, researchers have struggled to transfer high efficiency success in the lab to low-cost full-scale panels in the field.[39] Recently, a CIGS manufacturer based in Japan, Solar Frontier, has achieved some market success with a rigid, glass-faced CIGS module that competes with silicon panels. Solar Frontier produces the majority of CIS panels on the market today.[40] Notably, these panels are RoHS compliant,[41] thus meeting the rigorous toxicity standard adopted by the European Union even thought this directive exempts PV panels. The authors are unaware of any completed or proposed utility-scale system in North Carolina using CIS/CIGS panels.

1.2.3 Panel End-of-Life Management

Concerns about the volume, disposal, toxicity, and recycling of PV panels are addressed in this subsection. To put the volume of PV waste into perspective, consider that by 2050, when PV systems installed in 2020 will reach the end of their lives, it is estimated that the global annual PV panel waste tonnage will be 10% of the 2014 global e-waste tonnage.[42] In the U.S., end-of-life disposal of solar products is governed by the Federal Resource Conservation and Recovery Act (RCRA), as well as state policies in some situations. RCRA separates waste into hazardous (not accepted at ordinary landfill) and solid waste (generally accepted at ordinary landfill) based on a series of rules. According to RCRA, the way to determine if a PV panel is classified as hazardous waste is the Toxic Characteristic Leaching Procedure (TCLP) test. This EPA test is designed to simulate landfill disposal and determine the risk of hazardous substances leaching out of the landfill.[43, 44, 45] Multiple sources report that most modern PV panels (both crystalline silicon and cadmium telluride) pass the TCLP test.[46, 47] Some studies found that some older (1990s) crystalline silicon panels, and perhaps some newer crystalline silicon panels (specifics are not given about vintage of panels tested), do not pass the lead (Pb) leachate limits in the TCLP test.[48, 49]

The test begins with the crushing of a panel into centimeter-sized pieces. The pieces are then mixed in an acid bath. After tumbling for eighteen hours, the fluid is tested for forty hazardous substances that all must be below specific threshold levels to pass the test. Research comparing TCLP conditions to conditions of damaged panels in the field found that simulated landfill conditions provide overly conservative estimates of leaching for field-damaged panels.[50] Additionally, research in Japan has found no detectable Cd leaching from cracked CdTe panels when exposed to simulated acid rain.[51]

Although modern panels can generally be landfilled, they can also be recycled. Even though recent waste volume has not been adequate to support significant PV-specific recycling infrastructure, the existing recycling industry in North Carolina reports that it recycles much of the current small volume of broken PV panels. In an informal survey conducted by the NC Clean Energy Technology Center survey in early 2016, seven of the eight large active North Carolina utility-scale solar developers surveyed reported that they send damaged panels back to the manufacturer and/or to a local recycler. Only one developer reported sending damaged panels to the landfill.

The developers reported at that time that they are usually paid a small amount per panel by local recycling firms. In early 2017, a PV developer reported that a local recycler was charging a small fee per panel to recycle damaged PV panels. The local recycling firm known to authors to accept PV panels described their current PV panel recycling practice as of early 2016 as removing the aluminum frame for local recycling and removing the wire leads for local copper recycling. The remainder of the panel is sent to a facility for processing the non-metallic portions of crushed vehicles, referred to as "fluff" in the recycling industry.[52] This processing within existing general recycling plants allows for significant material recovery of major components, including glass which is 80% of the module weight, but at lower yields than PV-specific recycling plants. Notably almost half of the material value in a PV panel is in the few grams of silver contained in almost every PV panel produced today. In the long-term, dedicated PV panel recycling plants can increase treatment capacities and maximize revenues resulting in better output quality and the ability to recover a greater fraction of the useful materials.[53] PV-specific panel recycling technologies have been researched and implemented to some extent for the past decade, and have been shown to be able to recover over 95% of PV material (semiconductor) and over 90% of the glass in a PV panel.[54]

A look at global PV recycling trends hints at the future possibilities of the practice in our country. Europe installed MW-scale volumes of PV years before the U.S. In 2007, a public-private partnership between the European Union and the solar industry set up a voluntary collection and recycling system called PV CYCLE. This arrangement was later made mandatory under the EU's WEEE directive, a program for waste electrical and electronic equipment.[55] Its member companies (PV panel producers) fully finance the association. This makes it possible for end-users to return the member companies' defective panels for recycling at any of the over 300 collection points around Europe without added costs. Additionally, PV CYCLE will pick up batches of 40 or more used panels at no cost to the user. This arrangement has been very successful, collecting and recycling over 13,000 tons by the end of 2015.[56]

In 2012, the WEEE Directive added the end-of-life collection and recycling of PV panels to its scope.[57] This directive is based on the principle of extended-producer-responsibility. It has a global impact because producers that want to sell into the EU market are legally responsible for end-of-life management. Starting in 2018, this directive targets that 85% of PV products "put in the market" in Europe are recovered and 80% is prepared for reuse and recycling.

The success of the PV panel collection and recycling practices in Europe provides promise for the future of recycling in the U.S. In mid-2016, the US Solar Energy Industry Association (SEIA) announced that they are starting a national solar panel recycling program with the guidance and support of many

leading PV panel producers.[58] The program will aggregate the services offered by recycling vendors and PV manufacturers, which will make it easier for consumers to select a cost-effective and environmentally responsible end-of-life management solution for their PV products. According to SEIA, they are planning the program in an effort to make the entire industry landfill-free. In addition to the national recycling network program, the program will provide a portal for system owners and consumers with information on how to responsibly recycle their PV systems.

While a cautious approach toward the potential for negative environmental and/or health impacts from retired PV panels is fully warranted, this section has shown that the positive health impacts of reduced emissions from fossil fuel combustion from PV systems more than outweighs any potential risk. Testing shows that silicon and CdTe panels are both safe to dispose of in landfills, and are also safe in worst case conditions of abandonment or damage in a disaster. Additionally, analysis by local engineers has found that the current salvage value of the equipment in a utility scale PV facility generally exceeds general contractor estimates for the cost to remove the entire PV system.[59, 60, 61]

1.2.4 Non-Panel System Components (racking, wiring, inverter, transformer)

While previous toxicity subsections discussed PV panels, this subsection describes the non-panel components of utility-scale PV systems and investigates any potential public health and safety concerns. The most significant non-panel component of a ground-mounted PV system is the mounting structure of the rows of panels, commonly referred to as “racking”. The vertical post portion of the racking is galvanized steel and the remaining above-ground racking components are either galvanized steel or aluminum, which are both extremely common and benign building materials. The inverters that make the solar generated electricity ready to send to the grid have weather-proof steel enclosures that protect the working components from the elements. The only fluids that they might contain are associated with their cooling systems, which are not unlike the cooling system in a computer. Many inverters today are RoHS compliant.

The electrical transformers (to boost the inverter output voltage to the voltage of the utility connection point) do contain a liquid cooling oil. However, the fluid used for that function is either a non-toxic mineral oil or a biodegradable non-toxic vegetable oil, such as BIOTEMP from ABB. These vegetable transformer oils have the additional advantage of being much less flammable than traditional mineral oils. Significant health hazards are associated with old transformers containing cooling oil with toxic PCBs. Transfers with PCB-containing oil were common before PCBs were outlawed in the U.S. in 1979. PCBs still exist in older transformers in the field across the country.

Other than a few utility research sites, there are no batteries on- or off-site associated with utility-scale solar energy facilities in North Carolina, avoiding any potential health or safety concerns related to battery technologies. However, as battery technologies continue to improve and prices continue to decline we are likely to start seeing some batteries at solar facilities. Lithium ion batteries currently dominate the world utility-scale battery market, which are not very toxic. No non-panel system components were found to pose any health or environmental dangers.

1.4 Operations and Maintenance – Panel Washing and Vegetation Control

Throughout the eastern U.S., the climate provides frequent and heavy enough rain to keep panels adequately clean. This dependable weather pattern eliminates the need to wash the panels on a regular basis. Some system owners may choose to wash panels as often as once a year to increase production, but most in N.C. do not regularly wash any PV panels. Dirt build up over time may justify panel washing a few times over the panels' lifetime; however, nothing more than soap and water are required for this activity.

The maintenance of ground-mounted PV facilities requires that vegetation be kept low, both for aesthetics and to avoid shading of the PV panels. Several approaches are used to maintain vegetation at NC solar facilities, including planting of limited-height species, mowing, weed-eating, herbicides, and grazing livestock (sheep). The following descriptions of vegetation maintenance practices are based on interviews with several solar developers as well as with three maintenance firms that together are contracted to maintain well over 100 of the solar facilities in N.C. The majority of solar facilities in North Carolina maintain vegetation primarily by mowing. Each row of panels has a single row of supports, allowing sickle mowers to mow under the panels. The sites usually require mowing about once a month during the growing season. Some sites employ sheep to graze the site, which greatly reduces the human effort required to maintain the vegetation and produces high quality lamb meat.[62]

In addition to mowing and weed eating, solar facilities often use some herbicides. Solar facilities generally do not spray herbicides over the entire acreage; rather they apply them only in strategic locations such as at the base of the perimeter fence, around exterior vegetative buffer, on interior dirt roads, and near the panel support posts. Also unlike many row crop operations, solar facilities generally use only general use herbicides, which are available over the counter, as opposed to restricted use herbicides commonly used in commercial agriculture that require a special restricted use license. The herbicides used at solar facilities are primarily 2-4-D and glyphosate (Round-up®), which are two of the most common herbicides used in lawns, parks, and agriculture across the country. One maintenance firm that was interviewed sprays the grass with a class of herbicide known as a growth regulator in order to slow the growth of grass so that mowing is only required twice a year. Growth regulators are commonly used on highway roadsides and golf courses for the same purpose. A commercial pesticide applicator license is required for anyone other than the landowner to apply herbicides, which helps ensure that all applicators are adequately educated about proper herbicide use and application. The license must be renewed annually and requires passing of a certification exam appropriate to the area in which the applicator wishes to work. Based on the limited data available, it appears that solar facilities in N.C. generally use significantly less herbicides per acre than most commercial agriculture or lawn maintenance services.

2. Electromagnetic Fields (EMF)

PV systems do not emit any material during their operation; however, they do generate electromagnetic fields (EMF), sometimes referred to as radiation. EMF produced by electricity is non-ionizing radiation, meaning the radiation has enough energy to move atoms in a molecule around (experienced as heat), but not enough energy to remove electrons from an atom or molecule (ionize) or to damage DNA. As shown below, modern humans are all exposed to EMF throughout our daily lives without negative health impact. Someone outside of the fenced perimeter of a solar facility is not exposed to significant EMF from the solar facility. Therefore, there is no negative health impact from the EMF

produced in a solar farm. The following paragraphs provide some additional background and detail to support this conclusion.

Since the 1970s, some have expressed concern over potential health consequences of EMF from electricity, but no studies have ever shown this EMF to cause health problems.[63] These concerns are based on some epidemiological studies that found a slight increase in childhood leukemia associated with average exposure to residential power-frequency magnetic fields above 0.3 to 0.4 µT (microteslas) (equal to 3.0 to 4.0 mG (milligauss)). µT and mG are both units used to measure magnetic field strength. For comparison, the average exposure for people in the U.S. is one mG or 0.1 µT, with about 1% of the population with an average exposure in excess of 0.4 µT (or 4 mG).[64] These epidemiological studies, which found an association but not a causal relationship, led the World Health Organization's International Agency for Research on Cancer (IARC) to classify ELF magnetic fields as "possibly carcinogenic to humans". Coffee also has this classification. This classification means there is limited evidence but not enough evidence to designate as either a "probable carcinogen" or "human carcinogen". Overall, there is very little concern that ELF EMF damages public health. The only concern that does exist is for long-term exposure above 0.4 µT (4 mG) that may have some connection to increased cases of childhood leukemia. In 1997, the National Academies of Science were directed by Congress to examine this concern and concluded:

> "Based on a comprehensive evaluation of published studies relating to the effects of power-frequency electric and magnetic fields on cells, tissues, and organisms (including humans), the conclusion of the committee is that the current body of evidence does not show that exposure to these fields presents a human-health hazard. Specifically, no conclusive and consistent evidence shows that exposures to residential electric and magnetic fields produce cancer, adverse neurobehavioral effects, or reproductive and developmental effects."[65]

There are two aspects to electromagnetic fields, an electric field and a magnetic field. The electric field is generated by voltage and the magnetic field is generated by electric current, i.e., moving electrons. A task group of scientific experts convened by the World Health Organization (WHO) in 2005 concluded that there were no substantive health issues related to *electric* fields (0 to 100,000 Hz) at levels generally encountered by members of the public.[66] The relatively low voltages in a solar facility and the fact that electric fields are easily shielded (i.e., blocked) by common materials, such as plastic, metal, or soil means that there is no concern of negative health impacts from the electric fields generated by a solar facility. Thus, the remainder of this section addresses magnetic fields. Magnetic fields are not shielded by most common materials and thus can easily pass through them. Both types of fields are strongest close to the source of electric generation and weaken quickly with distance from the source.

The direct current (DC) electricity produced by PV panels produce stationary (0 Hz) electric and magnetic fields. Because of minimal concern about potential risks of stationary fields, little scientific research has examined stationary fields' impact on human health.[67] In even the largest PV facilities, the DC voltages and currents are not very high. One can illustrate the weakness of the EMF generated by a PV panel by placing a compass on an operating solar panel and observing that the needle still points north.

While the electricity throughout the majority of a solar site is DC electricity, the inverters convert this DC electricity to alternating current (AC) electricity matching the 60 Hz frequency of the grid. Therefore, the inverters and the wires delivering this power to the grid are producing non-stationary EMF, known as extremely low frequency (ELF) EMF, normally oscillating with a frequency of 60 Hz. This frequency is at the low-energy end of the electromagnetic spectrum. Therefore, it has less energy than

other commonly encountered types of non-ionizing radiation like radio waves, infrared radiation, and visible light.

The wide use of electricity results in background levels of ELF EMFs in nearly all locations where people spend time – homes, workplaces, schools, cars, the supermarket, etc. A person's average exposure depends upon the sources they encounter, how close they are to them, and the amount of time they spend there.[68] As stated above, the average exposure to magnetic fields in the U.S. is estimated to be around one mG or 0.1 µT, but can vary considerably depending on a person's exposure to EMF from electrical devices and wiring.[69] At times we are often exposed to much higher ELF magnetic fields, for example when standing three feet from a refrigerator the ELF magnetic field is 6 mG and when standing three feet from a microwave oven the field is about 50 mG.[70] The strength of these fields diminish quickly with distance from the source, but when surrounded by electricity in our homes and other buildings moving away from one source moves you closer to another. However, unless you are inside of the fence at a utility-scale solar facility or electrical substation it is impossible to get very close to the EMF sources. Because of this, EMF levels at the fence of electrical substations containing high voltages and currents are considered "generally negligible".[71, 72]

The strength of ELF-EMF present at the perimeter of a solar facility or near a PV system in a commercial or residential building is significantly lower than the typical American's average EMF exposure.[73, 74] Researchers in Massachusetts measured magnetic fields at PV projects and found the magnetic fields dropped to very low levels of 0.5 mG or less, and in many cases to less than background levels (0.2 mG), at distances of no more than nine feet from the residential inverters and 150 feet from the utility-scale inverters.[75] Even when measured within a few feet of the utility-scale inverter, the ELF magnetic fields were well below the International Commission on Non-Ionizing Radiation Protection's recommended magnetic field level exposure limit for the general public of 2,000 mG.[76] It is typical that utility scale designs locate large inverters central to the PV panels that feed them because this minimizes the length of wire required and shields neighbors from the sound of the inverter's cooling fans. Thus, it is rare for a large PV inverter to be within 150 feet of the project's security fence.

Anyone relying on a medical device such as pacemaker or other implanted device to maintain proper heart rhythm may have concern about the potential for a solar project to interfere with the operation of his or her device. However, there is no reason for concern because the EMF outside of the solar facility's fence is less than 1/1000 of the level at which manufacturers test for ELF EMF interference, which is 1,000 mG.[77] Manufacturers of potentially affected implanted devices often provide advice on electromagnetic interference that includes avoiding letting the implanted device get too close to certain sources of fields such as some household appliances, some walkie-talkies, and similar transmitting devices. Some manufacturers' literature does not mention high-voltage power lines, some say that exposure in public areas should not give interference, and some advise not spending extended periods of time close to power lines.[78]

3. Electric Shock and Arc Flash Hazards

There is a real danger of electric shock to anyone entering any of the electrical cabinets such as combiner boxes, disconnect switches, inverters, or transformers; or otherwise coming in contact with voltages over 50 Volts.[79] Another electrical hazard is an arc flash, which is an explosion of energy that can occur in a short circuit situation. This explosive release of energy causes a flash of heat and a shockwave, both of which can cause serious injury or death. Properly trained and equipped technicians and electricians know how to safely install, test, and repair PV systems, but there is always some risk of

injury when hazardous voltages and/or currents are present. Untrained individuals should not attempt to inspect, test, or repair any aspect of a PV system due to the potential for injury or death due to electric shock and arc flash, The National Electric Code (NEC) requires appropriate levels of warning signs on all electrical components based on the level of danger determined by the voltages and current potentials. The national electric code also requires the site to be secured from unauthorized visitors with either a six-foot chain link fence with three strands of barbed wire or an eight-foot fence, both with adequate hazard warning signs.

4. Fire Safety

The possibility of fires resulting from or intensified by PV systems may trigger concern among the general public as well as among firefighters. However, concern over solar fire hazards should be limited because only a small portion of materials in the panels are flammable, and those components cannot self-support a significant fire. Flammable components of PV panels include the thin layers of polymer encapsulates surrounding the PV cells, polymer backsheets (framed panels only), plastic junction boxes on rear of panel, and insulation on wiring. The rest of the panel is composed of non-flammable components, notably including one or two layers of protective glass that make up over three quarters of the panel's weight.

Heat from a small flame is not adequate to ignite a PV panel, but heat from a more intense fire or energy from an electrical fault can ignite a PV panel.[80] One real-world example of this occurred during July 2015 in an arid area of California. Three acres of grass under a thin film PV facility burned without igniting the panels mounted on fixed-tilt racks just above the grass.[81] While it is possible for electrical faults in PV systems on homes or commercial buildings to start a fire, this is extremely rare.[82] Improving understanding of the PV-specific risks, safer system designs, and updated fire-related codes and standards will continue to reduce the risk of fire caused by PV systems.

PV systems on buildings can affect firefighters in two primary ways, 1) impact their methods of fighting the fire, and 2) pose safety hazard to the firefighters. One of the most important techniques that firefighters use to suppress fire is ventilation of a building's roof. This technique allows superheated toxic gases to quickly exit the building. By doing so, the firefighters gain easier and safer access to the building, Ventilation of the roof also makes the challenge of putting out the fire easier. However, the placement of rooftop PV panels may interfere with ventilating the roof by limiting access to desired venting locations.

New solar-specific building code requirements are working to minimize these concerns. Also, the latest National Electric Code has added requirements that make it easier for first responders to safely and effectively turn off a PV system. Concern for firefighting a building with PV can be reduced with proper fire fighter training, system design, and installation. Numerous organizations have studied fire fighter safety related to PV. Many organizations have published valuable guides and training programs. Some notable examples are listed below.

- The International Association of Fire Fighters (IAFF) and International Renewable Energy Council (IREC) partnered to create an online training course that is far beyond the PowerPoint click-and-view model. The self-paced online course, "Solar PV Safety for Fire Fighters," features rich video content and simulated environments so fire fighters can practice the knowledge they've learned. www.iaff.org/pvsafetytraining
- Photovoltaic Systems and the Fire Code: Office of NC Fire Marshal
- Fire Service Training, Underwriter's Laboratory

- Firefighter Safety and Response for Solar Power Systems, National Fire Protection Research Foundation
- Bridging the Gap: Fire Safety & Green Buildings, National Association of State Fire Marshalls
- Guidelines for Fire Safety Elements of Solar Photovoltaic Systems, Orange County Fire Chiefs Association
- Solar Photovoltaic Installation Guidelines, California Department of Forestry & Fire Protection, Office of the State Fire Marshall
- PV Safety & Firefighting, Matthew Paiss, Homepower Magazine
- PV Safety and Code Development: Matthew Paiss, Cooperative Research Network

Summary

The purpose of this paper is to address and alleviate concerns of public health and safety for utility-scale solar PV projects. Concerns of public health and safety were divided and discussed in the four following sections: (1) Toxicity, (2) Electromagnetic Fields, (3) Electric Shock and Arc Flash, and (4) Fire. In each of these sections, the negative health and safety impacts of utility-scale PV development were shown to be negligible, while the public health and safety benefits of installing these facilities are significant and far outweigh any negative impacts.

[1] Wiser, Ryan, Trieu Mai, Dev Millstein, Jordan Macknick, Alberta Carpenter, Stuart Cohen, Wesley Cole, Bethany Frew, and Garvin A. Heath. 2016. On the Path to SunShot: The Environmental and Public Health Benefits of Achieving High Penetrations of Solar Energy in the United States. Golden, CO: National Renewable Energy Laboratory. Accessed March 2017, www.nrel.gov/docs/fy16osti/65628.pdf

[2] IRENA and IEA-PVPS (2016), "End-of-Life Management: Solar Photovoltaic Panels," International Renewable Energy Agency and International Energy Agency Photovoltaic Power Systems.

[3] National Renewable Energy Laboratory, *Overview of Field Experience – Degradation Rates & Lifetimes*. September 14, 2015. Solar Power International Conference. Accessed March 2017, www.nrel.gov/docs/fy15osti/65040.pdf

[4] Miesel et al. *SolarCity Photovoltaic Modules with 35 Year Useful Life.* June 2016. Accessed March 2017. http://www.solarcity.com/newsroom/reports/solarcity-photovoltaic-modules-35-year-useful-life

[5] David Unger. *Are Renewables Stormproof? Hurricane Sandy Tests Solar, Wind.* November 2012. Accessed March 2017. http://www.csmonitor.com/Environment/Energy-Voices/2012/1119/Are-renewables-stormproof-Hurricane-Sandy-tests-solar-wind & http://www.csmonitor.com/Environment/Energy-Voices/2012/1119/Are-renewables-stormproof-Hurricane-Sandy-tests-solar-wind

[6] NEXTracker and 365 Pronto, *Tracking Your Solar Investment: Best Practices for Solar Tracker O&M*. Accessed March 2017. www.nextracker.com/content/uploads/2017/03/NEXTracker_OandM-WhitePaper_FINAL_March-2017.pdf

[7] Christiana Honsberg, Stuart Bowden. *Overview of Screen Printed Solar Cells*. Accessed January 2017. www.pveducation.org/pvcdrom/manufacturing/screen-printed

[8] Silicon Valley Toxics Coalition. *2015 Solar Scorecard.* Accessed August 2016. www.solarscorecard.com/2015/2015-SVTC-Solar-Scorecard.pdf

[9] European Commission. *Recast of Reduction of Hazardous Substances (RoHS) Directive*. September 2016. Accessed August 2016. http://ec.europa.eu/environment/waste/rohs_eee/index_en.htm

[10] Official Journal of the European Union, *DIRECTIVE 2011/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.* June 2011. Accessed May 2017. http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32011L0065&from=en

[11] Giancarlo Giacchetta, Mariella Leporini, Barbara Marchetti. *Evaluation of the Environmental Benefits of New High Value Process for the Management of the End of Life of Thin Film Photovoltaic Modules.* July 2013. Accessed August 2016. www.researchgate.net/publication/257408804_Evaluation_of_the_environmental_benefits_of_new_high_value_process_for_the_management_of_the_end_of_life_of_thin_film_photovoltaic_modules

[12] European Commission. *Study on Photovoltaic Panels Supplementing The Impact Assessment for a Recast of the Weee Directive.* April 2011. Accessed August 2016. http://ec.europa.eu/environment/waste/weee/pdf/Study%20on%20PVs%20Bio%20final.pdf

[14] The amount of lead in a typical car battery is 21.4 pounds. Waste 360. Chaz Miller. *Lead Acid Batteries.* March 2006. Accessed August 2016. http://waste360.com/mag/waste_leadacid_batteries_3

[15] Okkenhaug G. *Leaching from CdTe PV module material results from batch, column and availability tests.* Norwegian Geotechnical Institute, NGI report No. 20092155-00-6-R; 2010

[16] International Journal of Advanced Applied Physics Research. Renate Zapf-Gottwick1, et al. *Leaching Hazardous Substances out of Photovoltaic Modules*. January 2015. Accessed January 2016. www.cosmosscholars.com/phms/index.php/ijaapr/article/download/485/298

[17] ibid

[18] Parikhit Sinha, et al. Evaluation of Potential Health and Environmental Impacts from End-Of-Life Disposal of Photovoltaics, Photovoltaics, 2014. Accessed May 2016

[19] Bonnet, D. and P. Meyers. 1998. *Cadmium-telluride—Material for thin film solar cells.* J. Mater. Res., Vol. 13, No. 10, pp. 2740-2753

[20] V. Fthenakis, K. Zweibel. *CdTe PV: Real and Perceived EHS Risks*. National Center ofr Photovoltaics and Solar Program Review Meeting, March 24-26, 2003. www.nrel.gov/docs/fy03osti/33561.pdf. Accessed May 2017

[21] International Energy Agency Photovoltaic Power Systems Programme. *Life Cycle Inventories and Life Cycle Assessments of Photovoltaic Systems*. March 2015. Accessed August 2016. http://iea-pvps.org/index.php?id=315

[22] Data not available on fraction of various generation sources offset by solar generation in NC, but this is believed to be a reasonable rough estimate. The SunShot report entitled The Environmental and Public Health Benefits of Achieving High Penetrations of Solar Energy in the United States analysis contributes significant (% not provided) offsetting of coal-fired generation by solar PV energy in the southeast.

[23] 7 MW_{DC} * 1.5 GWh/MW_{DC} * 25 years * 0.93 degradation factor * (0.1 *4.65 grams/GWh + 0.9*0.2 grams/GWh)

[24] Vasilis Fthenakis. *CdTe PV: Facts and Handy Comparisons.* January 2003. Accessed March 2017. https://www.bnl.gov/pv/files/pdf/art_165.pdf

[25] Kaczmar, S., *Evaluating the Read-Across Approach on CdTe Toxicity for CdTe Photovoltaics*, SETAC North America 32nd Annual Meeting, Boston, MA, November 2011. Available at: ftp://ftp.co.imperial.ca.us/icpds/eir/campo-verde-solar/final/evaluating-toxicity.pdf, Accessed May 2017

[27] V. M. Fthenakis et al, *Emissions and Encapsulation of Cadmium in CdTe PV Modules During Fires* Renewable Progress in Photovoltaics: Research and Application: Res. Appl. 2005; 13:1–11, Accessed March 2017, www.bnl.gov/pv/files/pdf/abs_179.pdf

[28] Fthenakis *V.M., Life Cycle Impact Analysis of Cadmium in CdTe Photovoltaic Production*, Renewable and Sustainable Energy Reviews, 8, 303-334, 2004. www.clca.columbia.edu/papers/Life_Cycle_Impact_Analysis_Cadmium_CdTe_Photovoltaic_production.pdf, Accessed May 2017

[29] International Renewable Energy Agency. Stephanie Weckend, Andreas Wade, Garvin Heath. *End of Life Management: Solar Photovoltaic Panels*. June 2016. Accessed November 2016.

[30] International Journal of Advanced Applied Physics Research. Renate Zapf-Gottwick1, et al. *Leaching Hazardous Substances out of Photovoltaic Modules*. January 2015. Accessed January 2016. www.cosmosscholars.com/phms/index.php/ijaapr/article/download/485/298

[31] Cunningham D., Discussion about TCLP protocols, Photovoltaics and the Environment Workshop, July 23-24, 1998, Brookhaven National Laboratory, BNL-52557

[32] Parikhit Sinha, et al. Evaluation of Potential Health and Environmental Impacts from End-Of-Life Disposal of Photovoltaics, Photovoltaics, 2014. Accessed May 2016

[33] Practical Handbook of Photovoltaics: Fundamentals and Applications. T. Markvart and L. Castaner. *Chapter VII-2: Overview of Potential Hazards*. December 2003. Accessed August 2016. https://www.bnl.gov/pv/files/pdf/art_170.pdf

[34] Norwegian Geotechnical Institute. *Environmental Risks Regarding the Use and End-of-Life Disposal of CdTe PV Modules*. April 2010. Accessed August 2016. https://www.dtsc.ca.gov/LawsRegsPolicies/upload/Norwegian-Geotechnical-Institute-Study.pdf

[35] First Solar. Dr. Yasunari Matsuno. December 2013. August 2016. *Environmental Risk Assessment of CdTe PV Systems to be considered under Catastrophic Events in Japan.* http://www.firstsolar.com/-/media/Documents/Sustainability/Peer-Reviews/Japan_Peer-Review_Matsuno_CdTe-PV-Tsunami.ashx

[36] First Solar. Parikhit Sinha, Andreas Wade. *Assessment of Leaching Tests for Evaluating Potential Environmental Impacts of PV Module Field Breakage*. 2015 IEEE

[37] See p. 22 of First Solar, Sustainability Report. Available at: www.firstsolar.com/-/media/First-Solar/Sustainability-Documents/03801_FirstSolar_SustainabilityReport_08MAR16_Web.ashx, Accessed May 2017

[38] 40 CFR §261.24. *Toxicity Characteristic*. May 2017. Accessed May 2017. https://www.ecfr.gov/cgi-bin/text-idx?node=se40.26.261_124&rgn=div8
[39] Office of Energy Efficiency & Renewable Energy. *Copper Indium Gallium Diselenide.* Accessed March 2017. https://www.energy.gov/eere/sunshot/copper-indium-gallium-diselenide
[40] Mathias Maehlum. *Best Thin Film Solar Panels – Amorphous, Cadmium Telluride or CIGS?* April 2015. Accessed March 2017. http://energyinformative.org/best-thin-film-solar-panels-amorphous-cadmium-telluride-cigs/
[41] RoHS tested certificate for Solar Frontier PV modules. TUVRheinland, signed 11.11.2013
[42] International Renewable Energy Agency. Stephanie Weckend, Andreas Wade, Garvin Heath. *End of Life Management: Solar Photovoltaic Panels*. June 2016. Accessed November 2016. http://www.irena.org/DocumentDownloads/Publications/IRENA_IEAPVPS_End-of-Life_Solar_PV_Panels_2016.pdf
[43] 40 C.F.R. §261.10. *Identifying the Characteristics of Hazardous Waste and for Listing Hazardous Waste*. November 2016. Accessed November 2016 http://www.ecfr.gov/cgi-bin/text-idx?SID=ce0006d66da40146b490084ca2816143&mc=true&node=pt40.26.261&rgn=div5#sp40.28.261.b
[44] 40 C.F.R. §261.24 *Toxicity Characteristic.* November 2016. Accessed November 2016. http://www.ecfr.gov/cgi-bin/text-idx?SID=ce0006d66da40146b490084ca2816143&mc=true&node=pt40.26.261&rgn=div5#se40.28.261_124
[45] International Renewable Energy Agency. Stephanie Weckend, Andreas Wade, Garvin Heath. *End of Life Management: Solar Photovoltaic Panels.* June 2016. Accessed November 2016. http://www.irena.org/DocumentDownloads/Publications/IRENA_IEAPVPS_End-of-Life_Solar_PV_Panels_2016.pdf
[46] TLCP test results from third-party laboratories for REC, Jinko, and Canadian Solar silicon-based panels. Provided by PV panel manufacturers directly or indirectly to authors
[47] Sinovoltaics, *Introduction to Solar Panel Recycling*, March 2014. Accessed October 2016. http://sinovoltaics.com/solar-basics/introduction-to-solar-panel-recycling/
[48] Brookhaven National Laboratory. Vasilis Fthenakis, *Regulations on Photovoltaic Module Disposal and Recycling.* January 29, 2001.
[49] Parikhit Sinha, et al. Evaluation of Potential Health and Environmental Impacts from End-Of-Life Disposal of Photovoltaics, Photovoltaics, 2014.
[50] First Solar. Parikhit Sinha, Andreas Wade. *Assessment of Leaching Tests for Evaluating Potential Environmental Impacts of PV Module Field Breakage.* October 2015. Accessed August 2016. http://www.firstsolar.com/-/media/Documents/Sustainability/PVSC42-Manuscript-20150912--Assessment-of-Leaching-Tests-for-Evaluating-Potential-Environmental-Impa.ashx
[51] First Solar. Dr. Yasunari Matsuno. December 2013. *Environmental Risk Assessment of CdTe PV Systems to be considered under Catastrophic Events in Japan*. http://www.firstsolar.com/-/media/Documents/Sustainability/Peer-Reviews/Japan_Peer-Review_Matsuno_CdTe-PV-Tsunami.ashx
[52] Phone interview, February 3, 2016, TT&E Iron & Metal, Garner, NC www.ncscrapmetal.com/
[53] Wen-His Huang, et al. *Strategy and Technology To Recycle Water-silicon Solar Modules*. Solar Energy, Volume 144, March 2017, Pages 22-31
[54] International Renewable Energy Agency. Stephanie Weckend, Andreas Wade, Garvin Heath. *End of Life Management: Solar Photovoltaic Panels.* June 2016. Accessed November 2016. http://www.irena.org/DocumentDownloads/Publications/IRENA_IEAPVPS_End-of-Life_Solar_PV_Panels_2016.pdf
[55] Official Journal of the European Union. *Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on Waste Electrical and Electronic Equipment*. July 2012. Accessed November 2016. http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32012L0019
[56] PV CYCLE. *Annual Report 2015.* Accessed November 2016. https://pvcyclepublications.cld.bz/Annual-Report-PV-CYCLE-2015/6-7
[57] Official Journal of the European Union. *Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on Waste Electrical and Electronic Equipment*. July 2012. Accessed November 2016. http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32012L0019
[58] SEIA National PV Recycling Program: www.seia.org/seia-national-pv-recycling-program
[59] RBI Solar, Decommissioning Plan submitted to Catawba County associated with permitting of a 5MW solar project in June 2016. Accessed April 2017. www.catawbacountync.gov/Planning/Projects/Rezonings/RZ2015-05_DecommissioningPlan.pdf
[60] Birdseye Renewables, Decommissioning Plan submitted to Catawba County associated with permitting of a 5MW solar project in May 2015. Accessed April 2017. www.catawbacountync.gov/Planning/Projects/Rezonings/RZ2015-04_DecommissioningPlan.pdf
[61] Cypress Creek Renewables, Decommissioning Plan submitted to Catawba County associated with permitting of a 5MW solar project in September 2016. Accessed April 2017. www.catawbacountync.gov/Planning/Projects/Rezonings/RZ2016-06decommission.pdf
[62] Sun Raised Farms: http://sunraisedfarms.com/index.html
[63] National Institute of Environmental Health Sciences and National Institutes of Health, EMF: Electric and Magnetic Fields Associated with Electric Power: Questions and Answers, June 2002

[64] World Health Organization. *Electromagnetic Fields and Public Health: Exposure to Extremely Low Frequency Fields*. June 2007. Accessed August 2016. http://www.who.int/peh-emf/publications/facts/fs322/en/
[65] Committee on the Possible Effects of Electromagnetic Fields on Biologic Systems, National Research Council, Possible Health Effects of Exposure to Residential Electric and Magnetic Fields, ISBN: 0-309-55671-6, 384 pages, 6 x 9, (1997) This PDF is available from the National Academies Press at: http://www.nap.edu/catalog/5155.html
[66] World Health Organization. *Electromagnetic Fields and Public Health: Exposure to Extremely Low Frequency Fields.* June 2007. Accessed August 2016. http://www.who.int/peh-emf/publications/facts/fs322/en/
[67] World Health Organization. *Electromagnetic Fields and Public Health: Static Electric and Magnetic Fields*. March 2006. Accessed August 2016. http://www.who.int/peh-emf/publications/facts/fs299/en/
[68] Asher Sheppard, Health Issues Related to the Static and Power-Frequency Electric and Magnetic Fields (EMFs) of the Soitec Solar Energy Farms, April 30, 2014. Accessed March 2017: www.sandiegocounty.gov/content/dam/sdc/pds/ceqa/Soitec-Documents/Final-EIR-Files/Appendix_9.0-1_EMF.pdf
[69] Massachusetts Clean Energy Center. *Study of Acoustic and EMF Levels from Solar Photovoltaic Projects*. December 2012. Accessed August 2016.
[70] Duke Energy Corporation. *Frequently Asked Questions: Electric and Magnetic Fields*. Accessed August 2016. https://www.duke-energy.com/about-energy/frequently_asked_questions.asp
[71] National Institute of Environmental Health Sciences, *Electric and Magnetic Fields Associate with the use of Electric Power: Questions and Answers*, 2002. Accessed November 2016 www.niehs.nih.gov/health/materials/electric_and_magnetic_fields
[72] Duke Energy Corporation. *Frequently Asked Questions: Electric and Magnetic Fields*. Accessed August 2016. https://www.duke-energy.com/about-energy/frequently_asked_questions.asp
[73] R.A. Tell et al, *Electromagnetic Fields Associated with Commercial Solar Photovoltaic Electric Power Generating Facilities*, Journal of Occupational and Environmental Hygiene, Volume 12, 2015,- Issue 11. Abstract Accessed March 2016: http://www.tandfonline.com/doi/full/10.1080/15459624.2015.1047021
[74] Massachusetts Department of Energy Resources, Massachusetts Department of Environmental Protection, and Massachusetts Clean Energy Center. *Questions & Answers: Ground-Mounted Solar Photovoltaic Systems*. June 2015. Accessed August 2016. http://www.mass.gov/eea/docs/doer/renewables/solar/solar-pv-guide.pdf
[75] Ibid.
[76] Ibid.
[77] *EMFs and medical devices*, Accessed March 2017. www.emfs.info/effects/medical-devices/
[78] ibid.
[79] Damon McCluer. *Electrical Construction & Maintenance: NFPA 70E's Approach to Considering DC Hazards*. September 2013. Accessed October 2016. http://ecmweb.com/safety/nfpa-70e-s-approach-considering-dc-hazards,
[80] Hong-Yun Yang, et. al. *Experimental Studies on the Flammability and Fire Hazards of Photovoltaic Modules, Materials.* July 2015. Accessed August 2016. http://www.mdpi.com/1996-1944/8/7/4210/pdf
[81] Matt Fountain. The Tribune. *Fire breaks out at Topaz Solar Farm*. July 2015. Accessed August 2016. www.sanluisobispo.com/news/local/article39055539.html
[82] Cooperative Research Network. Matthew Paiss. *Tech Surveillance: PV Safety & Code Developments*. October 2014. Accessed August 2016. http://www.nreca.coop/wp-content/uploads/2013/06/ts_pv_fire_safety_oct_2014.pdf

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REAL ESTATE ADJACENT PROPERTY VALUE IMPACT REPORT:

Academic and Peer Authored Property Value Impact Studies, Research and Analysis of Existing Solar Facilities, and Market Participant and Assessor Interviews

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September 28, 2023



LETTER OF TRANSMITTAL

September 28, 2023

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Executive Vice President of Development
TPE Development, LLC
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Denver, CO 80237

SUBJECT: Property Value Impact Report
An Analysis of Existing Solar Farms

To Whom it May Concern:

CohnReznick is pleased to submit the accompanying property values impact report for proposed solar energy uses in Illinois. Per the client's request, CohnReznick researched property transactions adjacent to existing solar farms, researched and analyzed articles and other published studies, and interviewed real estate professionals and Township/County Assessors active in the market where solar farms are located, to gain an understanding of actual market transactions in the presence of solar energy uses.

The purpose of this consulting assignment is to determine whether proximity to a renewable energy use (solar farm) has an impact adjacent property values. The intended use of our opinions and conclusions is to assist the client in addressing local concerns and to provide information that local bodies are required to consider in their evaluation of solar project use applications. We have not been asked to value any specific property, and we have not done so.

The client and intended user for the assignment is TPE Development, LLC ("Turning Point"). Additional intended users of our findings include Turning Point's designated project companies, all relevant permitting authorities for Turning Point's proposed solar projects in Illinois. The report may be used only for the aforementioned purpose and may not be distributed without the written consent of CohnReznick LLP ("CohnReznick").

This consulting assignment is intended to conform to the Uniform Standards of Professional Appraisal Practice (USPAP), the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute, as well as applicable state appraisal regulations.

Based on the analysis in the accompanying report, and subject to the definitions, assumptions, and limiting conditions expressed in the report, our findings are:

Disclaimer: This report is limited to the intended use, intended users (TPE Development, LLC and its designated project companies and others stated in the report as it relates to the evaluation of a proposed solar energy generating facility in Illinois), and purpose stated within. No part of this report may otherwise be reproduced or modified in any form, or by any means, without the prior written permission of CohnReznick LLP.

FINDINGS

I. Academic Studies *(pages 19-22):* CohnReznick reviewed and analyzed published academic studies that specifically analyzed the impact of solar facilities on nearby property values. These studies include multiple regression analyses of hundreds and thousands of sales transactions, and opinion surveys, for both residential homes and farmland properties in rural communities, the majority of the data used in various studies indicates that there is no consistent and measurable impact to surrounding property values. We note that some of these studies do show a very small impact to certain homes, in certain locations, at certain distances, but these conclusions are not necessarily indicative of future projects in other locations.

Peer Authored Studies: CohnReznick also reviewed studies prepared by other real estate valuation experts that specifically analyzed the impact of solar facilities on nearby property values. These studies found little to no measurable or consistent difference in value between the Test Area Sales and the Control Area Sales attributed to the proximity to existing solar farms and noted that solar energy uses are generally considered a compatible use.

II. CohnReznick Studies *(pages 23-95)*: Further, CohnReznick has performed 35 studies in over 17 states, of both residential and agricultural properties, in which we have determined that the existing solar facilities have not caused any consistent and measurable negative impact on property values.

For this Project, we have included 10 of these studies which are most similar to the subject in terms of general location and size, summarized as follows:

CohnReznick - Existing Solar Farms Studied

Solar Farm #	Solar Farm	County	State	Power Output (MW AC)	Site Area (Acres)	Date Project Completed	Impact on Surrounding Property Values
1	2662 Freeport Solar CSG	Stephenson	IL	2.00	18	Dec-20	No Impact
2	Grand Ridge Solar	LaSalle	IL	20.00	158	Jul-12	No Impact
3	DTE Lapeer	LaPeer	MI	48.28	±365	May-17	No Impact
4	Woodland Solar	Isle of Wight	VA	19.00	211	Dec-16	No Impact
5	Dominion Indy Solar III	Marion	IN	8.60	129	Dec-13	No Impact
6	Sunfish Farm	Wake	NC	5.00	50	Dec-15	No Impact
7	Portage Solar	Porter	IN	2.00	56	Sep-12	No Impact
8	IMPA Frankton Solar	Madison	IN	1.40	13	Jun-14	No Impact
9	Jefferson County Community	Jefferson	CO	1.20	14	May-16	No Impact
10	Valparaiso Solar	Porter	IN	1.00	28	Dec-12	No Impact

It is noted that proximity to the solar farms has not deterred sales of nearby agricultural land and residential single-family homes nor has it deterred the development of new single-family homes on adjacent land.

This report also includes two "Before and After" analysis, in which sales that occurred prior to the announcement and construction of the solar farm project were compared with sales that occurred after completion of the solar farm project, for both adjoining and non-adjoining properties. No measurable impact on property values was demonstrated.

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III. Market Participant Interviews *(pages 96-98)*: Our conclusions also consider interviews with over 60 County and Township Assessors, who have at least one solar farm in their jurisdiction, and in which they have determined that solar farms have not negatively affected adjacent property values.

With regards to the Project, we specifically interviewed in Illinois:

- In Otter Creek Township, in LaSalle County, Illinois, we spoke with Viki Crouch, the Township Assessor, who she said that *there has been no impact on property values due to their proximity to the* ***Grand Ridge Solar Farm***.
- We spoke with Ken Crowley, Rockford Township Assessor in Winnebago County, Illinois, who stated that he has seen *no impact on property values in his township as an effect of proximity to the* ***Rockford Solar Farm***.
- We spoke with James Weisiger, the Champaign Township Assessor in Champaign County, where the **University of Illinois Solar Farm** is located, and he noted *there appears to have been no impact on property values as a result of proximity to the solar farm*.
- Cindi Lotz of Fayette County, Illinois did indicate that the **Dressor Plains Solar** project *has not had any impact whatsoever on adjacent property values.*

To give us additional insight as to how the market evaluates farmland and single-family homes with views of solar farms, we interviewed numerous real estate brokers and other market participants who were party to actual sales of property adjacent to solar; these professionals also confirmed that solar farms did not diminish property values or marketability in the areas they conducted their business.

IV. Solar Farm Factors on Harmony of Use *(pages 99-105)*: In the course of our research and studies, we have recorded information regarding the compatibility of these existing solar facilities and their adjoining uses, including the continuing development of land adjoining these facilities.

CONCLUSION

Considering all of the preceding, the data indicates that solar facilities do not have a negative impact on adjacent property values.

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If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Very truly yours,

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SCOPE OF WORK

CLIENT AND INTENDED USERS

The client and intended user of this report is TPE Development, LLC and its designated project companies; other intended users may include the client's legal and site development professionals. Additional intended users of our findings include all relevant permitting authorities for Turning Point's proposed solar projects in Illinois.

INTENDED USE

The intended use of our findings and conclusions is to address certain criteria required for the granting of approvals for proposed solar energy uses. We have not been asked to value any specific property, and we have not done so. The report may be used only for the aforementioned purpose and may not be distributed without the written consent of CohnReznick LLP ("CohnReznick").

PURPOSE

The purpose of this consulting assignment is to determine whether proximity to the proposed solar facility will result in an impact on adjacent property values.

DEFINITION OF VALUE

This report utilizes Market Value as the appropriate premise of value. Market value is defined as:

"The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition are the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1. Buyer and seller are typically motivated;
2. Both parties are well informed or well advised, and acting in what they consider their own best interests;
3. A reasonable time is allowed for exposure in the open market.
4. Payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and
5. The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale."[1]

[1] Code of Federal Regulations, Title 12, Chapter I, Part 34.42[h]

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EFFECTIVE DATE & DATE OF REPORT

September 28, 2023 (Paired sale analyses contained within each study are periodically updated.)

PRIOR SERVICES

USPAP requires appraisers to disclose to the client any services they have provided in connection with the subject property in the prior three years, including valuation, consulting, property management, brokerage, or any other services.

This report is a compilation of the Existing Solar Farms which we have studied over the past year, and is not evaluating a specific subject site. In this instance, there is no "subject property" to disclose.

INSPECTION

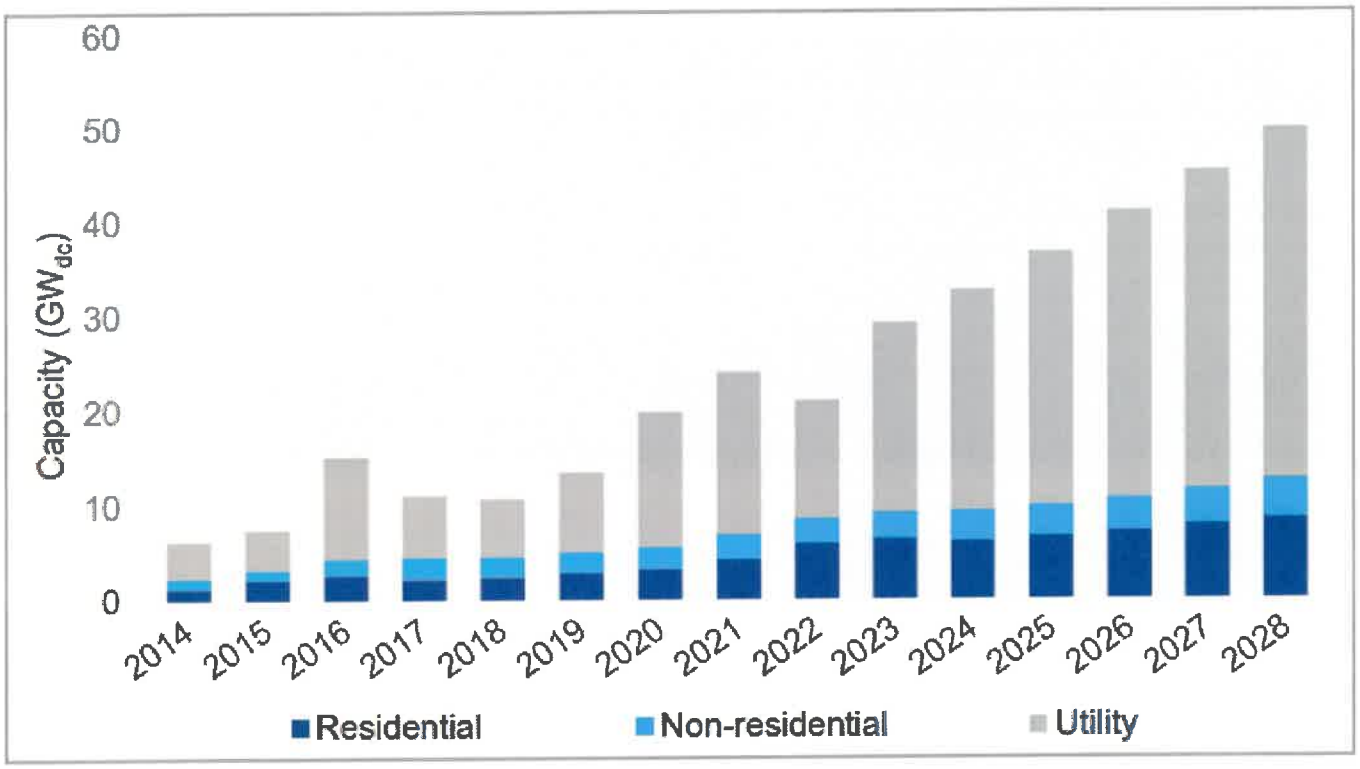
Patricia L. McGarr, MAI, CRE, FRICS, Andrew R. Lines, MAI, and Erin C. Bowen, MAI have viewed the exterior of all comparable data referenced in this report in person, via photographs, or aerial imagery.

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OVERVIEW OF SOLAR DEVELOPMENT IN THE UNITED STATES

Solar development increased almost exponentially over the past ten years in the United States as technology and the economic incentives (Solar Investment Tax Credits or ITC) made the installation of solar farms economically reasonable. The cost to install solar panels has dropped nationally by 70 percent since 2010, which has been one cause that led to the increase in installations. A majority of these solar farm installations are attributed to larger-scale solar farm developments for utility purposes. The chart below portrays the historical increase on an annual basis of solar installations in the US as a whole, courtesy of research by Solar Energy Industries Association (SEIA) and Wood Mackenzie, and projects solar photovoltaic (PV) deployment for the next ten years through 2032, with the largest percentage of installations attributed to utility-scale projects.

US PV installation historical data and forecast, 2014-2028



The U.S. installed 6.1 gigawatts (GWdc) of solar PV capacity in Q1 2023 to reach 149.5 GWdc of total installed capacity, enough to power 26 million American homes. Solar has accounted for 54% of all new electricity-generating capacity added in the U.S. in the first quarter of 2023. Residential solar had another record quarter with 1.6 GWdc installed, a 30% increase from 1Q 2022. Utility-scale solar installations reached 3.8 GWdc, a 66% increase from 1Q 20223 and 23% decrease from previous quarter. Supply chain constraints are still present, but many delayed projects came online in Q1 as module shipments make their way to project sites.

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In response to the Inflation Reduction Act (IRA), there has been a considerable increase in newly announced module manufacturing facilities in the US. As of the end of Q1, Wood Mackenzie is tracking 52 GW of new facilities scheduled to come online by 2026, at least 16 GW of which are under construction.

Over the course of our five-year outlook, the US solar industry is expected to nearly triple in size. Between 2023 and 2028, the industry will add 236 GWdc to an installed base of 142 GWdc (as of year-end 2022). Solar will be the leading technology of the clean energy transition, thanks to the long-term policy certainty provided by the IRA.

Wood Mackenzie expects the industry to remain supply-constrained through at least the second half of next year. Equipment importers are still contending with detainments as they seek to provide the documentation needed for compliance with the Uyghur Forced Labor Prevention Act (UFLPA).

Once supply chain relief arrives, the true impacts of the Inflation Reduction Act will manifest in rapid development. Beginning in 2024, annual installations of solar will consistently reach 30-40 GWdc.

On December 2nd, 2022, the Department of Commerce issued a preliminary affirmative ruling in the anticircumvention case initiated earlier this year. While the ruling was not issued in time to allow for incorporation into our forecasts, new tariffs present a downside risk to our outlook.

As of August 12, 2022, the Inflation Reduction Act was passed in the Senate and The House of Representatives, which includes long-term solar incentives and investment in domestic solar manufacturing. Included in the bill, a 10-year extension and expansion of the Investment Tax Credit (ITC) and Production Tax Credit (PTC) will provide tax credits for solar manufacturing and direct payment options for tax credits. While the uncertainty of the anti-circumvention investigation remains present, the passage of the Inflation Reduction Act gives the solar industry long-term market certainty.

Recent articles show that over the past decade, the solar industry has experienced unprecedented growth. Among the factors contributing to its growth were government incentives, significant capacity additions from existing and new entrants and continual innovation. Solar farms offer a wide array of economic and environmental benefits to surrounding properties. Unlike other energy sources, solar energy does not produce emissions that may cause negative health effects or environmental damage. Solar farms produce a lower electromagnetic field exposure than most household appliances, such as TV and refrigerators, and studies have confirmed there are no health issues related to solar farms.[2]

Solar farm construction in rural areas has also dramatically increased the tax value of the land on which they are built, which has provided a financial boost to some counties. CohnReznick has studied real estate tax increases due to the installation of solar, which can range up to 10-12 times the rate for farmland. A majority of tax revenue is funneled back into the local area, and as much as 50 percent of increased tax revenue can typically be allocated to the local school district. By converting farmland to a passive solar use for the duration of the system's

[2] "Electromagnetic Field and Public Health." Media Centre (2013): 1-4. World Health Organization.

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life, the solar energy use does not burden school systems, utilities, traffic, nor infrastructure as it is a passive use that does not increase population as say a residential subdivision would.

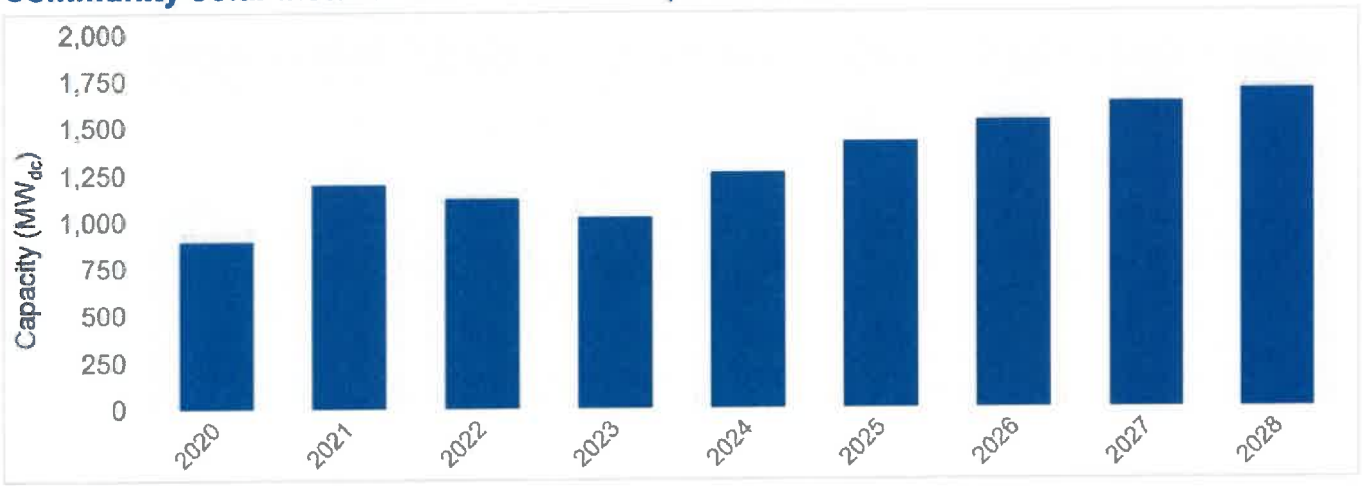
Beyond creating jobs, solar farms are also benefiting the overall long-term agricultural health of the community. The unused land, and also all the land beneath the solar panels, will be left to rejuvenate naturally. In the long run this is a better use of land since the soil is allowed to recuperate instead of being ploughed and fertilized year after year. A solar farm can offer some financial security for the property owner over 20 to 25 years. Once solar panel racking systems are removed, the land can revert to its original use.[3]

NATIONAL COMMUNITY SOLAR ENERGY PRODUCTION

Community solar projects (facilities that generate 5 MW AC or less of power) account for 5.8 GW of installed power in the U.S. through first quarter 2023, according to SEIA data. The community solar industry had a robust year in 2022 with 416 MW installed, according to SEIA data. According to the U.S. Energy Information Administration (EIA) through December 2022, there are over 4,258 community solar facilities in operation across the country.

Community solar installations declined 17 percent year-over-year as of third quarter 2022, and installations are down 17 percent from the second quarter 2022. Due to uncertainty around the anti-circumvention investigation, supply chain issues, and long timelines for new community solar policies, community solar installations are expected to contract in 2023. The growth of community solar installations from 2014 to 2022 is presented in the following chart.

Community solar installations and forecast, 2020-2028



Source: Wood Mackenzie

[3] NC State Extension. (May 2016). Landowner Solar Leasing: Contract Terms Explained. Retrieved from: https://content.ces.ncsu.edu/landowner-solar-leasing-contract-terms-explained

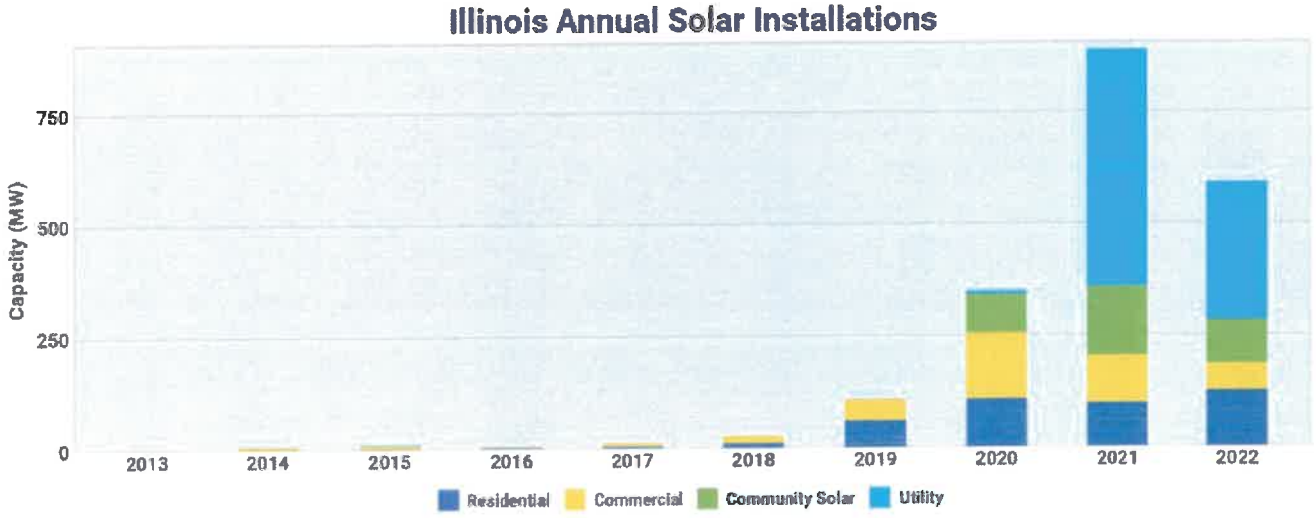
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While early growth for community solar installations was led primarily by three key markets - New York, Minnesota, and Massachusetts - a growing list of states with community solar programs have helped diversify the market, creating large pipelines set to come to fruition over the next several years.

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SOLAR ENERGY PRODUCTION IN ILLINOIS

As of the end of 1Q 2023, Illinois has 2,201 MW of solar installed, ranking 15th in the US for the capacity of solar installed according to the Solar Energy Industries Association (SEIA). There have been significantly more utility investments in clean energy with continued growth on the horizon, with 6,484 MW of solar proposed to be installed over the next five years.



Illinois has 1,673 MW AC of solar power planned for installation through December 2023 in 13 facilities across the state. Seven of the planned solar installations in Illinois are utility scale and total 1,660 MW AC, or 99 percent of all planned installations. The largest new solar facility in Illinois will be a 600 MW AC utility scale installation in Lee County, that is being developed by Steward Creek Solar. The total planned solar facilities will increase solar power generation in the state by approximately 176 percent.

There are 9 community solar projects planned for the state of Illinois before the end of 2023, generating a total of 24.1 MW AC of power.

Additionally, on January 27, 2023, Illinois Governor, JB Pritzker, signed into law House Bill 4412 which protects clean energy projects in Illinois from the increasing number of local bans. House Bill 4412 establishes statewide wind and solar project siting regulations, prioritizes protection for endangered species and natural areas, and limits the restrictions allowed in local ordinances that have previously hindered wind and solar clean energy projects. A rapid development in clean energy across the state can be expected as House Bill 4412 prevents future bans of clean energy projects on a local level and takes precedence over current bans.

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APPRAISAL THEORY – ADJACENT PROPERTY'S IMPACT ON VALUE

According to Randall Bell, PhD, MAI, author of text *Real Estate Damages,* published by the Appraisal Institute in 2016, understanding the market's perceptions on all factors that may have an influence on a property's desirability (and therefore its value) is essential in determining if a diminution or enhancement of value has occurred.[4] According to Dr. Bell:

> *"There is often a predisposition to believe that detrimental conditions automatically have a negative impact on property values. However, it is important to keep in mind that if a property's value is to be affected by a negative condition, whether internal or external to the property, that condition must be given enough weight in the decision-making process of buyers and sellers to have a material effect on pricing relative to all the other positive and negative attributes that influence the value of that particular property."*[5]

Market data and empirical research through the application of the three traditional approaches to value should be utilized to estimate the market value to determine if there is a material effect on pricing due, to the influence of a particular characteristic of or on a property.

A credible impact analysis is one that is logical, innate, testable and repeatable, prepared in conformity with approved valuation techniques. In order to produce credible assignment results, more than one valuation technique should be utilized for support for the primary method, or a check of reasonableness, such as utilization of more than one approach to value, conducting a literature review, or having discussions (testimony) with market participants.[6] CohnReznick implemented the scientific method[7] to determine if a detrimental condition of proximity to a solar farm exists, further described in the next section.

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[4] Bell, Randall, PhD, MAI. *Real Estate Damages. Third ed.* Chicago, IL: Appraisal Institute, 2016. (Pages 1-2)
[5] Ibid, Page 314
[6] Ibid, Pages 7-8
[7] The scientific method is a process that involves observation, development of a theory, establishment of a hypothesis, and testing. The valuation process applies principles of the scientific method as a model, based upon economic principles (primarily substitution) as the hypothesis. The steps for the scientific method are outlined as follows:

1. Identify the problem.
2. Collect relevant data.
3. Propose a hypothesis.
4. Test the hypothesis.
5. Assess the validity of the hypothesis.

Bell, Randall, PhD, MAI. *Real Estate Damages. Third ed.* Chicago, IL: Appraisal Institute, 2016. (Pages 314-316)

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METHODOLOGY

The purpose of this report is to determine whether proximity to the solar facility resulted in any measurable and consistent impact on adjacent property values. To test this hypothesis, CohnReznick identified three relevant techniques to test if a detrimental condition exists.

(1) A review of published studies;
(2) Paired sale analysis of properties adjacent to existing solar generating facilities, which may include repeat sale analyses or "Before and After" analyses; and,
(3) Interviews with real estate professionals and local real estate assessors.

The paired sales analysis is an effective method of determining if there is a detrimental impact on surrounding properties.

> *"One of the most useful applications of the sales comparison approach is paired sale analysis. This type of analysis may compare the subject property or similarly impacted properties called* ***Test Areas*** *(at Points B, C, D, E, or F) with unimpaired properties called* ***Control Areas*** *(Point A). A comparison may also be made between the unimpaired value of the subject property before and after the discovery of a detrimental condition. If a legitimate detrimental condition exists, there will likely be a* ***measurable and consistent difference*** *between the two sets of market data; if not, there will likely be no significant difference between the two sets of data. This process involves the study of a group of sales with a detrimental condition, which are then compared to a group of otherwise similar sales without the detrimental condition."*[8]

As an approved method, paired sales analysis can be utilized to extract the effect of a single characteristic on value. By definition, paired data analysis is "a quantitative technique used to identify and measure adjustments to the sale prices or rents of comparable properties; to apply this technique, sales or rental data on nearly identical properties is analyzed to isolate a single characteristic's effect on value or rent."[9] The text further describes that this method is theoretically sound when an abundance of market data, or sale transactions, is available for analysis.

Where data is available, CohnReznick has also prepared "Before and After" analyses or a Repeat Sale Analysis,[10] to determine if a detrimental impact has occurred.

---

[8] Bell, Randall, PhD, MAI. *Real Estate Damages. Third ed.* Chicago, IL: Appraisal Institute, 2016. (Page 33)
[9] *The Appraisal of Real Estate 14th Edition.* Chicago, IL: Appraisal Institute, 2013.
[10] Another type of paired sales analysis involves studying the sale and subsequent resale of the same property. This method is used to determine the influence of time on market values or to determine the impact of a detrimental condition by comparing values before and after the discovery of the condition.
Bell, Randall, PhD, MAI. *Real Estate Damages. Third ed.* Chicago, IL: Appraisal Institute, 2016. (Page 35)

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SCOPE OF WORK

The scope of work utilized to test the hypothesis stated on the prior page is as follows:

1. Review published studies, assess credibility, and validity of conclusions;
2. Prepare paired sale analyses for existing solar farms as follows:
    2.1. Identify existing solar farms comparable to the proposed project to analyze;
    2.2. Define Test Area Sales and Control Areas Sales;
    2.3. Collect market data (sale transactions) for both Test Area and Control Area Sales;
    2.4. Analyze and confirm sales, including omission of sales that are not reflective of market value;
    2.5. Prepare comparative analysis of Test Area and Control Area sales, adjusting for market conditions;
    2.6. Interpret calculations; and
3. Conduct interviews with real estate professionals and local real estate assessors who have evaluated real property adjacent to existing solar farms.

It should be noted that our impact report data and methodology have been previously reviewed by our peer in the field – Kirkland Appraisals, LLC – as well as by the Solar Energy Industries Association (SEIA).

The following bullet points summarize important elements to consider in our scope of work:

- Due to the limited number of community solar projects that qualified for study in the state of Illinois, we have incorporated some regional utility scale projects and community solar projects in other states.

- Test Area Sales consists of sales that are adjacent to an existing solar facility. Ownership and sales history for each adjoining property to an existing solar farm through the effective date of this report is maintained within our workfile. Adjoining properties with no sales data or that sold prior to the announcement of the solar farm were excluded from further analysis.

- Control Area Sales are generally located in the same market area, although varies based on the general location of the existing solar farm under analysis. In rural areas, sales are identified first within the township, and expands radially outward through the county until a reliable set of data points is obtained.

- Control Area Sales are generally between 12 and 18 months before or after the date of the Test Area Sale(s), and are comparable in physical characteristics such as age, condition, style, and size.

- Sales of properties that sold in a non-arm's length transaction (such as a transaction between related parties, bank-owned transaction, or between adjacent owners) were excluded from analysis as these are not considered to be reflective of market value, as defined earlier in this report. The sales that remained after exclusions were considered for a paired sale analysis.

- The methodology employed in this report for paired sale analysis does not rely on multiple subjective adjustments that are typical in many appraisals and single-paired sales analyses. Rather, the

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methodology remains objective, and the only adjustment required is for market conditions;[11] the analysis relies upon market conditions trends tracked by credible agencies such as the Federal Housing Finance Agency ("FHFA"), who maintains a House Price Index ("HPI")[12] for macro and micro regions in the United States. A market conditions adjustment is a variable that affects all properties similarly and can be adjusted for in an objective manner.

- To make direct comparisons, the sale price of the Control Area Sales was adjusted for market conditions to a common date. In this analysis, the common date is the date of the Test Area Sale(s). After adjustment, any measurable difference between the sale prices would be indicative of a possible price impact by the solar facility.

- If there is more than one Test Area Sale to evaluate, the sales are grouped if they exhibit similar transactional and physical characteristics; otherwise, they are evaluated separately with their own respective Control Area Sale groups.

[11] Adjusting for market conditions is necessary as described in The Appraisal of Real Estate 14th Edition as follows: "Comparable sales that occurred under market conditions different from those applicable to the subject on the effective date of appraisal require adjustment for any differences that affect their values. An adjustment for market conditions is made if general property values have increased or decreased since the transaction dates."

[12] The FHFA HPI is a weighted, repeat-sales index, meaning that it measures average price changes in repeat sales or refinancings on the same properties. This information is obtained by reviewing repeat mortgage transactions on single-family properties whose mortgages have been purchased or securitized by Fannie Mae or Freddie Mac since January 1975. The FHFA HPI serves as a timely, accurate indicator of house price trends at various geographic levels. Because of the breadth of the sample, it provides more information than is available in other house price indexes.

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TECHNIQUE 1: REVIEW OF PUBLISHED STUDIES

The following is a discussion of various studies that consider the impact of solar farms on surrounding property values. The studies range from quantitative analysis to survey-based formal research to less formal analyses.

ACADEMIC REPORTS

There have been three academic reports that attempt to quantify the effect on property values due to proximity to solar.

i. The first report is a study completed by **The University of Texas at Austin**, published in May 2018.[13] The portion of the study focusing on property impact was an Opinion Survey of Assessors with no sales data or evidence included in the survey. The opinion survey was sent to 400 accessors nationwide and received only 37 responses. Of those 37 assessors, only 18 had assessed a home near a utility-scale solar installation, the remainder had not. Of the 18 assessors with experience in valuing homes near solar farms, 17 had not found any impact on home values near solar. Those are the actual facts in the study. A small number of those assessor respondents hypothetically surmised an impact, but none had evidence to support such statements.

   The paper admits that there is no actual sales data analyzed, and further denotes its own areas of weakness, including "This study did not differentiate between ground-mounted and rooftop installations." The author states on the last line of page 22: ***"Finally, to shift from perceived to actual property value impacts, future research can conduct analyses on home sales data to collect empirical evidence of actual property value impacts."***

   The paper concludes with a suggestion that a statistic hedonic regression model may better identify impacts. It should be noted that the type of statistical analysis that the author states is required to determine "*actual property value impacts*' was completed two years later by the following Academic Studies.

ii. The second report is a study prepared by a team at the **University of Rhode Island**, published in September 2020, "*Property Value Impacts of Commercial-Scale Solar Energy in Massachusetts and Rhode Island.*"[14] The study utilized a hedonic pricing model, or multiple regression analysis, to quantify the effect of proximity on property values due to solar by studying existing solar installations in Massachusetts and Rhode Island. The study evaluated 208 solar facilities, 71,373 housing sales occurring within one-mile of the solar facilities (Test Group), and 343,921 sales between one-to-three miles (Control Group). Because it is a hedonic regression model, it allowed them to isolate specific

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[13] Al-Hamoodah, Leila, et al. An Exploration of Property-Value Impacts Near Utility-Scale Solar Installations. Policy Research Project (PRP), LBJ School of Public Affairs, The University of Texas at Austin, May 2018, emp.lbl.gov/sites/default/files/property-value_impacts_near_utility-scale_solar_installations.pdf.

[14] Gaur, V. and C. Lang. (2020). Property Value Impacts of Commercial-Scale Solar Energy in Massachusetts and Rhode Island. Submitted to University of Rhode Island Cooperative Extension on September 29, 2020. Accessed at https://web.uri.edu/coopext/valuing-sitingoptions-for-commercial-scale-solar-energy-in-rhode-island/.

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variables that could impact value, including isolating rural and non-rural locations. The study defines "**Rural**," as an area having a "population density of 850 people per square mile or fewer."

The study provides data which found no negative impact to residential homes near solar arrays in rural areas: "these results suggest that [the Test Area] in rural areas ***is effectively zero*** (a statistically insignificant 0.1%), and that the negative externalities of solar arrays are only occurring in non-rural areas."[15] Further, the study tested to determine if the size of the installation impacted values, and found no evidence of differential property values impacts by the solar installation's size.

Thus, not only are there no impacts to homes in similar areas as the proposed Project, but any differences in the size of a solar farm are similarly not demonstrating an impact.

iii. The third report is a published study prepared by Dr. Nino Abashidze, School of Economics, Georgia Institute of Technology, dated October 20, 2020, entitled "*Utility Scale Solar Farms and Agricultural Land Values.*" Abashidze examined 451 solar farms in North Carolina. "Across many samples and specifications, we find ***no direct negative or positive spillover effect of a solar farm construction on nearby agricultural land values.*** Although there are no direct effects of solar farms on nearby agricultural land values, we do find evidence that suggests construction of a solar farm may create a small, positive, option-value for land owners that is capitalized into land prices. Specifically, after construction of a nearby solar farm, we find that agricultural land that is also located near transmission infrastructure may increase modestly in value."

iv. On March 1, 2023, an article was prepared by the Energy Analysis and Environmental Impacts Division, **Lawrence Berkeley National Lab**, Berkeley, CA ("BNL"), which measured 1.8 million residential transactions around solar facilities greater than 1 MW in the states of CA, CT, MA, MN, NC and NJ. We are still reviewing this article although it does note that for the overwhelmingly majority of the transactions (in the states of CA, CT and MA), no impact was measured near large-scale photo-voltaic facilities or LSPV's. The authors of the study similarly released a webinar discussing the study, as well as key limitations of the study, as follows:

- The dataset is centered on relatively small projects in relatively urban areas... Our results should not be applied to larger projects, e.g., those >18 MW, and, of course projects built far from homes.
- [The] study did not consider site design, setbacks or landscaping features...
- Across the full dataset (all 6 states) only larger projects (greater than 12 acres) are correlated with a loss in house prices within 0.5 miles (compared to 2-4 miles away); BUT this analysis only applies to relatively small projects (90% are less than 35 acres/8 MW), so "large" is relative to the median of 12 acres.
- Only 6 states are included; therefore, the results would not necessarily apply outside the sample area.

[15] The University of Rhode Island study's conclusion that there may be an impact to non-rural communities is surmised is that "land is abundant in rural areas, so the development of some land into solar does little to impact scarcity, whereas in non-rural areas it makes a noticeable impact.

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Given these limitations, we do not believe the study is overwhelmingly conclusive, and, if any, only presents limited data showing a rather small impact in certain areas. The states showing no impact reflect 68.6% of all the transactions studied.

Our review of the study revealed key questions that we believe limit the applicability of the study as a whole:

1. The study does not show the data for the largest of the solar facilities mapped and whether those reveal transactions that are consistent with the study's results (i.e., solar facilities greater than 8 MW in all six states). We would hypothesize that the largest of the facilities would show the greatest amount of impact; this is not expressed (and so likely not true). Further, our own studies of the largest facilities in Minnesota (the 100 MW North Star Solar Farm) rebut the study's results.
2. There was no effort by the authors to interpret whether other adjacent property next to solar facilities might also impact local residential values. This could include large commercial buildings, office towers, industrial developments or highways. This might have swayed the results.
3. Data results are somewhat contrary to common reason – for example, their conclusions indicate a negative impact in rural areas, insignificant impact in urban areas, but overwhelmingly positive results for "urban cluster" areas. This diverges from the theory that density and impact correlate.
4. Data results using similar methodology in the URI study reveal contrary results: while the URI study found no impact in rural communities, the BNL study indicates some very small degree of impact, and while the BNL study showed no impact in suburban areas, the URI did show a rather small impact. The results, therefore, are mixed and do not indicate consistent and measurable evidence.
5. Whether the results of -1.5% is applicable in terms of its relative degree. This is a rather small percentage and most appraisers and valuation professionals would find it difficult to profess this is of a magnitude that would be recognized in the market.

The BNL study does represent the largest study to date on the topic of solar farms and property values. We find that the majority of the data indicates no impact. The authors themselves suggest additional focus as follows: "more research is needed to understand the heterogeneity that we observe with respect to larger, agricultural and rural LSPVs [in the MN, NJ and NC contexts]. Here, surveys, qualitative research, mixed-methods, and case study-based approaches may indicate how neighbors of LSPVS engage differently with their nearby solar installations based on its size, land use, or the urbanicity of their home." CohnReznick agrees with the BNL suggestion – and covers specifically this request in our own studies within Minnesota and North Carolina, as well as several other solar farms of various sizes in various locations.

VALUATION EXPERT REPORTS

We have similarly considered property value impact studies prepared by other experts, which have also noted that the installation of utility-scale solar on a property has no measurable or consistent impact on adjoining property value. According to a report titled "Mapleton Solar Impact Study" from Kirkland Appraisals, LLC, conducted in Murfreesboro, North Carolina in September 2017, which studied 13 existing solar farms in the state,

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found that the solar farms had no impact on adjacent vacant residential, agricultural land, or residential homes. The paired sales data analysis in the report primarily consisted of low density residential and agricultural land uses and included one case where the solar farm adjoined to two dense subdivisions of homes.

Donald Fisher, ARA who has served six years as Chair of the American Society of Farm Managers and Rural Appraisers, and has prepared several market studies examining the impact of solar on residential values was quoted in a press release dated February 15, 2021 stating, "Most of the locations were in either suburban or rural areas, and all of these studies found either a neutral impact or, ironically, a positive impact, where values on properties after the installation of solar farms went up higher than time trends."

REAL ESTATE ASSESSOR SOLAR IMPACT REPORTS

The Chisago County (Minnesota) Assessor's Office conducted their own study on property prices adjacent to and in the close vicinity of the North Star solar farm in Chisago County, Minnesota. At the November 2017 Chisago County Board meeting, John Keefe, the Chisago County Assessor, presented data from his study. He concluded that the North Star solar farm had, "no adverse impact" on property values. His study encompassed 15 parcels that sold and were adjacent or in the close vicinity to the solar farm between January 2016 and October 2017; the control group used for comparison comprised of over 700 sales within the county. Almost all of the [Test Area] properties sold were at a price above the assessed value. He further stated that, "It seems conclusive that valuation has not suffered."[16]

Furthermore, Grant County, Kentucky Property Value Administrator, Elliott Anderson, stated that Duke Energy built a solar farm near Crittenden, adjacent to existing homes on Claiborne Drive in December 2017. At the time of the interview, there have been nine arm's length homes sales on that street since the solar farm commenced operations. Each of those nine homes sold higher than its assessed value, and one over 32 percent higher. At the time, Anderson noted that several more lots were for sale by the developer and four more homes were currently under construction. Anderson said that *the solar farm had no impact either on adjoining home values or on marketability or desirability of those homes adjacent to the solar farm.*

CONCLUSION

These published studies and other valuation expert opinions conclude that there is no impact to property adjacent to established solar farms. These conclusions have been confirmed by academic studies utilizing large sales databases and regression analysis investigating this uses' potential impact on property values. Further, the conclusion has been confirmed by county assessors who have also investigated this adjacent land use' potential impact on property values.

[16] Chisago County Press: County Board Real Estate Update Shows No "Solar Effects" (11/03/2017)

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TECHNIQUE 2: PAIRED SALE ANALYSIS

SOLAR FARM 1: 2662 FREEPORT SOLAR CSG, STEPHENSON COUNTY, ILLINOIS

Coordinates: Latitude 42.33941447101255, Longitude -89.6394781667045

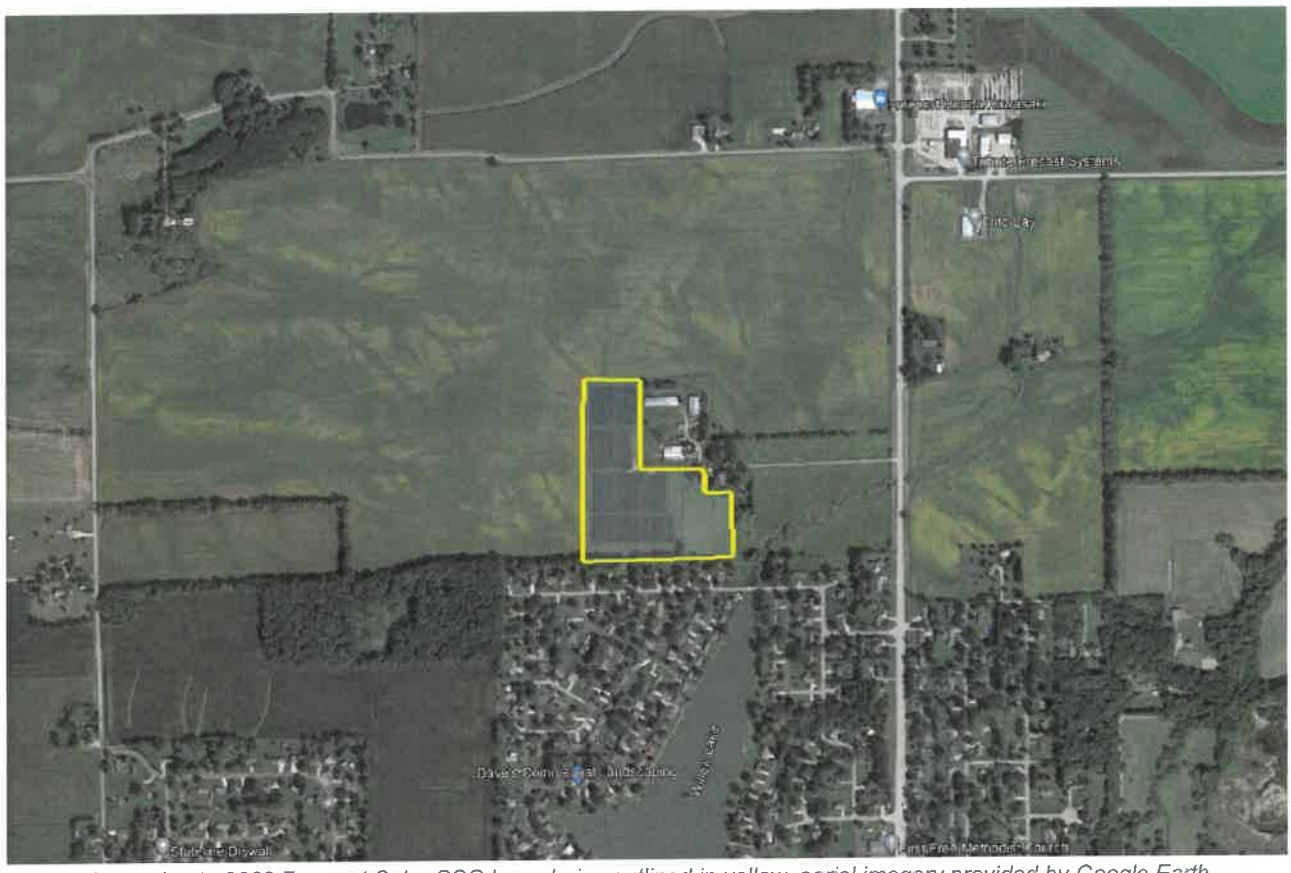
PIN: 08-00-13-800-001

Total Land Size: 17.84 acres

Date Project Announced: N/A

Date Project Completed: December 2020

Output: 2.0 MW AC



Approximate 2662 Freeport Solar CSG boundaries outlined in yellow, aerial imagery provided by Google Earth

2662 Freeport Solar CSG is located in Stephenson County, Illinois and is accessible via Illinois Route 26 N. The solar farm was developed by Borrego Solar Systems, Inc. and RECON Corporation and the improvements are owned by 2662 Freeport Solar I LLC. The solar farm went into operation in December 2020 with a total of 140,438 square feet of solar panels. The 17.84-acre solar farm was located on a larger 45-acre parcel that was replatted

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in January 2021. The underlying land of the solar farm sold in May 2022 for $200,000, with a 20-year ground lease for the solar panels. The remaining portion of the parcel – 27.16 acres – includes a single-family home, farm buildings, and farmland and has an easement for access to the solar site.

The Surrounding Area: The 2662 Freeport Solar CSG installation is located in Stephenson County, directly north of the City of Freeport. Stephenson County is located on the northern border of the state of Illinois, along the border with Wisconsin. The solar site is approximately 3 miles north of downtown Freeport and 100 miles northwest of the City of Chicago.

The 2662 Freeport Solar CSG project is one of 134 solar farms in Illinois and one of nine solar farms located within Stephenson County. The 2662 Freeport Solar CSG project is a similar size to all of the existing solar farms in Illinois with the exception of seven that are significantly larger and have output ranging from 10 to 200 MW. All of the solar farms in Stephenson County have capacity of 2.0 MW, similar to 2662 Freeport Solar CSG.

The Immediate Area: The solar farm is located in between W. Winneshiek Road to the north, Jay Street to the south, Blumenthal Road to the west, and Route 26 N to the east. The solar site is surrounded by farmland to the north and west, farmland and farmhouse buildings to the east, and single-family homes in a community surrounding Willow Lake to the south. The parcel lines of the single-family homes to the south are lined with mature trees. The single-family home located adjacent to the east of the solar site is surrounded by mature trees while the farm buildings have direct views of the solar site.

Real Estate Tax Info: In 2021 (payable 2022), the assessed value of the improvements was $145,333 and the owner paid $16,038 in real estate taxes. The 2021 assessed value of the underlying land was $2,404 and the participating the landowner paid $265 in real estate taxes. Prior assessment and tax information was unavailable given the split of the parcels, and the previous assessment and taxes included the larger 45-acre site and structures.

Adjoining Parcels: The following map displays the parcel in the solar farm site (outlined in red). Properties adjoining the solar parcels are numbered for subsequent analysis.

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2662 Freeport Solar CSG - Adjoining Properties

The surrounding area is primarily populated with agricultural uses to the north, east, and west, and a single-family home residential community to the south. Some of the agricultural parcels contain homesteads on the site and others are fully unimproved.

Adjoining Properties 4, 6, 8, and 9 have no sales data. Therefore, Adjoining Properties 4, 6, 8, and 9 are excluded from further analysis.

Recall, the solar farm under analysis began operations in December 2020. Adjoining Properties 1, 3, 5, 7, and 12 were sold in 2003, 2019, 2002, 2012, and 2008, respectively. These sales did not occur within a reasonable time period prior to /completion. Therefore, Adjoining Properties 1, 3, 5, 7, and 12 were excluded from further analysis.

Adjoining Property 11 sold in December 2021 and is comprised of 27 acres. Adjoining Property 11 consists of the remaining portion of the solar farm's parcel that was subdivided in 2020. Adjoining Property 11 includes a farmhouse, farm buildings, farmland, and an easement for access to the solar farm. We searched Stephenson County for sales of similar properties to Sale 3 with large areas of farmland and farm buildings and only found two comparables sales more than 15 acres. We excluded Adjoining Property 11 as a Test Area Sale given the easement and limited comparable Control Area Sales.

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Therefore, we have only considered Adjoining Properties 2 and 10 for paired sales analysis (identified as Test Area Sales 1 and 2 going forward).

PAIRED SALES ANALYSIS

We considered only one type of paired sales anaylsis, which was comparing sales of properties not proximate to the solar farm (Control Area Sales) to the sales of adjoining properties after the completion of the solar farm project (Test Area Sales). Test Area Sales 1 and 2 are located in the single-family residential subdivision ajdacent to the south of the solar farm and have been utilized as a group of test sales.

We identified Control Area Sale data through the RealQuest database which aggregates real estate sales from public record. We verified these sales through county records and conversations with brokers and sellers. We excluded sales that were not arm's length, such as REO sales or bank-owned properties, or those between related parties.

It is important to note the these Control Area Sales are not adjoining to any solar farm, nor do they have a view of one from the property. Therefore, the announcement nor the completion of the solar farm use could not have impacted the sales price of these properties. Additionally, these Control Area Sales are all located within a one mile radius of the 2662 Freeport Solar CSG project.

Test Area Sale 1 sold in November 2020 for $140,000 after being on the market for 40 days. The property is a single-story 1,750 square foot home with a 2-car attached garage, located on a 0.5-acre lot. The improvements on this property are located approximately 230 feet to the nearest solar panel while the property line is approximately 100 feet to the nearest solar panel. Test Area Sale 2 sold in January 2021 for $150,000 after being on the market for 51 days. The property is a one- to two-story 2,009 square foot home with a 2-car attached garage and 2.5-stall detached garage, located on a 0.5-acre lot. The improvements on this property are located approximately 330 feet to the nearest solar panel while the property line is approximately 280 feet to the nearest solar panel.

The table on the following page outlines the characteristics of the Test Area Sales.



Test Area Sale 1



Test Area Sale 2

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2662 Freeport Solar 1 CSG Test Area Sales										
Sale #	Address	Sale Price	Beds	Baths	Year Built	Home Size (SF)	Improvements	Site Size (AC)	Sale Price/ SF	Sale Date
1	1424 Jay St. Freeport, IL 61032	$140,000	3	2.0 (1 full, 2 half)	1979	1,750	1-story SFH with 2-car attached garage	0.5	$80.00	Nov-20
2	1226 Jay St. Freeport, IL 61032	$150,000	3	2.5	1977	2,009	1-2 story SFH with 2-car attached garage and detached 2.5 stall garage	0.5	$74.66	Jan-21

We analyzed 14 Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to the solar farm, that sold within 12 months from the median sale date of the Test Area Sales. The Control Area Sales are single-family homes with three to four bedrooms and 2 to 2.5 baths, consist of between 1,200 square feet and 2,300 square feet of gross living area, and built between 1957 and 1993. The Control Area Sales have a partial unfinished basement or finished basement, and are located on lots between 0.3 and 0.6 acres in size.

The Control Area Sales were adjusted for market conditions using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeated-sales index measuring the average price changes in repeat sales or refinancing of the same properties. The result of our analysis for the 2662 Freeport Solar CSG project is presented next.

CohnReznick Paired Sales Anaysis 2662 Freeport Solar 1 CSG		
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF
Test Area Sales (2)	Yes: Adjoining solar farm	$77.33
Control Area Sales (14)	No: Not adjoining solar farm	$76.08
Difference between Unit Price of Test Area Sale and Adjusted Median Unit Price of Control Area Sales		1.65%

The marketing time (from list date to closing date) for Control Area Sales ranged from 16 to 87 days on market with a median of 61 days. The marketing time for to Test Area Sales ranged from 40 to 51 days, which is within the range of the Control Area Sales and below the median, ***and we note no significant marketing time differential.***

The small differential between the Test Area Sale and the Control Area Sales is within the range of normal market variance, and therefore it does not appear that the 2662 Freeport Solar CSG installation impacted the sale price of the Test Area Sales.

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We contacted the selling broker of Test Area Sale 2, Julie Wenzel of RE/MAX Town Lake & Country, who indicated that proximity to the solar farm did not impact the sale of the property.

Additionally, we spoke with Cami Grossenbacher, Stephenson County Deputy Assessor, who stated that there has been *no impact on property values due to their proximity to the **2662 Freeport Solar CSG** project.*

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SOLAR FARM 2: GRAND RIDGE SOLAR FARM, LASALLE COUNTY, ILLINOIS

Coordinates: Latitude 41.143421, Longitude -88.758340

PINs: 34-22-100-000, 34-22-101-000

Total Land Size: 158 acres

Date Project Announced: December 31, 2010

Date Project Completed: July 2012

Output: 20 MW AC

This solar farm is located in the southeast quadrant of the intersection of E. 21st and N. 15th Roads, near Streator, in LaSalle County, Illinois. The solar farm was developed by Invenergy and is part of a renewable energy center known as Grand Ridge. The Energy Center includes the 20 MW AC solar facility, a 210 MW wind farm, and a 36 MW advanced-energy storage facility, all in one local vicinity. The solar site is located adjacent to the south and west of Invenergy's wind farm.

The solar facility consists of 20 individual 1-MW solar inverters and over 155,000 photovoltaic solar panels manufactured by General Electric.

The Surrounding Area: The Grand Ridge Solar Farm is situated just outside of the City of Streator, in Otter Creek Township, in LaSalle County, Illinois. The solar farm is located in a primarily rural part of Illinois, with the nearest interstate, Interstate-55, located approximately 14 miles southeast of the site.

The Immediate Area: Within a one-mile radius of the solar farm, surrounding uses mainly consist of agricultural land, with some single-family homes to the west. All of the adjacent land parcels to the solar farm are used for agricultural and/or residential purposes.

The solar site is surrounded by row crops to the north adjoining N. 15th Road. Row crops also adjoin the solar arrays to the east. Scrub shrubbery exists on the western border of the solar site, along E. 21st Road. On the west side of E. 21st Road is the 28-acre private Sandy Ford Sportsmans Club that includes a 12-acre fishing lake. The private Lazy Acres Fishing Club adjoins the solar site to the south and is surrounded by mature trees.

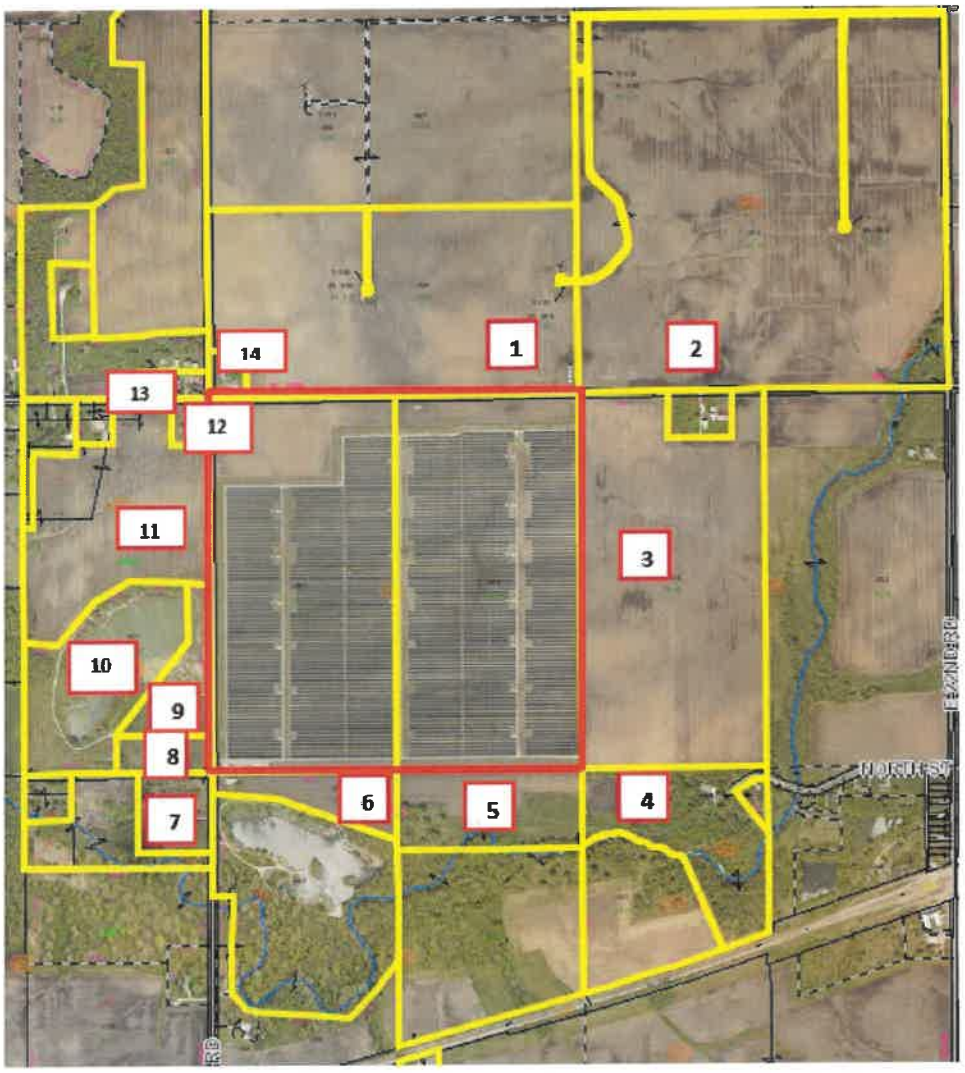
Real Estate Tax Information: Prior to development of the solar farm, in 2011, the owner of this 158-acre site paid real estate taxes of $3,000 annually. In the year following the solar farm development, 2012, real estate taxes increased to approximately $240,000, a 7,791 percent increase in tax revenue for the site.

PIN	Acres	2011 Taxes Paid	2012 Taxes Paid	Tax Increase	2011 Assessed Value	2012 Assessed Value	Value Increase
LaSalle County, IL							
34-22-100-000	78.99	$ 1,580	$ 120,064	7501%	$ 23,830	$ 1,812,357	7505%
34-22-101-000	78.80	$ 1,457	$ 119,539	8106%	$ 21,975	$ 1,804,433	8111%
TOTAL	**157.79**	**$ 3,036**	**$ 239,602**	**7791%**	**$ 45,805**	**$ 3,616,790**	**7796%**

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The map below displays the parcels in the solar farm site (outlined in red). Properties adjoining the solar parcels are numbered for subsequent analysis.



Grand Ridge Solar - Adjoining Properties

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The surrounding area is primarily populated with agricultural uses. Some of these agricultural parcels contain homesteads on the site and others are fully unimproved.

Adjoining Properties 1, 3, 5, 6, 7, 13, and 14 have no sales data, therefore, those properties djoining Properties have been excluded from further analysis.

Recall, the solar farm was announced on December 31, 2010 and began operations in July 2012. Adjoining Properties 8 and 9 were sold in 1997 and 1996, respectively. These sales did not occur within a reasonable time period prior to announcement/completion. Therefore, Adjoining Properties 8 and 9 were excluded from further analysis.

Adjoining Property 4 sold in March 2011 while construction was ongoing. However, we have not considered this property for a paired sales analysis because the impact of being proximate to the solar farm could not be differentiated from the impact of the construction. Therefore, Adjoining Property 4 was excluded from further analysis.

Adjoining Property 2 transferred in September of 2018 with no consideration amount on a Trustee's deed from Gemini Farms LLC to the Bedeker Family Gift Trust. John and Susan Bedeker are owners of the Adjoining Property 1. This is not considered an arm's length transaction, therefore, Adjoining Property 2 was excluded from further analysis.

Adjoining Properties 11 and 12 were initially one parcel of 37.07 acres. Adjoining Property 12 sold in October 2016, which is a reasonable time period after completion of the solar farm. When Adjoining Property 12 was sold, the parcel was split into the two-acre homesite now known as Adjoining Propeprty 12, and the 35.07 acre farm, that was retained by the seller. Therefore, we have excluded Adjoining Property 11 and only considered Adjoining Property 12 (Test Area Sale) for paired sales analysis.

PAIRED SALES ANALYSIS

We have considered only one type of paired sales analysis, we have compared sales of similar properties not proximate to the solar farm (Control Area Sales) to the sales of the adjoining property (Test Area Sale), after the completion of the solar farm project.

Adjoining Property 12 (Test Area Sale) was considered for a paired sales analysis, and we analyzed this property as a single-family home use, a 2,328 square foot home located on a 2.0- acre parcel that sold in October 2016. This parcel is approximately 366 feet from the closest solar panel, and the improvements are approximately 479 feet from the closest solar panel. The table on the following page outlines the other important characteristics of Adjoining Property 12.

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Grand Ridge Solar Farm Test Area Sale - Adjoining Property 12										
Property #	Address	Sale Price	Beds	Baths	Year Built	Home Size (SF)	Improvements	Site Size (AC)	Sale Price/SF	Sale Date
Adjoining Property 12	2098 N 15th Rd, Streator, IL	$186,000	3	4.0	1997	2,328	Single Family Home and Garage and Farm Acreage	2.0	$79.90	Oct-16

We have found five Control Area Sales using data from the Northern Illinois Multiple Listing Service (MLS) and verified these sales through county records, conversations with brokers, and the County Assessor's office. We excluded sales that were not arm's length, such as REO sales or those between related parties. We have excluded any home sites under one acre and included only sales with a similar quantity of bedrooms, bathrooms, and living area. The Control Area Sales are comparable in most physical characteristics and bracket Adjoining Property 12 reasonably.



Grand Ridge Solar: Test Area Sale Map

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It is important to note that the Control Area Sales are not adjoining to any solar farm, nor do they have a view of one from the property. Therefore, neither the announcement nor the completion of the solar farm use could have impacted the sales price of these properties. It is informative to note that the average marketing time (from list date to closing date) for Control Area Sales of 171 days is consistent with the marketing time for the Test Area Sale which was on the market for 169 days. This is an indication that the marketability of the Test Area Sale was not negatively influenced by proximity to the solar farm.

We analyzed the five Control Area Sales and adjusted for market conditions using a regression analysis to identity the appropriate monthly market conditions adjustment. The results of the paired sales analysis for the Grand Ridge Solar Farm are presented below.

CohnReznick Paired Sales Anaysis Grand Ridge Solar Farm Adjoining Property 12		
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF
Test Area Sale (1)	Yes: Adjoining solar farm	$79.90
Control Area Sales (5)	No: Not adjoining solar farm	$74.35
Difference between Unit Price of Test Area Sale and Adjusted Median Unit Price of Control Area Sales		7.46%

The unit sale price of the Test Area Sale was somewhat higher than the median adjusted unit sale price of the Control Area Sales.

We contacted the selling broker of the Test Area Sale home, Tina Sergenti with Coldwell Banker, who said that the proximity of the solar farm had no impact on the marketing time or selling price of the home. The Test Area Sale sold with 169 days on market (5 – 6 months) compared to the Control Area Sales, which sold between 10 471 days on market (0 and 16 months).

Noting no negative price differential, it does not appear that the Grand Ridge Solar Farm impacted the sales price of the Test Area Sale, Adjoining Property 12. This was confirmed by the real estate agent who marketed and sold this home.

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SOLAR FARM 3: DTE LAPEER SOLAR PROJECT, LAPEER, MICHIGAN

Coordinates: Latitude 43.0368219316, Longitude -83.3369986251

PINs: L20-95-705-050-00, L20-98-008-003-00

Total Land Size: ±365 Acres

Date Project Announced: 2016

Date Project Completed: May 2017

Output: 48.28 MW AC



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The Surrounding Area: The DTE Lapeer solar farm is located just south of the City of Lapeer, in Lapeer County, Michigan and is a joint project between the City of Lapeer and DTE Electric Company. The solar farm was developed with Inovateus Solar MI, LLC to meet Michigan renewable energy standards. The solar farm features over 200,000 panels, a power output of 48.28 MW AC, and produces enough energy to power 14,000 homes. The Lapeer solar project was developed in two phases: the Demille Solar installation and the Turrill Solar installation. For purposes of our study, taken together, both installations are considered one solar farm.



DTE's Lapeer Solar Projects Demille and Turrill Solar installations

Lapeer is considered to be in the Tri-Cities area of central Michigan and is approximately 21 miles east of the City of Flint. Interstate-69 serves Lapeer and runs east-west just south of the solar farm. The two phases of the solar installation are on the east and west sides of Michigan State Route 24 from each other.

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The Immediate Area: Land uses surrounding the Demille installation include a correctional facility and industrial uses to the west, buffered by a mature stand of trees, a retail center to the northeast, other commercial uses to the east along MI-24/South Lapeer Road, and residential homes to the southeast. Interstate-69 runs south of the Demille solar installation.

The Turrill installation is surrounded to the north by a residential subdivision, to the north and east by industrial uses, to the south by vacant land and residential homes, and to the west by light commercial and professional uses along MI-24/South Lapeer Road. Hunter's Creek divides two sets of solar arrays in the Turrill installation.

The Demille installation adjoins Interstate-69 to the South; while a residential subdivision adjoins the solar farm to the east. To the northeast corner of the solar panels is a senior living facility, Stonegate Health Campus, developed before the solar facility.

Real Estate Tax Information:

Prior to the development of the solar farm, the land under the Demille and Turrill solar installations were municipal-owned and were not subject to property tax. After development, in 2017, the land became taxable and taxes were $82,889 total, as shown below.

PIN	Acres	2016 Taxes Paid	2017 Taxes Paid	Tax Increase	2016 Assessed Value	2017 Assessed Value	Value Increase
Lapeer County, MI							
L20-98-008-003-00*	110.84	$ -	$ 34,294	N/A	$ -	$ 726,700	N/A
L20-95-705-050-00*	254.84	$ -	$ 48,595	N/A	$ -	$ 1,029,750	N/A
TOTAL	**365.68**	**$ -**	**$ 82,889**	**N/A**	**$ -**	**$ 1,756,450**	**N/A**

* Prior to development as a solar farm, the parcels were municpal property without a taxable value.

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PAIRED SALE ANALYSIS

The maps, below, and on the following pages display properties adjoining the solar sites that are numbered in red for subsequent analysis.

Demille Solar Farm



DTE Lapeer Solar Projects - Demille Adjoining Properties

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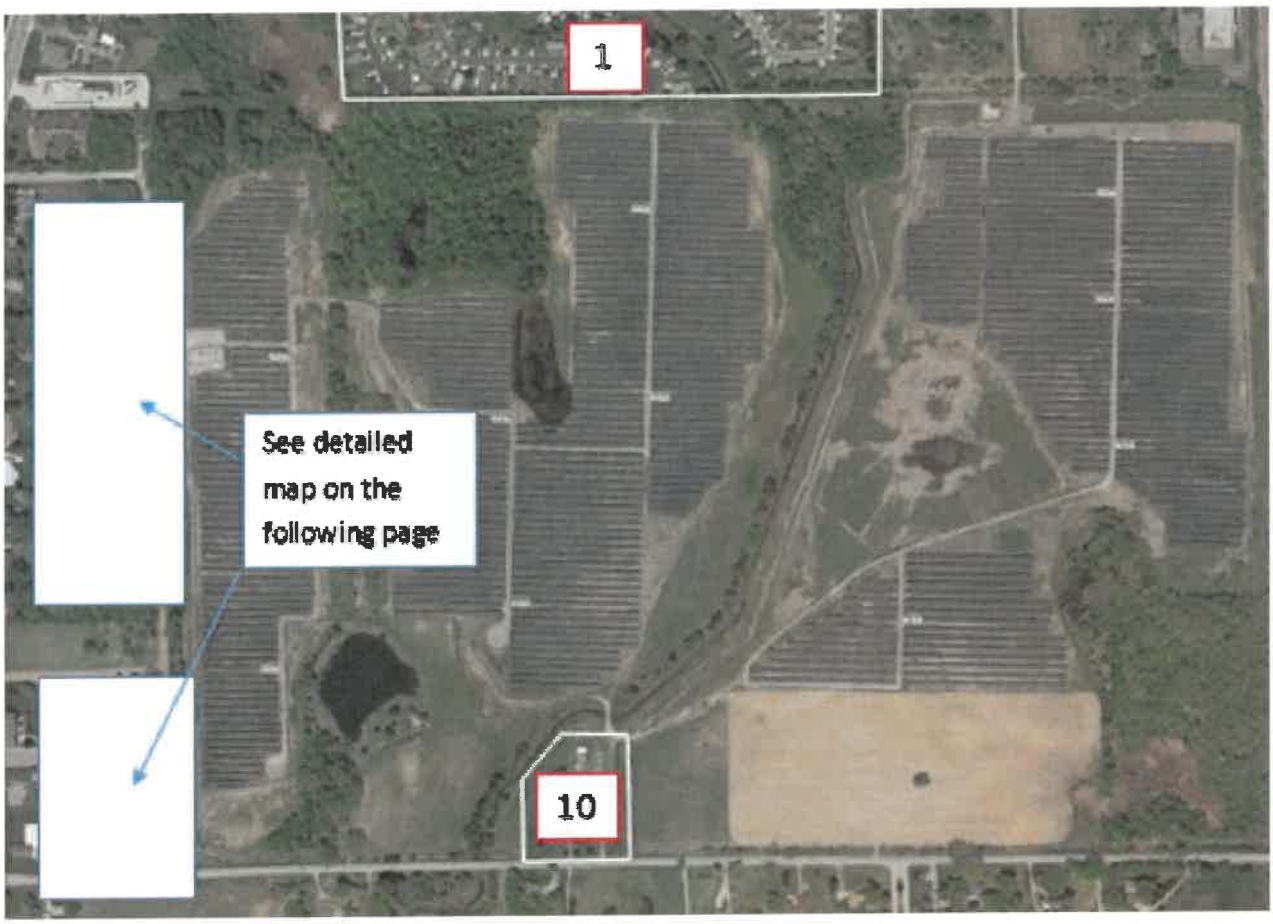


DTE Lapeer Solar Projects - Demille Adjoining Properties

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Turrill Solar Farm



DTE Lapeer Solar Projects - Turrill Adjoining Properties

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DTE Lapeer Solar Projects - Turrill Adjoining Properties

In reviewing Adjoining Properties to study in a Paired Sale Analysis, several properties and sales were considered but eliminated from further consideration as discussed below.

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We identified eight Adjoining Properties that sold since the solar farm started operations in May of 2017: Adjoining Properties 3, 4, 7, 9, 10, and 16 for the Demille Solar Farm, and Adjoining Properties 3 and 4 for the Turrill Solar Farm. Of these properties, three were considered atypical for the area.

Adjoining Property 7 adjacent to the Demille Solar farm is a split-level home with a finished walk out basement with a pool. The typical home in the area has a traditional basement and pools are atypical. The unusual nature of this sale was confirmed with the selling broker, Renee Voss (see comments below). We note that this home sold twice after the construction of the solar farm, once in September 2018 and again in August 2019. The appreciate rate between the two sale dates are analyzed further later in this section.

Adjoining Property 16 just south of the Demille Solar Farm is a 10.1-acre lot that is buffered by trees. The home is atypical for the area, as most homes are situated on lots between 1-acre and 1.5-acres in size and were built before 1980; this home was built in 2008. We interviewed the broker Josh Holbrook (see comments below) who confirmed the atypical nature of this property.

Adjoining Property 3, just west of the Turrill Solar Farm, was a ranch home with 1,348 square feet on a lot that was just over one acre. Comparables for homes of this size, type, and lot size were not available in the immediate market area. It should be noted that the price per square foot for this home ($108.01) is significantly higher than median price per square foot of either data set we studied.

As a part of our research, we interviewed three local real estate brokers that sold homes adjacent to the Lapeer Solar farm. According to the brokers, there was no impact on the home prices or marketability due to the homes' proximity to the solar arrays.

Renee Voss of Coldwell Banker, selling broker of the raised ranch at 1138 Don Wayne Drive (Adjoining Property 7), which is adjacent to the Demille solar farm at the southeast corner, noted that there was no impact on this sale from the solar farm located to the rear. The home, which has a pool in the backyard, sold quickly with multiple offers, Voss stated.

Josh Holbrook, the selling broker of 1408 Turrill Road (known as Adjoining Property 16), located just south of the Demille Solar Farm, said the solar farm had no impact on the sale and that the community takes pride in the solar farm.

Anne Pence of National Realty Centers, the selling broker for 1126 Don Wayne Drive, a single-family home adjacent to the Demille solar farm (known as Test Area Sale 9), reported that "the solar farm did not have any effect on the sale of this home. The buyers did not care one bit about the solar field in the back yard. The fact is that you know no one is going to be behind you when they develop a solar farm in your back yard. And [sometimes the developer] put up trees to block the view. My in-laws also actually live at end of that street, even though they haven't sold or put their house on market, they don't mind the solar panels either. It's not an eyesore. And another house sold on that block, a raised ranch home, and it sold with no problems."

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Adjoining Properties 3, 4, and 9 to the Demille Solar Farm were considered for a paired sales analysis, and we analyzed these properties as single-family home uses in Group 1. The improvements on these properties are located between 275 to 305 feet to the nearest solar panel.

Test Area Sales Group 1 - Demille Solar									
Adj. Property #	Address	Median Sale Price	Median Site Size (AC)	Median Beds	Median Baths	Median Year Built	Median Square Feet	Median Sale Date	Median Price PSF
3, 4, 9	1174 Alice Dr, 1168 Alice Dr, 1126 Don Wayne Drive	$165,000	0.50	3	2.0	1973	1,672	Jan-19	$105.26

We analyzed six Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to the solar farm, that sold within a reasonable time frame from the median sale date of the Test Area Sales in Group 1. The Control Area Sales for Group 1 are ranch homes with three bedrooms and one and a half to two bathrooms. We excluded sales that were bank-owned, and those between related parties.



Lapeer Solar-Demille - Group 1: Test Area Sales Map

Control Area Sales were adjusted for market conditions using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeat-sales index measuring average price changes in repeat sales or

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refinancing of the same properties. The result of our analysis for DTE Lapeer Solar Project - Group 1-Demille is presented on the below.

CohnReznick Paired Sale Analysis DTE Lapeer Solar Group 1 - Demille Solar		
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF
Test Area Sales (3)	Adjoining solar farm	$105.26
Control Area Sales (6)	No: Not adjoining solar farm	$99.64
Difference between Unit Price of Test Area Sales and Adjusted Median Unit Price of Control Area Sales		5.65%

The days on market for the three Test Area Sales had a median of 29 days on market (ranging from 5 to 48 days), while the median days on market for the Control Area Sales was 21 days (ranging from 5 to 224 days), ***and we note no significant marketing time differential.***

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GROUP 2 – DEMILLE

Adjoining Property 10 to the Demille Solar Farm was considered for a paired sales analysis, and we analyzed this property as a single-family home use in Group 2. The improvements on this property are located approximately 315 to the nearest solar panel.

Test Area Sale Group 2 - Demille Solar										
Adj. Property #	Address	Sale Price	Median Site Size (AC)	Bedrooms	Bathrooms	Year Built/Renovated	Square Feet	Other Features	Sale Date	Price PSF
10	1120 Don Wayne Drive, Lapeer	$194,000	0.47	3	2.5	1976/2006	1,700	Above Ground Pool, Two Car Garage	Nov-19	$114.12

We analyzed five Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to the solar farm, that sold within a reasonable time frame from the sale date of the Test Area Sale in Group 2. The Control Area Sales for Group 2 are similarly sized homes in Lapeer County with three to four bedrooms and one and half to three bathrooms, with an above-ground pool, and an attached garage. We excluded sales that were bank-owned, and those between related parties.



DTE Lapeer Solar-Demille - Group 2: Test Area Sales Map

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Control Area Sales were adjusted for market conditions using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeat-sales index measuring average price changes in repeat sales or refinancing of the same properties. The result of our analysis for DTE Lapeer Solar Project - Group 2 is presented below.

CohnReznick Paired Sale Analysis DTE Lapeer Solar Group 2 - Demille Solar		
No. of Sales	**Potentially Impacted by Solar Farm**	**Adjusted Median Price Per SF**
Test Area Sales (1)	Adjoining solar farm	$114.12
Control Area Sales (5)	No: Not adjoining solar farm	$113.01
Difference between Unit Price of Test Area Sales and Adjusted Median Unit Price of Control Area Sales		**0.98%**

The marketing time for the Test Area Sales was 90 days on market, while the median marketing time for the Control Area Sales was 34 days (ranging from 3 to 73 days). We note the Test Area Sale was initially listed above its market value, as there was a listing price decline after a month on the market. We also note that after the final decrease of the list price, the Test Area Sale home was only on the market 51 more days, which is within the range exhibited by the Control Area Sales.

GROUP 3 – TURRILL

Adjoining Property 4 to the Turrill Solar Farm was analyzed separately since it is a two-story home on a larger lot than the Test Area Sale in Group 2. The home on Adjoining Property 4 is 290 feet from the property line to the nearest solar panel.

Test Area Sale Group 3 - Turrill Solar									
Adj. Property #	**Address**	**Median Sale Price**	**Median Site Size (AC)**	**Median Beds**	**Median Baths**	**Median Year Built**	**Median Square Feet**	**Median Sale Date**	**Median Price PSF**
4	1060 Cliff Drive	$200,500	1.30	4	2.5	1970	2,114	Sep-18	$94.84

We analyzed four single-family homes as Control Area Sales with similar construction that were not located in close proximity to the solar farm, that sold within a reasonable time frame from the sale date of Adjoining Property 4.

The Control Area Sales for Group 3 are two-story homes with two to four bedrooms and 2.5 to 3 bathrooms. We excluded sales that were bank-owned, and those between related parties.

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DTE Lapeer Solar-Turrill - Group 3: Test Area Sales Map

Control Area Sales were adjusted for market conditions using the Federal Housing Finance Agency's House Price Index (HPI), a weighted, repeat-sales index measuring average price changes in repeat sales or refinancing of the same properties. The result of our analysis for DTE Lapeer Solar Project-Turrill – Group 3 is presented on the following page.

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CohnReznick Paired Sale Analysis DTE Lapeer Solar Group 3 - Turrill Solar		
No. of Sales	**Potentially Impacted by Solar Farm**	**Adjusted Median Price Per SF**
Test Area Sale (1)	Adjoining solar farm	$94.84
Control Area Sales (4)	No: Not adjoining solar farm	$96.32
Difference between Unit Price of Test Area Sale and Adjusted Median Unit Price of Control Area Sales		**-1.53%**

The marketing time for the Test Area Sale was two days on market, while the median days on market for the Control Area Sales was 35 days (ranging from 11 to 177 days), ***and we note no negative marketing time differential.***

Noting no significant price differential in any of the three groups, it does not appear that the DTE Lapeer Solar Farm had any negative impact on adjacent property values.

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BEFORE & AFTER ANALYSIS – DEMILLE SOLAR PROJECT

We note two of the Test Area Sales in Group 1 of the Demille Solar project (Adjoining Properties 4 and 9), one sale in Group 2 of the Demille Solar farm (Adjoining Property 10), as well as Adjoining Property 7 have sold at least twice over the past 15 years. To determine if any of the rates of appreciation for these identified home sales were affected by the proximity to the Demille Solar farm, we prepared a Repeat-Sales Analysis on each identified adjoining property. First, we calculated the total appreciation between each sale of the same property, the number of months that elapsed between each sale, and determined the monthly appreciation rate. Then, we compared extracted appreciation rates reflected in the Federal Housing Finance Agency (FHFA) Home Price Index for Michigan's 48446 zip code (where the identified homes are located) over the same period. The index for zip codes is measured on a yearly basis and is presented below.

48446 Zip Code - Housing Price Index Change (Year over Year) Not Seasonally Adjusted					
Five-Digit ZIP Code	Year	Annual Change (%)	HPI	HPI with 1990 base	HPI with 2000 base
48446	2004	2.02	438.38	206.29	111.35
48446	2005	3.68	454.53	213.89	115.45
48446	2006	-1.76	446.53	210.12	113.42
48446	2007	-6.35	418.17	196.78	106.22
48446	2008	-8.37	383.17	180.31	97.33
48446	2009	-10.62	342.49	161.16	86.99
48446	2010	-8.94	311.86	146.75	79.21
48446	2011	-6.89	290.37	136.64	73.75
48446	2012	0.29	291.22	137.04	73.97
48446	2013	7.27	312.39	147.00	79.35
48446	2014	7.10	334.56	157.43	84.98
48446	2015	5.10	351.63	165.47	89.32
48446	2016	6.10	373.08	175.56	94.76
48446	2017	6.74	398.23	187.39	101.15
48446	2018	5.96	421.96	198.56	107.18
48446	2019	5.74	446.17	209.95	113.33
48446	2020	4.99	468.43	220.43	118.98

We have presented the full repeat sales analysis on the following page.

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Repeat Sales Analysis											48446 Zip Code - FHFA House Price Index Change			
Property ID	Address	Land Area (Acres)	Total Finished Living Area (SF)	Most Recent Sale Date	Most Recent Sale Price	Prior Sale Date	Prior Sale Price	Total Appreciation	Months Elapsed Between Sales	Monthly Appreciation Rate	Index Level During Year of Most Recent Sale	Prior Sale Year Index Level	Total Appreciation	Monthly Appreciation Rate
4	1168 Alice Drive	0.46	1,672	10/9/2019	$176,000	12/8/2017	$144,000	22.22%	22	0.92%	446.17	398.23	12.04%	0.52%
4	1168 Alice Drive	0.46	1,672	12/8/2017	$144,000	10/1/1993	$100,000	44.00%	290	0.13%	398.23	238.05	67.29%	0.18%
9	1126 Don Wayne Drive	0.50	1,900	5/21/2018	$160,000	12/21/2007	$119,000	34.45%	125	0.24%	446.17	418.17	6.70%	0.05%
10	1120 Don Wayne Drive	0.47	1,700	11/8/2019	$194,000	10/15/2014	$173,200	12.01%	61	0.19%	446.17	334.56	33.36%	0.47%
7	1138 Don Wayne Drive	0.47	2,128	9/7/2018	$179,900	8/22/2014	$148,500	21.14%	49	0.40%	446.17	334.56	33.36%	0.60%
7	1138 Don Wayne Drive	0.47	2,128	8/28/2019	$191,000	9/7/2018	$179,900	6.17%	12	0.51%	446.17	446.17	0.00%	0.00%
	Median - Test Area Sales	*0.47*	*1,800*							*0.32%*				*0.33%*
	Median - Before/After	*0.49*	*2,019*							*0.21%*				*0.11%*

Conclusion

When compared to the FHFA home price index for the local zip code, the median monthly appreciation rate of the sales of properties adjoining the Demille Solar Farm that sold before construction of the solar farm and again after construction of the solar farm outperformed the median for the zip code, as depicted in the far-right column in the table above (and highlighted in orange). Additionally, the extracted appreciation rate for the resales of Adjoining Properties 4 and 7, that sold twice after the solar farm was constructed, exhibited higher rates of appreciation than the Home Price Index for the zip code (highlighted in white). As such, *we have concluded that there does not appear to be a consistent detrimental impact on the value of properties adjacent to the DTE Lapeer-Demille Solar Farm.*

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SOLAR FARM 4: WOODLAND SOLAR FARM, ISLE OF WIGHT COUNTY, VIRGINIA

Coordinates: Latitude 36.890000, Longitude -76.611000

PINs: 41-02-004, 41-02-001, 41-02-001A, 41-02-005

Total Land Size: 211.12 acres

Date Project Announced: August 4, 2015

Date Project Completed: December 2016

Output: 19.0 MW AC



Aerial imagery retrieved from Google Earth

The Woodland Solar Farm is located in unincorporated Isle of Wight County, Virginia, and was developed by Dominion Virginia Power in 2016. This solar farm has a capacity of 19.0 Megawatts (MW) AC of power, which is enough to power 4,700 homes. The solar farm sits on 204 acres, part of Oliver Farms, a 1,000-acre site that was

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chosen for its flat land and proximity to power lines. The land under the solar arrays was previously farmed and used to grow broccoli, collards, peas, strawberries, and butter beans. The solar installation includes 79,648 solar panels and was one of the largest of its kind at the time of construction.

The Surrounding Area: Isle of Wight County is in the southeast part of Virginia and has shoreline along the James River on its eastern border. The county is predominantly rural and has two incorporated towns, Smithfield and Windsor. The Woodland Solar facility is approximately 27 miles northwest of Norfolk, Virginia, across the Elizabeth River and the Nansemond River. The solar site is also approximately 21 miles southwest of Newport News, Virginia. The town of Smithfield is approximately nine miles northeast of the solar facility and the town of Windsor is approximately 12 miles southwest. The solar facility is near the intersection of State Route 600 (Oliver Drive) and State Route 602 (Longview Drive).

The Immediate Area: Land uses surrounding the Woodland Solar facility include forests and agricultural land to the north, west, and south, and residential and farmland to the east.

Landscaping around the solar site consists of the naturally occurring vegetation and forests. It should be noted that the landowner that leases the land to the solar owner has agricultural buildings and other structures along Longview Drive and the nearest solar panels are approximately 220 feet from the property line.

Real Estate Tax Information: In 2015, prior to the property being assessed as a solar farm, the assessed value of the property was approximately $542,200 and ownership paid $4,609 in real estate taxes (see below). In 2016, the assessed value increased to $3,021,600 and the real estate tax increased to $27,844.

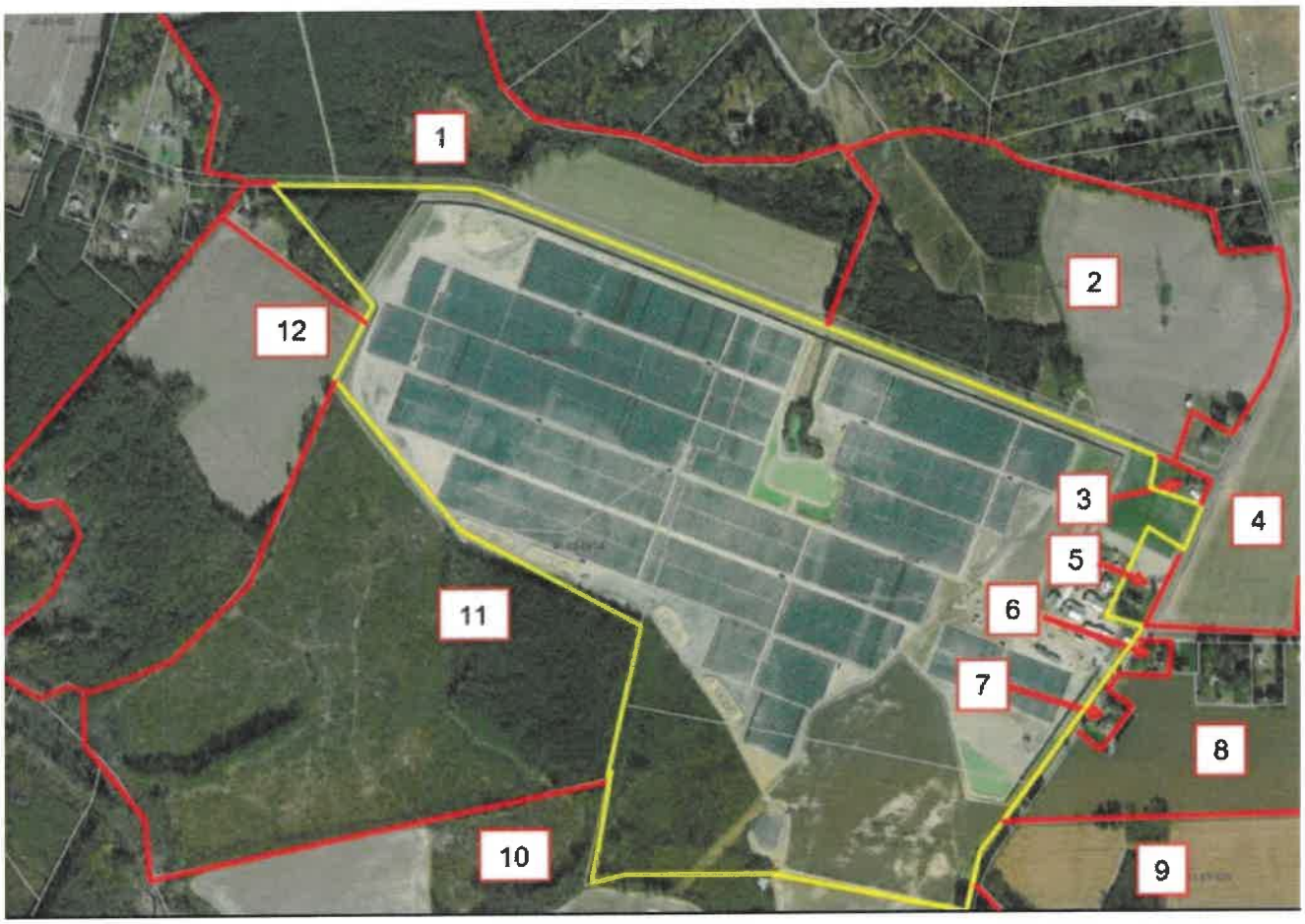
PIN	Acres	2015 Taxes Paid	2016 Taxes Paid	Tax Increase	2015 Assessed Value	2016 Assessed Value	Value Increase
Isle of Wight County, VA							
41-02-004	107.32	$ 2,250	$ 15,985	610%	$ 264,700	$ 1,728,100	553%
41-02-001	62.66	$ 1,369	$ 8,601	529%	$ 161,000	$ 939,900	484%
41-02-001A	8.08	$ 230	$ 1,193	420%	$ 27,000	$ 110,700	310%
41-02-005	33.06	$ 761	$ 2,065	171%	$ 89,500	$ 242,900	171%
TOTAL	**211.12**	**$ 4,609**	**$ 27,844**	**504%**	**$ 542,200**	**$ 3,021,600**	**457%**

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PAIRED SALE ANALYSIS:

The map below displays the Adjoining Properties to the solar farm (outlined in red). Properties adjoining the solar farm parcels are numbered for subsequent analysis.



Woodland Solar - Adjoining Properties

In reviewing Adjoining Properties to study in a Paired Sale Analysis, several properties and sales were considered but eliminated from further consideration as discussed below.

We identified three Adjoining Properties that sold since the solar farm started operations in December 2016: Adjoining Property 3, and two parcels included in Adjoining Property 5. The two properties that were considered part of Adjoining Property 5, sold between related parties, and were sales between family members of the land lessor for the solar site. These two sales were excluded from further analysis as they were not arms' length transactions.

Adjoining Property 3 was considered for a paired sales analysis and we analyzed this property as single-family home use. The improvements on this property are located approximately 600 feet from the nearest solar panel.

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Woodland Solar Farm Test Area Sale - Adjoining Property 3									
Adj. Property #	Address	Sale Price	Site Size (AC)	Beds	Baths	Year Built	Home Size GLA (SF)	Sale Date	Price PSF
3	18146 Longview Drive	$175,000	1.00	3	1	1978	1,210	Jun-16	$144.63

We analyzed five Control Area Sales of single-family homes with similar construction and use that were not located in close proximity to the solar farm, that sold within a reasonable time frame from the sale date of the Test Area Sale. The Control Area Sales are one-story homes with three bedrooms and either one or two bathrooms. We excluded sales that were bank-owned, REO sales, and those between related parties.



Woodland Solar – Test Area Sale Map

The Control Area Sales were adjusted for market conditions using a regression analysis to identify the appropriate monthly market conditions adjustment. The result of our analysis for Woodland Solar Farm is presented on the following page.

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CohnReznick Paired Sales Anaysis Woodland Solar Farm Adjoining Property 3		
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per SF
Test Area Sale (1)	Yes: Adjoining solar farm	$144.63
Control Area Sales (5)	No: Not adjoining solar farm	$137.76
Difference between Unit Price of Test Area Sale and Adjusted Median Unit Price of Control Area Sales		4.99%

The difference between the unit price of the Test Area Sale and the Adjusted Median Unit Price of the Control Area Sales is considered within the range for a typical market area.

Noting no negative marketing time differential, the Test Area Sale sold in 33 days (1-2 months), while the Control Area Sales sold between 17 and 37 days (0-2 months), with a median time on market of 28 days.

Noting no negative price differential, with the Test Area Sale having a higher unit sale price than the Control Area Sales, it does not appear that the Woodland Solar Farm had any negative impact on adjacent property values.

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SOLAR FARM 5: DOMINION INDY SOLAR III, MARION COUNTY, INDIANA

Coordinates: Latitude 39°39'14.16"N, Longitude 86°15'35.06"W

PIN: 49-13-13-113-001.000-200

Total Land Size: 129 acres

Date Project Announced: August 2012

Date Project Completed: December 2013

Output: 8.6 MW AC (11.9 MW DC)

The Dominion Indy III solar farm was developed by Dominion Renewable Energy and became operable in December 2013. This solar farm has ground-mounted solar panels and has the capacity for 8.6 Megawatts (MW) AC of power. The panels are mounted in a fixed tilt fashion with 12 inverters.

The Surrounding Area: The Dominion Indy III solar farm is located in Decatur Township, in the southwest portion of Marion County, Indiana. The solar farm is approximately 10 miles southeast of the Indianapolis International Airport and approximately eight and a half miles from the center of Indianapolis.

The Immediate Area: The solar installation is on the southern side of West Southport Road. Adjoining parcels to the west, south, and east are agricultural in nature, actively farmed primarily with row crops and large areas of mature trees. There is one single family home on 4.78 acres of land at the northwest corner of the solar site, with frontage on West Southport Road, identified in our analysis as Adjoining Property 9.

To the north, across West Southport Road from the solar site, is the single-family residential subdivision known as Crossfield. Originally developed with over 81 acres of land by the Key Life Insurance Company, the one- and two-story homes in the subdivision were built between approximately 1998 and 2011.

All of the adjacent land parcels to the solar farm are used for agricultural or residential purposes.

The solar farm is surrounded by a chain link fence around all of the solar panels. Additionally, there are some natural shrubs and trees on all sides of the property; this vegetation was in place before the solar farm was developed.

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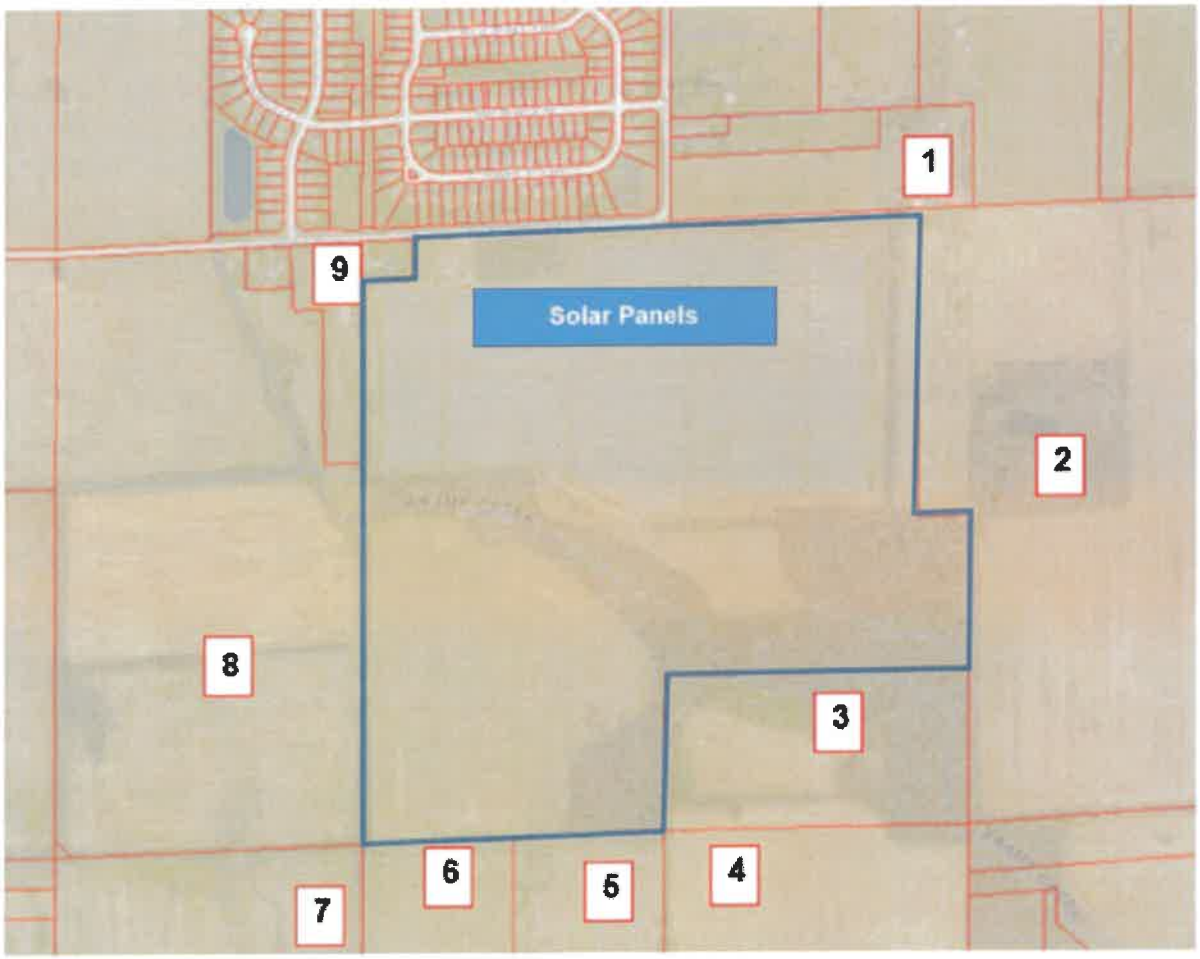
Real Estate Tax Information: Prior to development of the solar farm, in 2013, the owner of this 129-acre site paid real estate taxes of $1,788 annually. After development of the solar farm development, in 2015, real estate taxes increased to approximately $16,405, an 818 percent increase in tax revenue for the site.

PIN	Acres
Marion County, IN 49-13-13-113-001.000-200	129.04
TOTAL	**129.04**

2013 Taxes Paid	2015 Taxes Paid	Tax Increase
$ 1,788	$ 16,405	818%
$ 1,788	**$ 16,405**	**818%**

2013 Assessed Value	2015 Assessed Value	Value Increase
$ 89,400	$ 109,900	23%
$ 89,400	**$ 109,900**	**23%**

The map below, and the maps on the following pages, display the parcels within the solar farm is located (outlined in blue). Properties adjoining this site are numbered for subsequent analysis.



Dominion Indy III - Adjoining Properties

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PAIRED SALES ANALYSIS

We have considered two types of paired sales analysis with regards to the Dominion Indy III solar farm. The first compares sales of Adjoining Properties (Test Area Sales) to the solar farm after the completion of the solar farm site to similar properties not proximate to the solar farm (Control Area Sales). We utilized this type of paired sale analysis for all three groups of Adjoining Properties under study.

The second type of paired sale analysis is known as a Before and After analysis which compares sales of Adjoining Properties that occurred prior to the announcement of the solar farm with the sales of the same Adjoining Properties after the completion of the solar farm development. We were able to use home sale data from the Crossfield subdivision that is located to the north of the solar site, across West Southport Road, for this analysis.

GROUP 1

Adjoining Property 2 is a vacant 86.96-acre agricultural parcel located to the east of the solar site. Adjoining Property 2 sold in October 2017 and was considered for a paired sale analysis, known as a Test Area Sale, in Group 1.

The property line of this unimproved parcel is approximately 166 feet from the closest solar panel. The following table outlines the other important characteristics of Adjoining Property 12.

Test Area Sale Group 1 - Agricultural Land								
Adjoining Property #	Address	Sale Price	Site Size (AC)	NCCPI Index	Wetlands	Floodplain	Sale Price/AC	Sale Date
Adjoining Property 2	5755 W Southport Rd, Indianapolis, IN	$738,584	89.96	63.4	1%	Zone X	$8,210	Oct-17

Soil Productivity and Land Value Trends and the NCCPI Productivity Index

Crop yields have been the basis for establishing a soil productivity index, and are used by county assessors, farmers, and market participants in assessing agricultural land. While crop yields are an integral part in assessing soil qualities, it is not an appropriate metric to rely on because "yields fluctuate from year to year, and absolute yields mean little when comparing different crops. Productivity indices provide a single scale on which soils may be rated according to their suitability for several major crops under specified levels of management such as an average level."[1] The productivity index, therefore, not crop yields, is best suited for applications in land appraisal and land-use planning.

The United States Department of Agriculture's (USDA) National Resources Conservation Services (NRCS) developed and utilizes the National Commodity Crop Productivity Index (NCCPI) as a national soil interpreter and is used in the National Soil Information System (NASIS), but it is not intended to replace other crop

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production models developed by individual states.[17] The focus of the model is on identifying the best soils for the growth of commodity crops, as the best soils for the growth of these crops are generally the best soils for the growth of other crops.[18] The NCCPI model describes relative productivity ranking over a period of years and not for a single year where external influences such as extreme weather or change in management practices may have affected production. At the moment, the index only describes non-irrigated crops, and will later be expanded to include irrigated crops, rangeland, and forestland productivity.[19]

Yields are influenced by a variety of different factors including environmental traits and management inputs. Tracked climate and soil qualities have been proven by researchers to directly explain fluctuations in crop yields, especially those qualities that relate to moisture-holding capacity. Some states such as Illinois have developed a soil productivity model that considers these factors to describe "optimal" productivity of farmed land. Except for these factors, "inherent soil quality or inherent soil productivity varies little over time or from place to place for a specific soil (map unit component) identified by the National Cooperative Soil Survey (NCSS)."[20] The NRCS Web Soil Survey website has additional information on how the ratings are determined. The **State of Indiana** does not have its own crop production model and utilizes the NCCPI.

In analyzing agricultural land sales for Control Area Sales with similar characteristics to Adjoining Property 2, we have excluded any parcels with NCCPI soil indices less than 50.0 and greater than 85.0.

We identified and analyzed four Control Area Sales that were comparable in location, size, and use that were not located in close proximity to the solar farm. The Control Area Sales for Adjoining Property 2 are land tracts that were larger than 20 acres and utilized specifically as farmland. We excluded sales that were bank-owned, those between related parties, split transactions, and land with significant improvements.

The Control Area Sales that are included in this analysis sold within a reasonable time frame from the sale date of the Test Area Sale and are similar to the Test Area Sale in physical characteristics.

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[17] Agricultural land rental payments are typically tied to crop production of the leased agricultural land and is one of the primary reasons the NCCPI was developed, especially since the model needed to be consistent across political boundaries.

[18] Per the User Guide for the National Commodity Crop Productivity Index, the NCCPI uses natural relationships of soil, landscape and climate factors to model the response of commodity crops in soil map units. The present use of the land is not considered in the ratings.

[19] AgriData Inc. Docs: http://support.agridatainc.com/NationalCommodityCropProductivityIndex(NCCPI).ashx

[20] USDA NRCS's User Guide National Commodity Crop Productivity Index (NCCPI)

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Dominion Indy III - Group 1: Test Area Sale Map

The Control Area Sales were adjusted for market conditions using a regression and trend analysis to identify the appropriate monthly market condition adjustment. Using the agricultural land sale data published in the *Land Sales Bulletin,*[21] from January 2016 through December 2017, which includes reliable and credible data for analysis, we extracted a monthly rate of change of 0.50 percent.

The results of our analysis for Adjoining Property 2, in Group 1 are presented on the following page.

[21] https://www.landsalesbulletin.com/

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CohnReznick Paired Sale Analysis Dominion Indy III Solar Group 1 - Agricultural Land		
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per Acre
Test Area Sale (Adjoining Property 2)	Yes: Solar Farm was completed by the sale date	$8,210
Control Area Sales (4)	No: Not adjoining solar farm	$8,091
Difference between Unit Price of Test Area Sale and Adjusted Median Unit Price of Control Area Sales		1.47%

Noting the relatively low price differential, in which the Test Area Sale was higher than the median for the Control Areas Sales, it does not appear that the Dominion Indy III solar farm had any negative impact on the adjoining agricultural property value.



Dominion Indy III Solar - Adjoining Properties

We idenitified a total of nine Adjoining Properties that sold after the develoment of the solar farm as single-family home uses. Adjoining Properties 11, 13, 14, 15, 18, 20, 22, 24 and 26 were analyzed in two paired sales analyses (Group 2 and Group 3). These nine properties were analyzed as single-family homes and they are located in the Crossfield subdivision, across West Southport Road from the solar site, as seen in the map above.

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It should be noted that Adjoining Properties 11 and 24 have sold more than once since the solar farm was constructed, and each sale is included in the analysis. Adjoining Property 11 sold first in December 2015 and later in July 2018, approximately two and a half years later. Adjoining Property 24 sold first in February 2014 and later in April 2019, approximately five years later. Our research indicated that these were arm's-length sales.

The nine Adjoining Properties that were included in our paired sales analysis were divided into two groups, based on the sale dates of the Test Area Sales.

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GROUP 2

For Group 2 (sales in 2014 – 2016), we analyzed four Control Area Sales with similar location, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Group 2 Test Area Sales.

Test Area Sales Group 2									
Adj. Property #	Address	Median Sale Price	Median Site Size (AC)	Median Beds	Median Baths	Median Year Built	Median Square Feet	Median Sale Date	Median Price PSF
11, 20, 22, 24	5933 Sable Dr, 5829 Sable Dr, 5813 Sable Dr, 5737 Sable Dr	$129,375	0.23	4	2.0	2008	2,163	Jul-15	$60.61

The Test Area Sales in Group 2 are located between 230 feet and 404 feet from the house to the solar panels. The Control Area Sales for Group 2 are located beyond this area in other areas of the Crossfield Division and in other nearby subdivisions.



Dominion Indy III – Group 2: Test Area Sales

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GROUP 3

For Group 3 (sales occurring in 2017 - 2019), we analyzed a set of seven Control Area Sales with similar locations, square footages, lot sizes, and ages that sold within a reasonable time frame from the median sale date of the Group 3 Test Area Sales.

Dominion Indy III Solar Test Area Sales Group 3									
Adj. Property #	Address	Median Sale Price	Median Site Size (AC)	Median Beds	Median Baths	Median Year Built	Median Square Feet	Median Sale Date	Median Price PSF
11, 13, 14, 15, 18, 24, 26	5933 Sable Dr, 5921 Sable Dr, 5915 Sable Dr, 5909 Sable Dr, 5841 Sable Dr, 5737 Sable Dr, 5731 Sable Dr	$169,900	0.23	3	2.5	2006	2,412	Jul-18	$72.15

The Test Area Sales in Group 3 are located between 227 feet and 419 feet from the house to the solar panels. The Control Area Sales are located beyond this area, in other areas of the Crossfield Division, and in other nearby subdivisions.



Dominion Indy III – Group 3: Test Area Sales

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Control Area Sales in Groups 2 and 3 were adjusted for market conditions using a regression analysis to identify the appropriate monthly market condition adjustment. The results of our study are presented below.

CohnReznick Paired Sale Analysis Dominion Indy III Solar Group 2		
No. of Sales	**Potentially Impacted by Solar Farm**	**Adjusted Median Price Per SF**
Test Area Sales (4)	Adjoining solar farm	$60.61
Control Area Sales (8)	No: Not adjoining solar farm	$57.84
Difference between Unit Price of Test Area Sales and Adjusted Median Unit Price of Control Area Sales		**4.78%**

CohnReznick Paired Sale Analysis Dominion Indy III Solar Group 3		
No. of Sales	**Potentially Impacted by Solar Farm**	**Adjusted Median Price Per SF**
Test Area Sales (7)	Adjoining solar farm	$72.15
Control Area Sales (11)	No: Not adjoining solar farm	$71.69
Difference between Unit Price of Test Area Sales and Adjusted Median Unit Price of Control Area Sales		**0.65%**

The Test Area Sales in Group 2 sold between 18 and 75 days on market (0-3 months), while the Control Area Sales in Group 2 sold between 2 and 649 days on market (0-23 months). The Test Area Sales in Group 3 sold between 3 and 75 days on market (0-3 months), while the Control Area Sales in Group 3 sold between 2 and 89 days on market (0-3 months).

Noting the relatively low price differentials, it does not appear that the Dominion Indy III solar farm had any negative impact on adjoining residential property values.

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BEFORE ANNOUNCEMENT AND AFTER CONSTRUCTION OF THE SOLAR FARM ANALYSIS

Due to the number of sales over time in the Crossfield subdivision, we were able to conduct an analysis on the prices of single-family homes before the solar farm announcement date in comparison to the prices of single-family homes after the construction of the Dominion Indy III solar farm. This analysis shows the appreciation rates of homes in the subdivision over the period before the solar farm was announced to after construction was complete. If there were a difference in the appreciation rates of homes within the Test Area (homes adjoining the solar farm) from the homes within the Control Areas (homes not adjoining the solar farm), we would expect to see it in the results of this analysis. We have provided our conclusions from the analysis below, and the following page displays an explanatory chart.

- The Before the Announcement of the solar farm period is from 2006 to July 2012. The After Construction of the solar farm period is from December 2013 to 2019.
- 25 Test Area Sales were sold from 2006 to 2019 and 46 Control Area Sales sold from 2008 to 2019.
    - The Test Area Sales are homes located adjoining the Dominion Indy III Solar Farm in the Crossfield subdivision.
    - The Control Area Sales are homes located in the remainder of the Crossfield subdivision, not adjoining the solar farm.
- In both the Test Area Sales (ORANGE) and Control Area Sales (BLUE) plotted on the chart on the following page, new construction homes sold through 2011, prior to announcement of the solar farm.
- The dotted lines are polynomial trend lines plotted by Microsoft Excel in order to illustrate and approximate the "average" trend of each set of data.
- After construction of the solar farm, in parallel with the improving economic climate (as depicted by the Red lines representing the Federal Housing Finance Agency's House Price Index for the East North Central region that includes Indiana), it appears that unit prices for both the Test Area Sales and the Control Area Sales appreciated at a similar rate over the period from 2013 to 2019.
- The economic climate improved in the period from 2013 to 2019, as shown by the Red line representing the Federal Housing Finance Agency's House Price Index for the East North Central region that includes Indiana. After construction of the solar farm, in parallel with the improving economic climate, it appears that unit prices for both the Test Area Sales and the Control Area Sales appreciated at a similar rate over the period from 2013 to 2019.

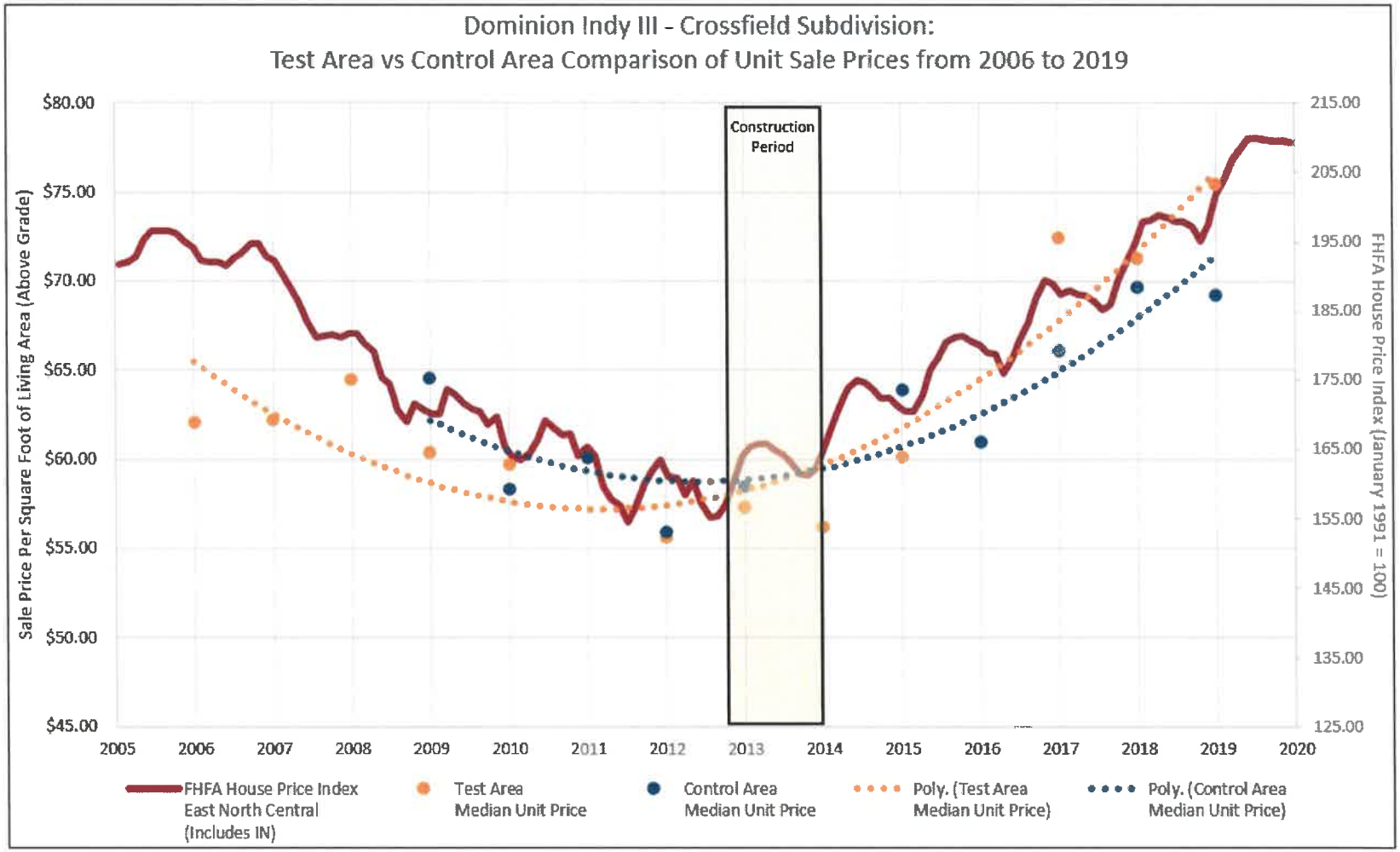
A difference in appreciation rates does not appear to exist between Test Area Sale homes versus the Control Area Sale homes.

Sale prices of single-family homes after the construction of the solar farm exhibit a similar appreciation trend as sales prior to the solar farm announcement. Overall, our findings indicate that there *is not a consistent and measurable difference* in prices that exists in association with homes proximate to the Dominion Indy III solar farm

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ANALYSIS OF BEFORE ANNOUNCEMENT AND AFTER CONSTRUCTION OF THE DOMINION INDY III SOLAR FAR



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SOLAR FARM 6: SUNFISH FARM SOLAR, WAKE COUNTY, NORTH CAROLINA

Coordinates: Latitude 35 33.457, Longitude 78 44.190

PIN: 675874971

Total Land Size: Approximately 49.6 acres

Date Project Completed: December 2015

Output: 5 MW AC



This Sunfish Farm solar facility is located in the southern portion of Wake County, North Carolina, approximately 16 miles south of Raleigh. The solar facility was placed into service in December 2015 and has a power generating capacity of 5 MW AC. The solar facility was developed by Cypress Creek Renewables, which has built several community-scale solar farms in North Carolina.

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The Surrounding Area: The Sunfish Farm solar facility is surrounding by single family homes, some of which are in subdivisions, as well as agricultural and forest land. The local area is accessible from Raleigh via Fayetteville Road (US Hwy 401) and Interstate 40. The Sunfish Farm solar farm is located southwest of the town of Fuquay-Varina, which has experienced considerable population growth over the past 10 years due to the area's proximity to Research Triangle Park (Raleigh, Durham, Chapel Hill).

The Immediate Area: The solar farm is buffered from residences and road frontages by trees and is surrounded by fencing. The solar farm is clearly visible from the roadways. Immediate land uses surrounding the solar farm include residential homes to the north, some residential homes (some that also contain commercial uses) to the west, agricultural land to the south, and agricultural land and residential homes to the east.

There is an 11.25-acre carve-out of land in the original, larger farmland parcel that was split from the parent parcel in 2014, as pictured below. Both the carved out parcel and the solar farm parcel are owned by an individual who leases the land for the solar farm use.



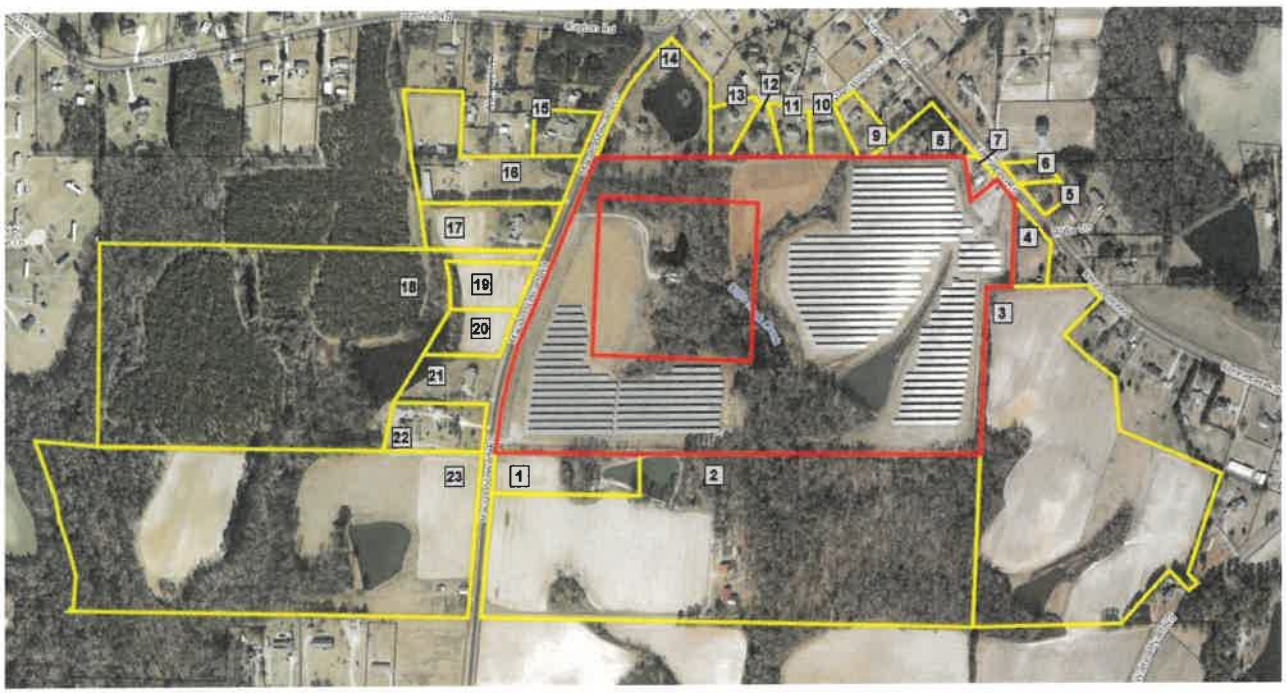
Real Estate Tax Information: Solar farms in North Carolina are assessed as personal property, separate from the land assessment. After the solar farm was placed into service, there was an increase of 180 percent in total assessed value, and 203 percent increase in total taxes paid.

PIN	Acres	2013 Taxes Paid (Per Acre)	2016 Taxes Paid (Per Acre)	Tax Increase	2013 Assessed Value (Per Acre)	2016 Assessed Value (Per Acre)	Value Increase
Wake County, NC							
675874971 (Post 2015 Split)	49.60	$ 119.52	$ 105.33		$ 18,589	$ 15,123	
Personal Property Tax		$ -	$ 256.81		$ -	$ 36,871	
TOTAL	**49.60**	**$ 119.52**	**$ 362.14**	**203%**	**$ 18,588.83**	**$ 51,994.82**	**180%**

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The map below displays the properties adjoining the solar arrays and are numbered for subsequent analysis (outlined in yellow).



Sunfish Farm Solar - Adjoining Properties

PAIRED SALES ANALYSIS

We have considered only one type of paired sales analysis, comparing sales of properties not proximate to the solar farm (Control Area Sales) to the sales of adjoining properties (Test Area Sales) after the completion of the solar farm project. We were able to identify two Adjoining Properties to the Sunfish Farm solar facility that sold after the solar installation was placed into service (Adjoining Properties 10 and 15). These sales were analyzed in separate Test Area Sale groups based on home type (conventional single-family home and manufactured single-family home) and sale dates.

We collected Control Area Sale data from the Wake County Real Estate database which summarizes data directly from the Real Estate Assessor website for the county. We have also reviewed other public records and verified marketing information through online sources such as Zillow.com, Redfin.com, Realtor.com and Estately.com. We have verified these sales through county records, conversations with brokers, and the County Assessor's Office. We excluded sales that were not arm's length, such as REO sales or bank-owned properties, or those between related parties.

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GROUP 1

Adjoining Property 10 (Test Area Sale 1) was considered for a paired sales analysis, and we analyzed this property as a single-family home use. The property is a single-story 1,470 square foot home located on a 0.79-acre lot that sold in September 2017. This property line is approximately 50 feet from the closest solar panel, and the improvements are approximately 200 feet from the closest solar panel. The following table outlines the other important characteristics of Adjoining Property 10.

SUNFISH FARM SOLAR TEST AREA SALE GROUP 1										
Property #	Address	Sale Price	Site Size (AC)	Beds	Baths	Year Built	Home Size (SF)	Improvements	Sale Price/SF	Sale Date
Test Sale 1 Adjoining Property 10	7513 Glen Willow Court	$188,000	0.79	3	2	1989	1,470	One-Story, No Basement	$127.89	Sep-17

We have identified 14 single-family home sales in the Control Area Sale group that are located within Wake County, either in Middle Creek Township or Panther Branch Township. They were built generally from 1989 to 1999 and are each similar in square footage and layout, as well as quality of construction, to the Test Area Sale and they sold within a reasonable time frame from the sale date of the Test Area Sale.



Sunfish Farm Solar - Group 1: Test Area Sale Map

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It is informative to note that the marketing time (from list date to closing date) for Control Area Sales ranged from 30 to 127 days on market, and the marketing time for Adjoining Property 10 was 98 days, which is within the range of the Control Area Sales. This is an indication that the marketability of the Test Area Sale was not negatively influenced by proximity to the solar farm.

We adjusted the Control Area Sales for market conditions using the compounded monthly growth rate exhibited in the FHFA House Price Index, for the period from December 2015 to the end of December 2018 (36 months).

When adjusting sales prices for market conditions (time between date of Test Area Sale and Control Area Sales date) throughout this analysis we have used regression analysis to identify the appropriate monthly market conditions adjustment. We utilized the Federal Housing Finance Agency House Price Index (FHFA HPI) for the 27592 zip code to determine the average monthly rate of appreciation. The FHFA HPI is a broad measure of the movement of single-family house prices. The FHFA HPI is a weighted, repeat-sales index, meaning that it measures average price changes in repeat sales or re-financings on the same properties. The FHFA HPI serves as a timely, accurate indicator of house price trends at various geographic levels.[22]

The results of the paired sales analysis for Adjoining Property 10 are presented below.

CohnReznick Paired Sales Analysis Sunfish Farm Solar GROUP 1 - Adjoining Property 10		
No. of Sales	**Potentially Impacted by Solar Farm**	**Adjusted Median Price Per SF**
Test Area Sale (1)	Yes: Adjoining solar farm	$127.89
Control Area Sales (14)	No: Not adjoining solar farm	$124.86
Difference between Unit Price of Test Area Sale and Adjusted Median Unit Price of Control Area Sales		**2.43%**

The difference between the unit price of the Test Area Sale and the Adjusted Median Unit Price of the Control Area Sales is considered within the range for a typical market area.

Noting no negative price differential, it does not appear that the Sunfish Farm solar installation impacted the sale price of the Test Area Sale, Adjoining Property 10.

[22] https://www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index.aspx

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GROUP 2

Adjoining Property 15 (Test Area Sale) was considered for a paired sales analysis, and we analyzed this property as a manufactuerd single-family home use, with 1,860 square feet of improvements, on a parcel of 1.24-acres, that sold in October 2019. The property line for this property is approximately 665 feet from the closest solar panel, and the improvements are approximately 760 feet from the closest solar panel. The following table outlines the other important characteristics of Adjoining Property 15.

SUNFISH FARM SOLAR TEST AREA SALE GROUP 2										
Property #	Address	Sale Price	Site Size (AC)	Beds	Baths	Year Built	Home Size (SF)	Improvements	Sale Price/SF	Sale Date
Test Sale 1 Adjoining Property 15	7608 Maude Stewart Road	$125,000	1.24	2	2	1990	1,860	One-Story, Manufactured, No Basement	$67.20	Oct-19

In Group 2, we have studied only homes on lots between 0.50 and 1.60 acres and homes that are greater than 1,750 square feet, built between 1990 and 2003, so as to be comparable to the Test Area Sale home. The Control Area Sales sold within a reasonable time frame from the sale date of the Test Area Sale and are similar to the Test Area Sale in physical characteristics, that is they are one-story manufactured homes with no basements, that are located in Wake County, either in Middle Creek Township or Panther Branch Township.



Sunfish Farm Solar - Group 2: Test Area Sale Map

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We analyzed the eight Control Area Sales and adjusted the Control Area Sales for market conditions using the compounded monthly growth rate exhibited in the FHFA House Price Index, for the period from December 2018 to December 2020 (24 months).

The results of the paired sales analysis for Adjoining Property 15 are presented below.

CohnReznick Paired Sales Analysis Sunfish Farm Solar GROUP 2 - Adjoining Property 15		
No. of Sales	**Potentially Impacted by Solar Farm**	**Adjusted Median Price Per SF**
Test Area Sale (1)	Yes: Adjoining solar farm	$67.20
Control Area Sales (8)	No: Not adjoining solar farm	$66.23
Difference between Unit Price of Test Area Sale and Adjusted Median Unit Price of Control Area Sales		**1.47%**

The unit sale price of the Test Area Sale was slightly higher than the median adjusted unit sale price of the Control Area Sales and is considered within the range for a typical market area.

Noting no negative price differential, it does not appear that the Sunfish Farm solar installation impacted the sale price of the Test Area Sale, Adjoining Property 15.

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SOLAR FARM 7: PORTAGE SOLAR FARM, PORTAGE, PORTER COUNTY, INDIANA

Coordinates: Latitude 41.333263, Longitude -87.093015

PIN: 64-06-19-176-001.000-015

Total Land Size: 56 AC

Date Project Announced: February 2012

Date Project Completed: September 2012

Output: 1.96 MW AC (1.5 MW DC)

The solar farm was developed by Ecos Energy, a subsidiary of Allco Renewable Energy Limited, and is currently owned by PLH, Inc. This solar panels are ground-mounted the facility has the capacity for 1.96 Megawatts (MW) AC of power, which is enough to power 300 homes. This solar farm consists of 7,128 solar modules which are of a fixed tilt installation and it contains three inverters.

The Surrounding Area: The Portage Solar Farm is located outside the City of Portage, in Portage Township, approximately 2.5 miles to the southeast of the city center. The solar farm is also approximately two miles northwest of South Haven, a neighboring residential community. Portage Township is in the northern portion of Porter County, which is in the northwestern corner of the state of Indiana. The solar farm is approximately 45 miles southeast of downtown Chicago.

The Immediate Area: This solar farm is located on the south side of Robbins Road, and is surrounded to the west, south, and east by agricultural land. Just beyond the agricultural land buffer, uses to the west and east area single family homes, and to the south is an apartment complex and a commercial development with an IMAX movie theater and restaurants. To the north of the solar farm, across Robbins Road uses consist of a residential subdivision and vacant land. The solar farm and surrounding properties have a Valparaiso mailing address.

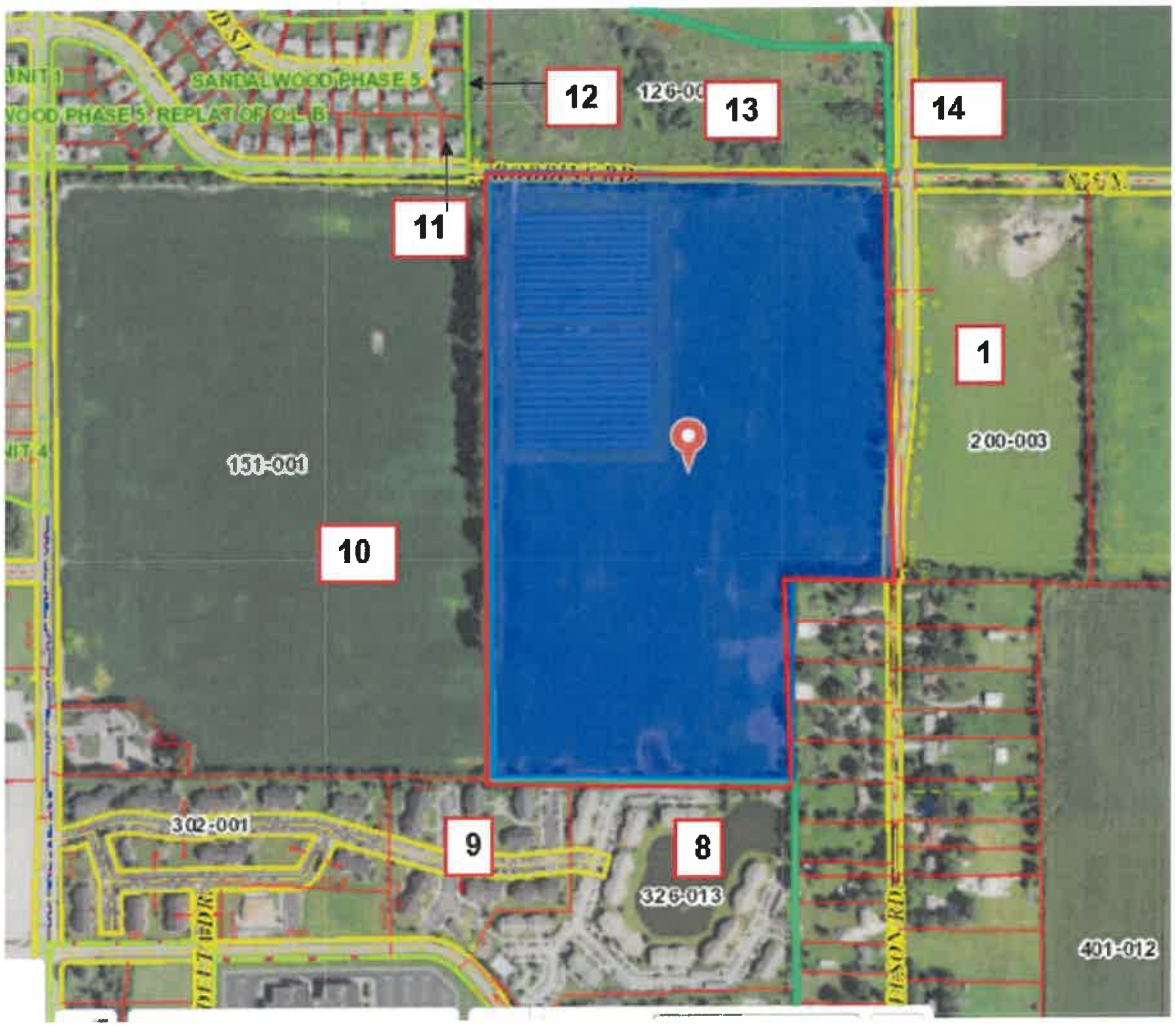
The solar farm is fenced from adjacent properties by a fence that surrounds all of the solar panels. Natural vegetation borders the northern, and eastern sides of the larger agricultural parcel the solar farm is nestled within.

Real Estate Tax Information: The taxes on the 56 acres of farmland were $1,400 per year prior to the solar farm development. After the solar farm was developed, only 13 acres (23 percent of the site) were re-assessed and the remaining 43 acres continued to be farmed. The total real estate tax bill increased to $16,350 after the solar farm was built, including both uses on the site. This indicates that the real estate taxes for the solar farm increased from $25 per acre to $1,175 per acre after the solar farm was developed.

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The map below displays the solar farm parcel shaded in blue, and the adjoining properties (outlined in red). Adjoining Properties to the solar farm are numbered for subsequent analysis.



Portage Solar Farm - Adjoining Properties

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Portage Solar Farm - Adjoining Properties

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PAIRED SALES ANALYSIS

Adjoining Properties 1 and 7 (Test Area Sales) were each considered for a paired sales analysis. Adjoining Property 1 was analyzed as homestead-small farmland tract since at the time of purchase the site was used only as agricultural land. The buyer bought it as vacant land and subsequently built a home on the site. Adjoining Property 7 was analyzed as a single-family home use.

GROUP 1

For Adjoining Property 1 (Group 1), the property line is approximtately 836 feet from the closest solar panel and the residential home that was eventually built is approximately 1,228 feet from the closest solar panel. The following table outlines the other important characteristics of Adjoining Property 10.

Portage Solar Test Area Sale Group 1								
Adj. Property #	Address	Sale Price	Site Size (AC)	PI Index (Corn)	Year Built	Vacant at the Time of Sale	Sale Price per Acre	Sale Date
1	442 W 875 N, Valparaiso	$149,600	18.70	139.30	2017 (After Purchase)	Yes	$8,000	Feb-14

In Group 1, we analyzed nine Control Area Sales of homesteads-small farmland tracts that sold within a reasonable time frame from the sale date of Adjoining Property 1. All Control Area Sales were adjusted for market conditions using regression analysis to identify the appropriate monthly market conditions adjustment.

The result of our analysis for Group 1 is presented below.

CohnReznick Paired Sale Analysis Portage Solar Group 1		
No. of Sales	Potentially Impacted by Solar Farm	Adjusted Median Price Per Acre
Test Area Sales (1)	Adjoining solar farm	$8,000
Control Area Sales (9)	No: Not adjoining solar farm	$7,674
Difference between Unit Price of Test Area Sale and Adjusted Median Unit Price of Control Area Sales		4.25%

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GROUP 2

For Adjoining Property 7 (Group 2), the residential home is approximately 1,227 feet from the closest solar panel. The following table outlines the other important characteristics of Adjoining Property 7.

Portage Solar Test Area Sale Group 2									
Adj. Property #	Address	Sale Price	Site Size (AC)	Beds	Baths	Year Built	Square Feet	Sale Price per SF	Sale Date
7	836 N 450 W Valparaiso	$149,800	1.00	3.0	1.5	1964	1,776	$84.35	Sep-13

For Adjoining Property 7, we analyzed seven Control Area Sales of similar single family homes that sold within a reasonable time frame from the sale date of Adjoining Property 7. All Control Area Sales were adjusted for market conditions using regression analysis to identify the appropriate monthly market conditions adjustment.



Portage Solar - Group 2: Test Area Sale Map

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The result of our analysis for Group 2 is presented below.

CohnReznick Paired Sale Analysis Portage Solar Group 2		
No. of Sales	**Potentially Impacted by Solar Farm**	**Adjusted Median Price Per SF**
Test Area Sales (1)	Adjoining solar farm	$84.35
Control Area Sales (7)	No: Not adjoining solar farm	$84.27
Difference between Unit Price of Test Area Sale and Adjusted Median Unit Price of Control Area Sales		**0.10%**

Noting the relatively small price differentials between Test Area Sales and Control Area Sales, with both Test Area Sales (Adjoining Property 1 and 7) having higher unit sale prices than the respective Control Area Sales, it does not appear that the Portage Solar Farm had any negative impact on adjacent property values.

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SOLAR FARM 8: IMPA FRANKTON SOLAR FARM, FRANKTON, INDIANA

Location: Frankton, Madison County, Indiana

Coordinates: Latitude 40.125701; Longitude -85.4626.88

PIN: 48-08-06-500-012.001-020

Total Land Size: 13 acres

Date Project Announced: November 2013

Date Project Completed: June 2014

Output: 1.0 MW AC (1.426 MW DC)

IMPA Frankton Solar Farm is located on the west side of South Lafayette Street, in the Town of Frankton. The solar farm was built in 2014 in joint effort by Inovateus Solar and Indiana Municipal Power Agency (IMPA). This solar farm has the capacity for 1 MW AC and its expected annual output is 1,426 MWh (megawatt hours). The solar farm is separated off from the adjacent properties by a 6 foot fence that surrounds the entirety of the solar panels. From our inspection of the site, we noted that the driveway to access the panels slopes downward and allows some views of the site.

The Surrounding Area: The IMPA Frankton solar farm is located in Lafayette Township, in the central portion of Madison County, Indiana. The solar farm is approximately 50 miles northeast of the center of Indianapolis and 65 miles northeast of the Indianapolis International Airport.

The Immediate Area: The solar installation is relatively centrally located in an undeveloped pocket of the town of Frankton, on the western side of South Lafayette Street. Adjoining parcels to the west include park land featuring baseball fields. Land further to the west is agricultural in nature, actively farmed primarily with row crops. Adjoining parcels to the north are residential with large estate homes. Adjoining the solar farm to the southeast is a single-family home identified in our analysis as Adjoining Property 7, and a baseball field. More farmland is directly south of the solar site. The solar site is adjoining a number of homes located east of the panels, along Lafayette Street. Mature trees at the rear of residential properties act as vegetative buffers.

Across Lafayette Street, to the east, are single-family residential homes forming the southeast quadrant of homes in Frankton.

All of the adjacent land parcels to the solar farm are used for agricultural, residential, or recreational purposes.

The solar farm is surrounded by a chain link fence that contains all the solar panels. Additionally, vegetative buffers along sides facing residential properties were planted as part of the solar farm development.

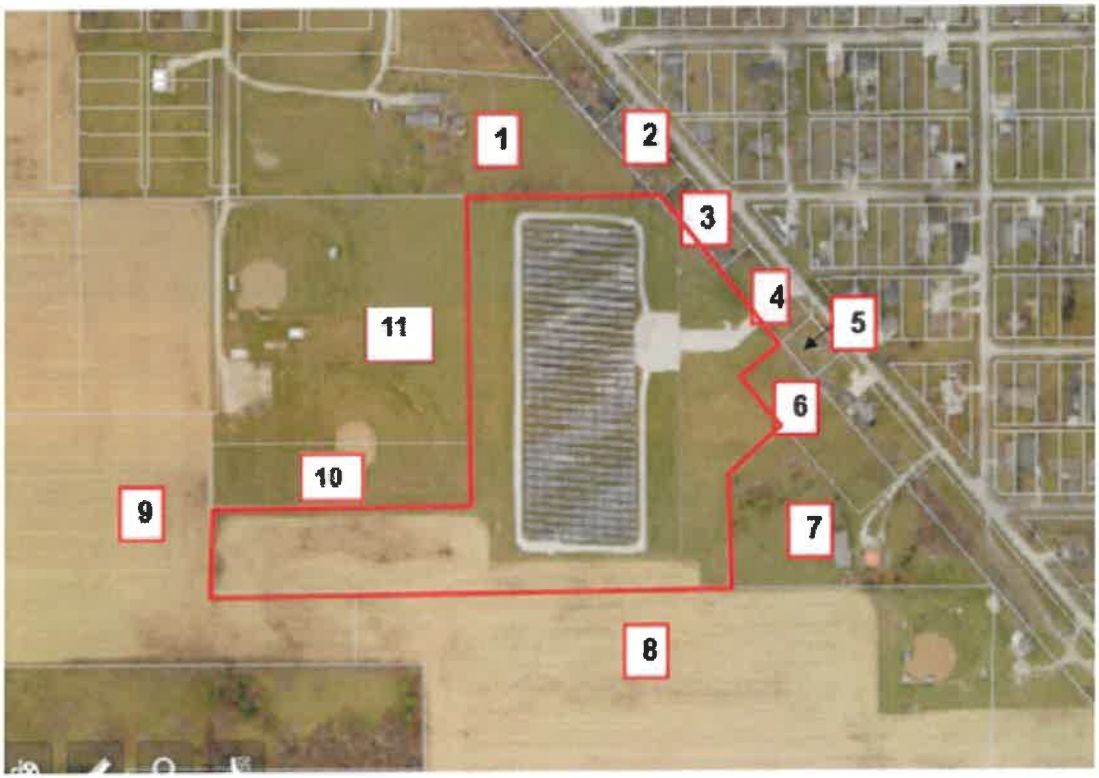
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Real Estate Tax Information: Prior to development of the solar farm in 2014, the original owner held one parcel of 15.667 acres with a home, pole barn and a utility shed, and no personal property was assessed on this parcel. In 2014 the parcel was split into two parcels and 13 acres was sold to IMPA for development of the solar farm. The owner of the parent parcel of 15.667 acres paid real estate taxes of $1,799 annually, prior to the split. After development of the solar farm, real estate taxes for both parcels, plus personal property tax revenue generated from the solar parcel, caused an increase $8,275, or a 360 percent increase in tax revenue for the entire site.

PIN	Acres	2013 Taxes Paid	2017 Taxes Paid	Tax Increase	2013 Assessed Value	2017 Assessed Value	Value Increase
Madison County, IN							
48-08-06-500-012.000-020 (parent)	15.667 (2013)	$ 1,799	$ 1,402		$ 138,700	$ 127,000	
Personal Property		$ -	$ -		$ -	$ -	
48-08-06-500-012.001-020 (2014 solar parcel split)	13.00 (2017)	$ -	$ 4,063		$ -	$ 137,400	
Personal Property		$ -	$ 2,810		$ -	$ 440,380	
TOTAL	**0.00**	**$ 1,799**	**$ 8,275**	**360%**	**$ 138,700**	**$ 704,780**	**408%**

The map below displays the solar farm parcel (outlined in red). Properties adjoining this parcel are numbered for subsequent analysis.



IMPA Frankton Solar Farm - Adjoining Properties

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PAIRED SALES ANALYSIS

We have performed a paired sales analysis with regards to the IMPA Frankton solar farm. The analysis compares sales of Adjoining Properties to the solar farm after the completion of the solar farm site (Test Area Sales) to similar properties not proximate to the solar farm (Control Area Sales). We utilized this type of paired sale analysis for both groups of Adjoining Properties under study.

GROUP 1

In Group 1, we identified and analyzed six Control Area Sales that were comparable to the Test Area Sale in location, size, and use that were not located in close proximity to the solar farm. We excluded sales that were bank-owned, or otherwise non arms'-length transactions. Adjoining Property 2 was manufactured single-family home use.

IMPA Frankton Solar Farm Test Area Sales Group 1									
Adj. Property #	Address	Sale Price	Site Size (AC)	Beds	Baths	Year Built	Home Size (SF)	Sale Date	Price PSF
2	607 S. Lafayette St Frankton, IN	$41,900	0.37	2	2	1991	1,466	Jun-15	$28.58

We identified six Control Area Sales that are included in this analysis that sold within a reasonable time frame from the sale date of the Test Area Sale (Adjoining Property 2) and are similar to the Test Area Sale in physical characteristics.

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IMPA Frankton Solar Farm – Group 1: Test Area Sale Map

Control Area Sales in Group 1 were adjusted for market conditions using a regression analysis to identify the appropriate monthly market condition adjustment. The results of our study are presented below.

CohnReznick Paired Sale Analysis IMPA Frankton Solar Farm Group 1		
No. of Sales	**Potentially Impacted by Solar Farm**	**Adjusted Median Price per SF**
Test Area Sale (1)	Adjoining Solar Farm	$28.58
Control Area Sales (6)	No: Not adjoining solar farm	$28.42
Difference between Unit Price of Test Area Sales and Adjusted Median Unit Price of Control Area Sales		**0.56%**

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GROUP 2

In Group 2, we identified and analyzed five Control Area Sales that were comparable to the Test Area Sale (Adjoining Property 7) in location, size, and use that were not located in close proximity to the solar farm. We excluded sales that were bank-owned, or otherwise non arms'-length transactions. Adjoining Property 7 was analyzed as a single-family home use.

IMPA Frankton Solar Farm Test Area Sales Group 2									
Adj. Property #	Address	Sale Price	Site Size (AC)	Beds	Baths	Year Built	Home Size (SF)	Sale Date	Price PSF
7	713 S. Lafeyette St Frankton, IN	$131,000	3.04	4	2	2003	2,500	Oct-16	$52.40

We identified five Control Area Sales that are included in this analysis that sold within a reasonable time frame from the sale date of the Test Area Sale and are similar to the Test Area Sale in physical characteristics.



IMPA Frankton Solar Farm – Group 2: Test Area Sale Map

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Control Area Sales in Group 2 were adjusted for market conditions using a regression analysis to identify the appropriate monthly market condition adjustment. The results of our study are presented below.

CohnReznick Paired Sale Analysis IMPA Frankton Solar Farm Group 2		
No. of Sales	**Potentially Impacted by Solar Farm**	**Adjusted Median Price per SF**
Test Area Sale (1)	Adjoining Solar Farm	$52.40
Control Area Sales (5)	No: Not adjoining solar farm	$51.47
Difference between Unit Price of Test Area Sales and Adjusted Median Unit Price of Control Area Sales		**1.81%**

Noting the relatively small price differential, in which the Test Area Sales were higher than the median for the Control Areas Sales, in both Groups 1 and 2, it does not appear that the IMPA Frankton solar farm had any negative impact on adjoining property values.

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SOLAR FARM 9: JEFFERSON COUNTY COMMUNITY SOLAR GARDEN, JEFFERSON COUNTY, COLORADO

Coordinates: Latitude 39.859564, Longitude -105.1497

PIN: 29-194-01-037

Total Land Size: 13.63 acres

Date Project Announced: November 2013

Date Project Completed: May 2016

Output: 1.2 MW AC

The Jefferson County Community Solar Garden is adjacent to the Whisper Creek residential subdivision, just outside the City of Arvada, and was developed by SunShare Management. This solar farm has the capacity for 1.2 Megawatts (AC) of power, which is enough to power 300 homes. After two months of operation, the solar farm was 100 percent subscribed and its three largest customers are the cities of Arvada and Northglenn, as well as the Green Mountain Water and Sanitation District.

The Surrounding Area: The Whisper Creek subdivision is located between the Welton Reservoir to the west and Standley Lake to the east. To the northwest of the subdivision lies the Colorado Hills Open Space and the Rocky Flats national Wildlife Refuge. The subdivision is primarily in the City of Arvada city limits, but the municipal boundary splits the street the Test Area Sales are located on, West 89th Loop, some are in Arvada and some are in unincorporated Jefferson County. Arvada is a northwestern suburb of the City of Denver and is accessible via Interstate-25 and Interstate-70 and Interstate-76.

The Immediate Area: The immediate area has uses that consist of vacant land to the north and east, a horse and alpaca farm to the south, known as Evening Star Farms, and single-family homes and a municipal police station and vacant land to the west.

Real Estate Tax Information: In 2017, real estate taxes totaled $79.10 for the entire parcel for the year, which is slightly less than taxes billed in 2016 and 2015.

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PAIRED SALES ANALYSIS

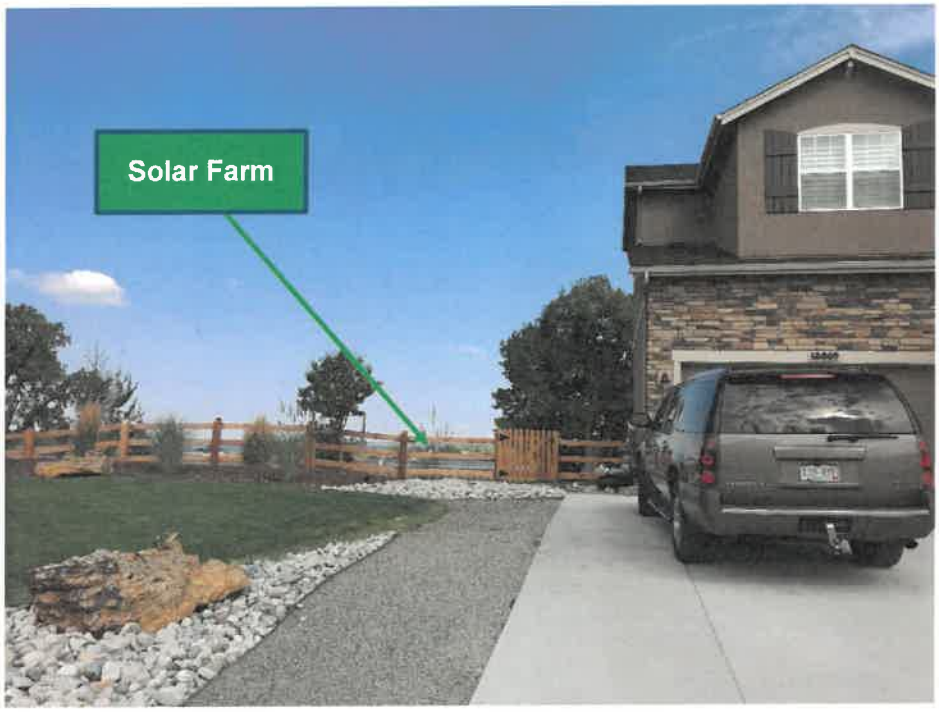
We found three Adjoining Properties that qualified for a paired sales analysis. The map below displays the solar farm parcel (outlined in yellow) and the Adjoining Properties (outlined in red) are numbered for subsequent analysis



Jefferson County Community Solar Garden - Adjoining Properties
(Q2 2016 imagery date)
(Green Arrow – Direction of Photos on Following Page)

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View from 89th Loop towards Solar Farm at rear of home



View from the rear of a Test Area Sale, towards Solar Farm

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Adjoining Properties 9, 10, and 13 (Test Area Sales 1, 2, and 3, respectively), were considered for a paired sales analysis. The Test Area Sales are two-story, single-family residential homes with four bedrooms and three and a half bathrooms, between 3,000 and 4,000 square feet of gross living area, on less than 0.30 acre of land, and each sold in 2016 as new construction homes.

Jefferson County Community Solar Garden Test Area Sales									
Adj. Property #	Address	Median Sale Price	Median Site Size (AC)	Median Beds	Median Baths	Median Year Built	Median Square Feet	Median Sale Date	Median Price PSF
9, 10, 13	13929 W 89TH LOOP, 13919 W 89TH LOOP, 13889 W 89TH LOOP	$635,500	0.23	4	3.5	2016	3,848	Jun-16	$165.15

The Test Area Sales are located between 595 feet and 720 feet from the house to the solar panels. We analyzed six Control Area Sales of single-family homes that are included in this analysis that sold within a reasonable time frame from the median sale date of the Test Area Sales and are similar to the Test Area Sales in physical characteristics. The Control Area Sales are removed from the solar panels in other areas of the Whisper Creek subdivision.



Jefferson County Community Solar Garden – Test Area Sales Map

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All Control Area Sales were adjusted for market conditions using regression analysis to identify the appropriate monthly market conditions adjustment.

The results of our analyses for the Jefferson County Community Solar Garden are presented below.

CohnReznick Paired Sale Analysis Jefferson County Community Solar Garden		
No. of Sales	**Potentially Impacted by Solar Farm**	**Adjusted Median Price Per SF**
Test Area Sales (3)	Adjoining solar farm	$165.15
Control Area Sales (6)	No: Not Adjoining solar farm	$164.36
Difference between Unit Price of Test Area Sales and Adjusted Median Unit Price of Control Area Sales		**0.48%**

Noting no negative price differential, it does not appear that the Jefferson County Community Solar Garden had any negative impact on adjacent property values.

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SOLAR FARM 10: VALPARAISO SOLAR, VALPARAISO, PORTER COUNTY, INDIANA

Coordinates: Latitude 41.301180, Longitude –87.094055

PINs: 64-09-07-152-001.000-019 and 64-09-07-152-002.000-019

Total Land Size: 27.9 Acres

Date Project Announced: March 2012

Date Project Completed: December 20, 2012

Output: 1 MW AC (1.3 MW DC)

The Valparaiso solar farm was developed by Sustainable Power Group, LLC and became operational in December 2012. The solar facility has ground mounted capacity for 1.0 Megawatts (MW) AC of power. The panels are mounted in a fixed tilt fashion and there are two inverters in this solar farm.

The Surrounding Area: The Valparaiso solar farm is located in Union Township, in the northwest portion of Porter County, Indiana. Porter County is located in the very northwest corner of the state of Indiana. The solar farm is approximately 10 miles northwest of the Porter County Regional Airport and approximately six and a half miles northwest of the center of the city of Valparaiso.

The Immediate Area: This solar farm is located on the southern side of Indiana Route 130 (Railroad Avenue) in Valparaiso, Porter County, Indiana and is located approximately 35 miles southwest of downtown Chicago.

Adjoining parcels to the solar farm to the east and south are residential homes and to the west and north are agricultural in nature.

The solar farm is lined by a chain link fence that surrounds all of the solar panels. Additionally, there are bushes and trees to the north and west of the solar panels; this vegetation has been in place since before development of the solar farm. Other small trees were planted and spaced out around the perimeter of the solar farm after development. From our inspection, the solar panels cannot be seen from Indiana State Route 130 from the north, nor on N 475 W Road to the east as this is a raised roadway. The adjacent properties to the east of the solar panels have full view of the panels from the backyards of the homes.

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Real Estate Tax Information: Prior to development of the solar farm, in 2011, the original parent parcel contained a home, a homesite, excess land, and agricultural land. In 2012, Valparaiso Solar, LLC bought the entire property to develop the solar farm on. Subsequently when Valparaiso Solar, LLC sold the project to PLH, LLC, they split the parcels so that the home and homesite were one parcel of 3.25 acres and the remaining 24.65 acres were the solar panel site. After development of the solar farm development, in 2015, total real estate taxes for both parcels had increased to approximately $2,587, a 25 percent increase in tax revenue for the site.

PIN	Acres	2011 Taxes Paid	2015 Taxes Paid	Tax Increase	2011 Assessed Value	2015 Assessed Value	Value Increase
Porter County, IN							
64-09-07-151-001.000-019 (parent parcel)		$ 2,072			$ 203,800		
64-09-07-152-001.000-019 (split parcel)	24.65		$ 2,587			$ 156,800	
64-09-07-152-002.000-019 (split parcel)	3.25		$ 1,741			$ 187,900	
TOTAL	**27.90**	**$ 2,072**	**$ 2,587**	**25%**	**$ 203,800**	**$ 344,700**	**69%**

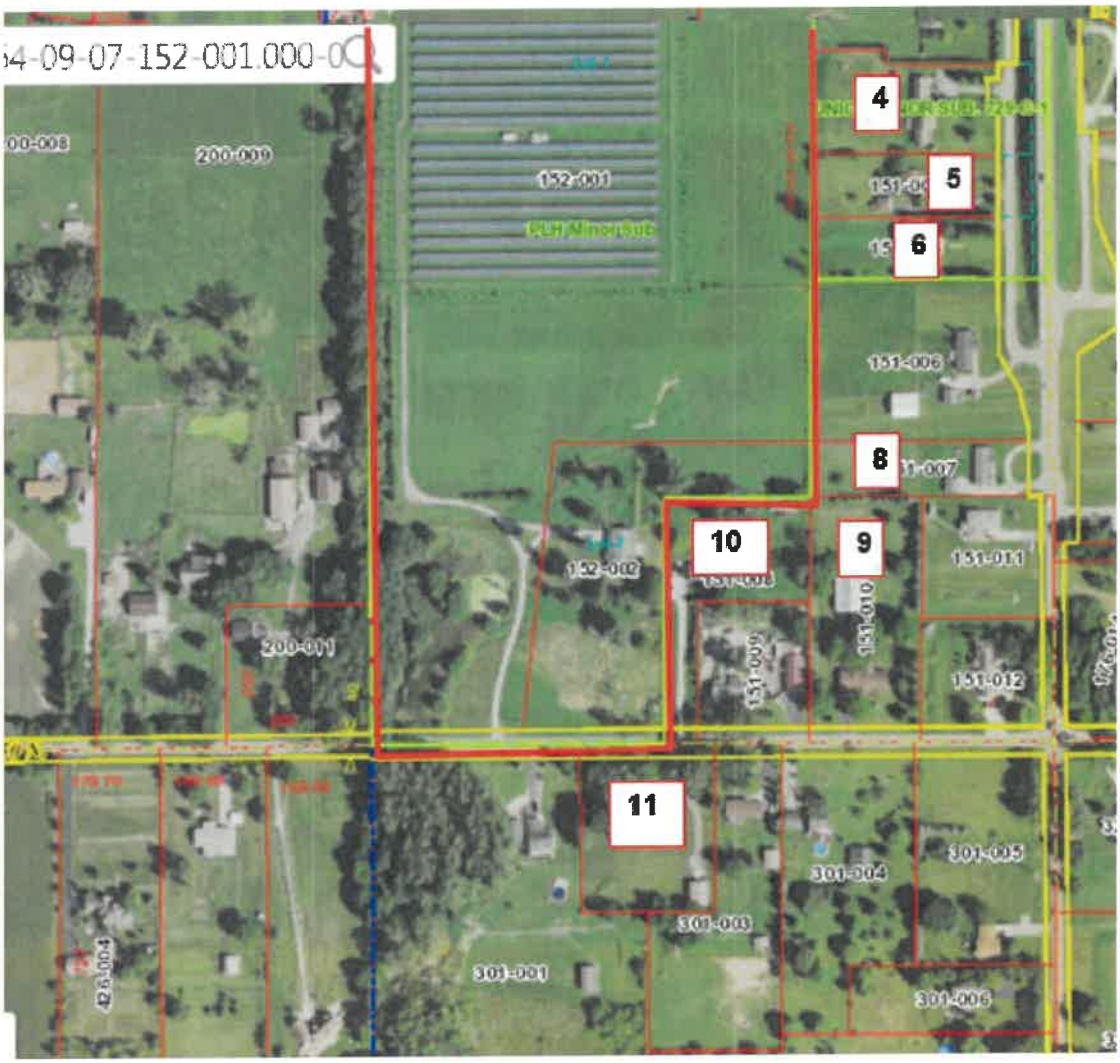
The maps below and on the following page display the solar farm parcels (outlined in red). Properties adjoining this parcel are numbered for subsequent analysis.



Valparaiso Solar Farm - Adjoining Properties

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Valparaiso Solar Farm - Adjoining Properties

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PAIRED SALES ANALYSIS

Adjoining Properties 10 and 14 (Test Area Sales) were each considered for a paired sales analysis. Both were analyzed as single-family home uses.

GROUP 1

For Adjoining Property 10 (Group 1), the residential home is approximately 514 feet from the closest solar panel. The following table outlines the other important characteristics of Adjoining Property 10.

Valparaiso Solar Test Area Sale Group 1									
Adj. Property #	Address	Sale Price	Site Size (AC)	Beds	Baths	Year Built	Square Feet	Price PSF	Sale Date
10	489 W 450 N, Valparaiso, IN	$105,000	1.45	3	2	1993	1,274	$ 82.42	Jul-15

We analyzed five Control Area Sales that sold within a reasonable time frame from the sale date of Adjoining Property 10. All Control Area Sales were adjusted for market conditions using regression analysis to identify the appropriate monthly market conditions adjustment.

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Valparaiso Solar - Group 1: Test Area Sale Map

The result of our analyses for Group 1 is presented below.

CohnReznick Paired Sale Analysis Valparaiso Solar Group 1		
No. of Sales	**Potentially Impacted by Solar Farm**	**Adjusted Median Price Per SF**
Test Area Sales (1)	Adjoining solar farm	$82.42
Control Area Sales (5)	No: Not adjoining solar farm	$79.95
Difference between Unit Price of Test Area Sale and Adjusted Median Unit Price of Control Area Sales		**3.09%**

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TECHNIQUE 3: MARKET COMMENTARY

Additionally, we have contacted market participants such as appraisers, brokers, and developers familiar with property values around solar farms. Commentary from our conversations with these market participants is recorded below.

In Otter Creek Township, in LaSalle County, Illinois, we spoke with Viki Crouch, the Township Assessor, who she said that *there has been no impact on property values due to their proximity to the* ***Grand Ridge Solar Farm***.

We spoke with Ken Crowley, Rockford Township Assessor in Winnebago County, Illinois, who stated that he has seen *no impact on property values in his township as an effect of proximity to the* ***Rockford Solar Farm***.

We spoke with James Weisiger, the Champaign Township Assessor in Champaign County, where the **University of Illinois Solar Farm** is located, and he noted that no one has petitioned to have their property assessments lowered and *there appears to have been no impact on property values as a result of proximity to the solar farm*.

We spoke with Ken Surface, a Senior Vice President of Nexus Group. Nexus Group is a large valuation group in Indiana and has been hired by 20 counties in Indiana regarding property assessments. Mr. Surface is familiar with the solar farm sites in Harrison County (Lanesville Solar Farm) and Monroe County (Ellettsville Solar Farm) and stated he has noticed *no impact on property values from proximity to these sites*.

We interviewed Missy Tetrick, a Commercial Valuation Analyst for the Marion County Indiana Assessor. She mentioned the Indy Solar III sites and stated that she saw *no impact on land or property prices from proximity to this solar farm*.

We spoke with Dorene Greiwe, Decatur County Indiana Assessor, and she stated that solar farms have only been in the county a couple of years, but she has seen *no impact on land or property prices due to proximity to this solar farm*.

Connie Gardner, First Deputy Assessor for Madison County Indiana, stated that there are three solar farms in her county, and she has seen *no impact on land or property prices due to proximity to these solar farms*.

We spoke with Tara Shaver, Director of Administration for Marion County, Indiana Assessor/Certified Assessor, and she stated that she has seen *no impact on land or property prices due to proximity to solar farms*.

Candace Rindahl of ReMax Results, a real estate broker with 16 years of experience in the North Branch, Minnesota area, said that she has been in most of the homes surrounding the North Star Solar Farm and personally sold two of them. She reported that the neighboring homes sold at market rates comparable to other homes in the area not influenced by the solar farm, and they sold within 45 days of offering, at the end of 2017, *which was in line with the market.*

Dan Squires, Chisago County Tax Assessor (Minnesota), confirmed that the Chisago County Assessor's Office completed their own study on property values adjacent to and in close vicinity to the solar farm from January

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2016 to October 2017. From the study, the assessor determined the residential homes adjacent to the North Star Solar Farm (Minnesota) *were in-line with the market and were appreciating at the same rate as the market.*[23]

Renee Davis, Tax Administrator for Bladen County, North Carolina, stated that she *has not seen any effect on property values due to proximity to a solar farm.*

We spoke with Jim Brown, an appraiser for Scotland County, North Carolina, who stated that he *has seen no effect on property values due to proximity to a solar farm.*

We spoke with Gary Rose, a tax assessor for Duplin County, North Carolina, who stated that *he has seen no effect on property values in regards to proximity to a solar farm.*

Kathy Renn, a property Valuation Manager for Vance County, North Carolina, stated that she has *not noticed any effect on property values due to proximity to a solar farm.*

Larry Newton, a Tax Assessor for Anson County, North Carolina, stated that there are six solar farms in the county ranging from 20 to 40 acres and he *has not seen any evidence that solar farms have had any effect on property values due to proximity to a solar farm.*

We spoke with Patrice Stewart, a Tax Administrator for Pasquotank County, North Carolina, and she has seen *no effect on land or residential property values due to proximity to the solar farms in Pasquotank County.*

We spoke with the selling broker of the Adjoining Property for Elm City Solar, in North Carolina, Selby Brewer, who said the solar farm *did not impact the buyer's motivation.*

We spoke with Amy Carr, Commissioner of Revenue in Southampton County, Virginia, who stated that most of the solar farms are in rural areas, but she *has not seen any effect or made any adjustments on property values.* They have evaluated the solar farmland considering a more intense use, which increased the assessed value.

The Interim Assessor for the town of Whitestown in Oneida County, New York, Frank Donato, stated that he *has seen no impact on property values of properties nearby solar farms.*

Steve Lehr at the Department of Assessment for Tompkins County, New York, mentioned that the appraisal staff *has made no adjustments regarding assessed values of properties surrounding solar farms. Marketing times for properties have also stayed consistent.* Lehr noted that a few of the solar farms in Thompkins County are on land owned by colleges and universities and a few are in rural areas.

At this point in time, Al Fiorille, Senior Valuation Specialist in the Tompkins County Assessment department in New York, reported that he *cannot measure any negativity from the solar farms and arrays that have been installed within the county.*

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[23] Chisago County Press: County Board Real Estate Update Shows No "Solar Effects" (11/03/2017)

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In the Assessor's office in the town of Seneca, Ontario County, New York, Shana Jo Hamilton stated that she *has seen no impact on property values of properties adjacent to solar farms*.

Michael Zazzara, Assessor of the City of Rochester in Monroe County, New York commented that the City has a couple of solar farms, and they *have seen no impact on nearby property values and have received no complaints from property owners.*

While there are one or two homes nearby to existing solar farms in the town of Lisbon in St. Lawrence County, New York, Assessor Stephen Teele *has not seen any impact on property values in his town.* The solar farms in the area are in rural or agricultural areas in and around Lisbon.

The Assessor for the Village of Whitehall in Washington County, New York, Bruce Caza, noted that there are solar farms located in both rural and residential areas in the village and *he has seen no impact on adjacent properties, including any concerns related to glare form solar panels.*

Laurie Lambertson, the Town Assessor for Bethlehem, in Albany County, New York noted that the solar farms in her area are tucked away in rural or industrial areas. *Lambertson has seen no impact on property values in properties adjacent to solar farms.*

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SOLAR FARM FACTORS ON HARMONY OF USE

Zoning changes and conditional use permits often require that the proposed use is compatible with surrounding uses.

The following section analyzes specific physical characteristics of solar farms and is based on research and CohnReznick's personal solar farm site visits and indicate that solar farms are generally harmonious with surrounding property and compliant with most zoning standards.

Appearance: Most solar panels have a similar appearance to a greenhouse or single-story residence can range from 8 to 20 feet but are usually not more than 15 feet high. As previously mentioned, developers generally surround a solar farm with a fence and often leave existing perimeter foliage, which minimizes the visibility of the solar farm. The physical characteristics of solar farms are compatible with adjoining agricultural and residential uses.

Sound: Solar panels in general are effectively silent and sound levels are minimal, like ambient sound. There are limited sound-emitting pieces of equipment on-site, which only produce a quiet hum (e.g., inverters). However, these sources are not typically heard outside the solar farm perimeter fence.

Odor: Solar panels do not produce any byproduct or odor.

Greenhouse Gas (GHG) Emissions: Much of the GHG produced in the United States is linked to the combustion of fossil fuels, such as coal, natural gas, and petroleum, for energy use. Generating renewable energy from operating solar panels for energy use does not have significant GHG emissions, promoting cleaner air and reducing carbon dioxide (CO_2) emissions to fight climate change.

Traffic: The solar farm requires minimal daily onsite monitoring by operational employees and thus minimal operational traffic.

Hazardous Material: Modern solar panel arrays are constructed to U.S. government standards. Testing shows that modern solar modules are both safe to dispose of in landfills and are also safe in worst case conditions of abandonment or damage in a disaster.[24] Reuse or recycling of materials would be prioritized over disposal. Recycling is an area of significant focus in the solar industry, and programs for both batteries and solar panels are advancing every year. While the exact method of recycling may not be known yet as it is dependent on specific design and manufacturer protocol, the equipment is designed with recyclability of its components in mind, and it is likely that solar panel and battery energy storage recycling and reuse programs will only improve in 25 years' time.

Examples of homes built adjoining to solar farms are presented on the following pages.

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[24] Virginia Solar Initiative - Weldon Cooper Center for Public Service – University of Virginia (https://solar.coopercenter.org/taxonomy/term/5311)

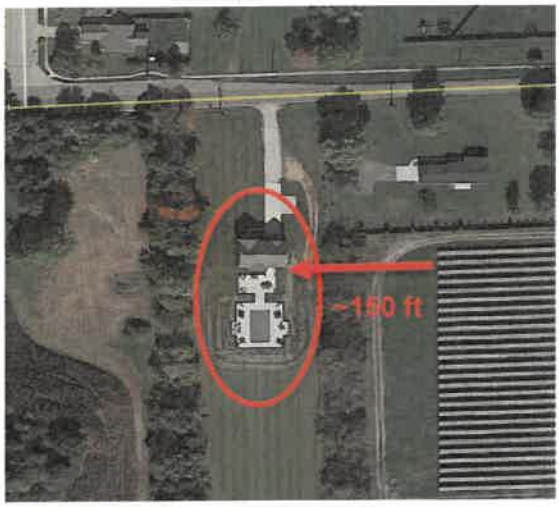
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For the Dominion Indy III solar farm, the adjacent land to the west was acquired and subsequently developed with a large estate home – after the solar panels had been in operation for years.



Dominion Indy III Solar Farm
September 2014



Dominion Indy III Solar Farm
October 2016



Estate home adjacent to Dominion Indy III Solar Farm

In ground pool and attached garage (home cost estimated at $450,000 - October 2015)

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Innovative Solar 42 (2017)
Cumberland County, NC



Innovative Solar 42 (2019)
Cumberland County, NC

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Developer Built Home
Sold 6/18/19 for $265,900 ($110.75/sf)
Cumberland County, NC (adjacent to Innovative 42 solar farm)

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Portage Solar Farm located in Indiana



A new 175-home subdivision is currently under construction adjacent the 1.5 MW Portage Solar Farm in Porter County, Indiana. The solar facility was completed in November 2011, and Lennar began construction on the Brookside Subdivision in 2022, with the first homes selling in March 2023. The subdivision is 100 feet from the panels. As of August 2023, there have been 11 closed sales, ranging from $349,000 to $419,990, or $152.41 to $203.64 PSF, with a median of $369,990, with a median of $166.43 PSF. There are 12 pending sales and nine active listings, ranging from $374,990 to $436,840.

On the next page, we show the same Portage Solar Farm and a newly constructed home to the east of the solar facility, completed in 2016.

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Portage Solar Farm, IN
October 2015



Portage Solar Farm, IN
October 2016



4,255 square foot estate home under construction, adjacent to Portage Solar Farm located in Indiana

On-site pond and attached garage (cost estimated at $465,000) April 2018

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The Brighton PV Solar farm became operational in December 2012. Located in Adams County, north of Denver, CO, this solar farm has a capacity of 1.8 MW AC and is located on a triangular parcel of land east of an area of existing custom-built estate homes. A photo of one home (15880 Jackson Street) located directly north of the circled area below, is presented to the right.



In December 2012, the 2.55-acre lot circled in red below (15840 Jackson Street) was purchased for future development of a single-family home. This home was built in 2017, and per the county assessor, the two-story home is 3,725 square feet above ground with 4 bedrooms and 3.5 bathrooms. According to the building permit issued in August 2016, the construction cost was budgeted at $410,000.



Brighton PV Solar, Adams County, CO
June 2016



Brighton PV Solar, Adams County, CO
June 2017

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SUMMARY OF ADJOINING USES

The table below summarizes each Existing Solar Farm's adjoining uses.

Composition of Surrounding Uses (% of Surrounding Acreage)							
Solar Farm #	Solar Farm	Acreage % of Surrounding Agricultural Uses	Acreage % of Surrounding Residential Uses	Acreage % of Surrounding Industrial Uses	Acreage % of Surrounding Office Uses	Acreage % of Surrounding Other Uses	Avg. Distance from Panels to Improvements (Feet)
1	2662 Freeport Solar	96.30%	3.50%	0.00%	0.00%	0.00%	243
2	Grand Ridge	97.60%	1.40%	0.00%	0.00%	1.00%	553
3	DTE Lapeer	60.00%	35.00%	0.00%	0.00%	5.00%	260
4	Woodland Solar	25.00%	5.00%	10.00%	0.00%	60.00%	615
5	Dominion Indy Solar III	97.70%	2.30%	0.00%	0.00%	0.00%	474
6	Sunfish Farm	81.70%	18.30%	0.00%	0.00%	0.00%	380
7	Portage Solar	65.50%	34.50%	0.00%	0.00%	0.00%	991
8	IMPA Frankton	76.30%	5.70%	0.00%	0.00%	18.00%	236
9	Jefferson County Solar Garden	73.00%	10.00%	0.00%	0.00%	16.67%	730
10	Valparaiso Solar LLC	81.60%	18.40%	0.00%	0.00%	0.00%	659

Overall, the vast majority of the surrounding acreage for each comparable solar farm is made up of agricultural land, some of which have homesteads. There are also smaller single-family home sites that adjoin the solar farms analyzed in this report. Generally, these solar farms are sound comparables to Turning Point's proposed solar project in terms of adjoining uses, location, and size.

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SUMMARY AND FINAL CONCLUSIONS

The purpose of this property value impact report is to determine whether the presence of a solar farm has caused a measurable and consistent impact on adjacent property values. Under the identified methodology and scope of work, CohnReznick reviewed published methodology for measuring impact on property values as well as published reports that analyzed the impact of solar farms on property values. These studies found little to no measurable and consistent difference between Test Area Sales and Control Area Sales attributed to the solar farms.

A summary of the chosen CohnReznick impact studies prepared is presented below.

CohnReznick Solar Analysis Conclusions

Solar Farm No.	Solar Farm	Number of Test Area Sales	Number of Control Area Sales	Median Adjoining Property Sale Price per Unit (Test Area Sales)	Median Control Area Sales Price per Unit	Difference (%)	Avg. Feet from Panel to Lot	Avg. Feet from Panel to House	Impact Found
Single-Family Residential									
1	2662 Freeport Solar	2	14	$77.33	$76.08	+1.64%	114	243	No Impact
2	Grand Ridge Solar	1	5	$79.90	$74.35	+7.46%	366	479	No Impact
3	DTE Lapeer Solar Group 1	3	6	$105.26	$99.64	+5.64%	205	285	No Impact
	DTE Lapeer Solar Group 2	1	5	$114.12	$113.01	+0.98%	225	315	No Impact
	DTE Lapeer Solar Group 3	1	4	$94.84	$91.80	+3.31%	165	250	No Impact
4	Woodland Solar	1	5	$144.63	$137.76	+4.99%	420	615	No Impact
5	Dominion Indy Solar III Group 2	4	8	$59.10	$57.84	+2.18%	240	350	No Impact
	Dominion Indy Solar III Group 3	7	11	$72.15	$72.69	-0.74%	165	300	No Impact
6	Sunfish Farm Solar Group 1	1	14	$127.89	$124.86	+2.43%	50	200	No Impact
	Sunfish Farm Solar Group 2	1	10	$67.20	$66.23	+1.46%	665	760	No Impact
7	Portage Solar Group 2	1	7	$84.35	$84.27	+0.09%	1070	1233	No Impact
8	IMPA Frankton Solar Group 1	1	6	$28.58	$28.42	+0.56%	120	153	No Impact
	IMPA Frankton Solar Group 2	1	5	$52.40	$51.47	+1.81%	163	415	No Impact
9	Jefferson Community Solar Garden	3	6	$165.15	$164.36	+0.48%	609	658	No Impact
10	Valparaiso Solar Group 1	1	5	$82.42	$79.95	+3.09%	323	516	No Impact
Median Variance in Sale Prices for Test Area Sales to Control Area Sales						**+1.81%**			
29 Adjoining Test Area Sales studied and compared to 111 Control Area Sales									
** Note, the paired sale analysis for this group is an outlier as determined earlier in this report and was excluded from this summary table.*									
Land (Agricultural/Single Family Lots)									
5	Dominion Indy Solar III Group 1	1	4	$8,210	$8,091	+1.47%	280	-	No Impact
7	Portage Solar Group 1	1	9	$8,000	$7,674	+4.25%	845	-	No Impact
Median Variance in Sale Prices for Test to Control Areas						**+2.86%**			
2 Adjoining Test Area Sale studied and compared to 13 Control Area Sales									

As summarized above, we evaluated 31 property sales adjoining existing solar facilities (Test Area Sales) and 124 Control Area Sales. In addition, we studied a total of 37 Test Area Sales and 46 Control Area Sales in two Before and After analyses. In total, we have studied over 1,430 sale transactions across the United States.

The solar farms analyzed reflected sales of property adjoining an existing solar farm (Test Area Sales) in which the unit sale prices were effectively the same or higher than the comparable Control Area Sales that were not near a solar farm. The conclusions support that there is no negative impact for improved residential homes adjacent to solar, nor agricultural acreage. This was confirmed with market participants interviews, which provided additional insight as to how the market evaluates farmland and single-family homes with views of the solar farm.

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It can be concluded that since the Adjoining Property Sales (Test Area Sales) were not adversely affected by their proximity to the solar farm, that properties surrounding other proposed solar farms operating in compliance with all regulatory standards will similarly not be adversely affected, in either the short or long term periods.

Based upon the examination, research, and analyses of the existing solar farm uses, the surrounding areas, and an extensive market database, we have concluded that ***no consistent negative impact has occurred to adjacent property values that could be attributed to proximity to the adjacent solar farm***, with regard to unit sale prices or other influential market indicators. Additionally, in our workfile we have retained analyses of additional existing solar farms, each with their own set of matched control sales, which had consistent results, indicating no consistent and measurable impact on adjacent property values. This conclusion has been confirmed by numerous county assessors who have also investigated this use's potential impact on property values.

If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Respectfully submitted,

CohnReznick LLP



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Expires 9/30/2023
Indiana License No. CG41500037
Expires 6/30/2024



Patricia L. McGarr, MAI, CRE, FRICS
National Director - Valuation Advisory Services
Certified General Real Estate Appraiser
Illinois License No. #553.000621
Expires 9/30/2023
Indiana License No. #CG49600131
Expires 6/30/2024
Michigan License No. 1201072979
Expires 7/31/2024



Erin C. Bowen, MAI
Senior Manager
Certified General Real Estate Appraiser
Arizona License No. 32052
Expires 12/31/2024

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CERTIFICATION

We certify that, to the best of our knowledge and belief:

1. The statements of fact and data reported are true and correct.
2. The reported analyses, findings, and conclusions in this consulting report are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, findings, and conclusions.
3. We have no present or prospective interest in the property that is the subject of this report and no personal interest with respect to the parties involved.
4. We have performed no services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.
5. We have no bias with respect to the property that is the subject of this report or the parties involved with this assignment.
6. Our engagement in this assignment was not contingent upon developing or reporting predetermined results.
7. Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value finding, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this report.
8. Our analyses, findings, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute, which includes the Uniform Standards of Professional Appraisal Practice (USPAP).
9. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
10. Patricia L. McGarr, MAI, CRE, FRICS, Andrew R. Lines, MAI, and Erin C. Bowen, MAI have viewed the exterior of all comparable data referenced in this report in person, via photographs, or aerial imagery.
11. We have not relied on unsupported conclusions relating to characteristics such as race, color, religion, national origin, gender, marital status, familial status, age, and receipt of public assistance income, handicap, or an unsupported conclusion that homogeneity of such characteristics is necessary to maximize value.
12. Joseph P. B. Ficenec provided significant appraisal consulting assistance to the persons signing this certification, including data verification, research, and administrative work all under the appropriate supervision.
13. We have experience in reviewing properties similar to the subject and are in compliance with the Competency Rule of USPAP.
14. As of the date of this report, Patricia L. McGarr, MAI, CRE, FRICS, Andrew R. Lines, MAI, and Erin C. Bowen, MAI have completed the continuing education program for Designated Members of the Appraisal Institute.

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If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Respectfully submitted,

CohnReznick LLP

Andrew R. Lines, MAI
Principal
Certified General Real Estate Appraiser
Illinois License No. 553.001841
Expires 9/30/2023
Indiana License No. CG41500037
Expires 6/30/2024

Patricia L. McGarr, MAI, CRE, FRICS
National Director - Valuation Advisory Services
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Illinois License No. #553.000621
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Erin C. Bowen, MAI
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Certified General Real Estate Appraiser
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ASSUMPTIONS AND LIMITING CONDITIONS

The fact witness services will be subject to the following assumptions and limiting conditions:

1. No responsibility is assumed for the legal description provided or for matter pertaining to legal or title considerations. Title to the property is assumed to be good and marketable unless otherwise stated. The legal description used in this report is assumed to be correct.
2. The property is evaluated free and clear of any or all liens or encumbrances unless otherwise stated.
3. Responsible ownership and competent management are assumed.
4. Information furnished by others is believed to be true, correct and reliable, but no warranty is given for its accuracy.
5. All engineering studies are assumed to be correct. The plot plans and illustrative material in this report are included only to help the reader visualize the property.
6. It is assumed that there are no hidden or unapparent conditions of the property, subsoil, or structures that render it more or less valuable. No responsibility is assumed for such conditions or for obtaining the engineering studies that may be required to discover them.
7. It is assumed that the property is in full compliance with all applicable federal, state, and local and environmental regulations and laws unless the lack of compliance is stated, described, and considered in the evaluation report.
8. It is assumed that the property conforms to all applicable zoning and use regulations and restrictions unless nonconformity has been identified, described and considered in the evaluation report.
9. It is assumed that all required licenses, certificates of occupancy, consents, and other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate contained in this report is based.
10. It is assumed that the use of the land and improvements is confined within the boundaries or property lines of the property described and that there is no encroachment or trespass unless noted in this report.
11. The date of value to which the findings are expressed in this report apply is set forth in the letter of transmittal. The appraisers assume no responsibility for economic or physical factors occurring at some later date which may affect the opinions herein stated.
12. Unless otherwise stated in this report, the existence of hazardous materials, which may or may not be present on the property, was not observed by the appraisers. The appraisers have no knowledge of the existence of such substances on or in the property. The appraisers, however, are not qualified to detect such substances. The presence of substances such as asbestos, urea-formaldehyde foam insulation, radon gas, lead or lead-based products, toxic waste contaminants, and other potentially hazardous materials may affect the value of the property. The value estimate is predicated on the assumption that there is no such material on or in the property that would cause a loss in value. No

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responsibility is assumed for such conditions or for any expertise or engineering knowledge required to discover them. The client is urged to retain an expert in this field, if desired.

13. The forecasts, projections, or operating estimates included in this report were utilized to assist in the evaluation process and are based on reasonable estimates of market conditions, anticipated supply and demand, and the state of the economy. Therefore, the projections are subject to changes in future conditions that cannot be accurately predicated by the appraisers and which could affect the future income or value projections.

14. Fundamental to the appraisal analysis is the assumption that no change in zoning is either proposed or imminent, unless otherwise stipulated. Should a change in zoning status occur from the property's present classification, the appraisers reserve the right to alter or amend the value accordingly.

15. It is assumed that the property does not contain within its confined any unmarked burial grounds which would prevent or hamper the development process.

16. The Americans with Disabilities Act (ADA) became effective on January 26, 1992. We have not made a specific compliance survey and analysis of the property to determine if it is in conformance with the various detailed requirements of the ADA. It is possible that a compliance survey of the property, together with a detailed analysis of the requirements of the ADA, could reveal that the property is not in compliance with one or more of the requirements of the Act. If so, this fact could have a negative effect on the value of the property. Unless otherwise noted in this report, we have not been provided with a compliance survey of the property. Any information regarding compliance surveys or estimates of costs to conform to the requirements of the ADA are provided for information purposes. No responsibility is assumed for the accuracy or completeness of the compliance survey cited in this report, or for the eventual cost to comply with the requirements of the ADA.

17. Any value estimates provided in this report apply to the entire property, and any proration or division of the total into fractional interests will invalidate the value estimate, unless such proration or division of interests has been set forth in this report.

18. Any proposed improvements are assumed to have been completed unless otherwise stipulated; any construction is assumed to conform with the building plans referenced in this report.

19. Unless otherwise noted in the body of this report, this evaluation assumes that the subject does not fall within the areas where mandatory flood insurance is effective.

20. Unless otherwise noted in the body of this report, we have not completed nor are we contracted to have completed an investigation to identify and/or quantify the presence of non-tidal wetland conditions on the subject property.

21. This report should not be used as a basis to determine the structural adequacy/inadequacy of the property described herein, but for evaluation purposes only.

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22. It is assumed that the subject structure meets the applicable building codes for its respective jurisdiction. We assume no responsibility/liability for the inclusion/exclusion of any structural component item which may have an impact on value. It is further assumed that the subject property will meet code requirements as they relate to proper soil compaction, grading, and drainage.

23. The appraisers are not engineers, and any references to physical property characteristics in terms of quality, condition, cost, suitability, soil conditions, flood risk, obsolescence, etc., are strictly related to their economic impact on the property. No liability is assumed for any engineering-related issues.

The evaluation services will be subject to the following limiting conditions:

1. The findings reported herein are only applicable to the properties studied in conjunction with the Purpose of the Evaluation and the Function of the Evaluation as herein set forth; the evaluation is not to be used for any other purposes or functions.

2. Any allocation of the total value estimated in this report between the land and the improvements applies only to the stated program of utilization. The separate values allocated to the land and buildings must not be used in conjunction with any other appraisal and are not valid if so used.

3. No opinion is expressed as to the value of subsurface oil, gas or mineral rights, if any, and we have assumed that the property is not subject to surface entry for the exploration or removal of such materials, unless otherwise noted in the evaluation.

4. This report has been prepared by CohnReznick under the terms and conditions outlined by the enclosed engagement letter. Therefore, the contents of this report and the use of this report are governed by the client confidentiality rules of the Appraisal Institute. Specifically, this report is not for use by a third party and CohnReznick is not responsible or liable, legally or otherwise, to other parties using this report unless agreed to in writing, in advance, by both CohnReznick and/or the client or third party.

5. Disclosure of the contents of this evaluation report is governed by the by-laws and Regulations of the Appraisal Institute has been prepared to conform with the reporting standards of any concerned government agencies.

6. The forecasts, projections, and/or operating estimates contained herein are based on current market conditions, anticipated short-term supply and demand factors, and a continued stable economy. These forecasts are, therefore, subject to changes with future conditions. This evaluation is based on the condition of local and national economies, purchasing power of money, and financing rates prevailing at the effective date of value.

7. This evaluation shall be considered only in its entirety, and no part of this evaluation shall be utilized separately or out of context. Any separation of the signature pages from the balance of the evaluation report invalidates the conclusions established herein.

8. **Possession of this report, or a copy thereof, does not carry with it the right of publication, nor may it be used for any purposes by anyone other than the client without the prior written consent of the appraisers, and in any event, only with property qualification.**

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9. The appraisers, by reason of this study, are not required to give further consultation or testimony or to be in attendance in court with reference to the property in question unless arrangements have been previously made.

10. Neither all nor any part of the contents of this report shall be conveyed to any person or entity, other than the appraiser's client, through advertising, solicitation materials, public relations, news, sales or other media, without the written consent and approval of the authors, particularly as to evaluation conclusions, the identity of the appraisers or CohnReznick, LLC, or any reference to the Appraisal Institute, or the MAI designation. Further, the appraisers and CohnReznick, LLC assume no obligation, liability, or accountability to any third party. If this report is placed in the hands of anyone but the client, client shall make such party aware of all the assumptions and limiting conditions of the assignment.

11. This evaluation is not intended to be used, and may not be used, on behalf of or in connection with a real estate syndicate or syndicates. A real estate syndicate means a general or limited partnership, joint venture, unincorporated association or similar organization formed for the purpose of, and engaged in, an investment or gain from an interest in real property, including, but not limited to a sale or exchange, trade or development of such real property, on behalf of others, or which is required to be registered with the United States Securities and Exchange commissions or any state regulatory agency which regulates investments made as a public offering. It is agreed that any user of this evaluation who uses it contrary to the prohibitions in this section indemnifies the appraisers and the appraisers' firm and holds them harmless from all claims, including attorney fees, arising from said use.

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ADDENDUM A:
APPRAISER QUALIFICATIONS

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Patricia L. McGarr, MAI, CRE, FRICS, CRA

Principal and CohnReznick Group – Valuation Advisory National Director

200 S. Wacker Drive, Suite 2600
Chicago, IL 60606
312-508-5802
patricia.mcgarr@cohnreznick.com

Patricia L. McGarr, MAI, CRE, FRICS, CRA, is a principal and National Director of CohnReznick Advisory Group's Valuation Advisory Services practice. Pat's experience includes market value appraisals of varied property types for acquisition, condemnation, mortgage, estate, ad valorem tax, litigation, zoning, and other purposes. Pat has been involved in the real estate business since 1980. From June 1980 to January 1984, she was involved with the sales and brokerage of residential and commercial properties. Her responsibilities during this time included the formation, management, and training of sales staff in addition to her sales, marketing, and analytical functions. Of special note was her development of a commercial division for a major Chicago-area brokerage firm.

Since January 1984, Pat has been exclusively involved in the valuation of real estate. Her experience includes the valuation of a wide variety of property types including residential (SF/MF/LIHTC), commercial, industrial, and special purpose properties including such diverse subjects as quarries, marinas, riverboat gaming sites, shopping centers, manufacturing plants, and office buildings. She is also experienced in the valuation of leasehold and leased fee interests. Pat has performed appraisal assignments throughout the country, including the Chicago Metropolitan area as well as New York, New Jersey, California, Nevada, Florida, Utah, Texas, Wisconsin, Indiana, Michigan, and Ohio. Pat has gained substantial experience in the study and analysis of the establishment and expansion of sanitary landfills in various metropolitan areas including the preparation of real estate impact studies to address criteria required by Senate Bill 172. She has also developed an accepted format for allocating value of a landfill operation between real property, landfill improvements, and franchise (permits) value.

Over the past several years, Pat has developed a valuation group that specializes in the establishment of new utility corridors for electric power transmission and pipelines. This includes determining acquisition budgets, easement acquisitions, corridor valuations, and litigation support. Pat has considerable experience in performing valuation impact studies on potential detrimental conditions and has studied properties adjoining solar farms, wind farms, landfills, waste transfer stations, stone quarries, cellular towers, schools, electrical power transmission lines, "Big Box" retail facilities, levies, properties with restrictive covenants, landmark districts, environmental contamination, airports, material defects in construction, stigma, and loss of view amenity for residential high rises. Most recently, the firm has studied property values adjacent to Solar Farms to address criteria required for special use permits across the Midwest.

Pat has qualified as an expert valuation witness in numerous local, state, and federal courts.

Pat has participated in specialized real estate appraisal education and has completed more than 50 courses and seminars offered by the Appraisal Institute totaling more than 600 classroom hours, including real estate transaction courses as a prerequisite to obtaining a State of Illinois Real Estate Salesman License.

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Pat has earned the professional designations of Counselors of Real Estate (CRE), Member of the Appraisal Institute (MAI), Fellow of Royal Institution of Chartered Surveyors (FRICS) and Certified Review Appraiser (CRA). She has also been a certified general real estate appraiser in 21 states (see below).

Education

- North Park University: Bachelor of Science, General Studies

Professional Affiliations

- National Association of Realtors
- CREW Commercial Real Estate Executive Women
- IRWA International Right Of Way Association

Licenses and Accreditations

- Member of the Appraisal Institute (MAI)
- Counselors of Real Estate, designated CRE
- Fellow of Royal Institution of Chartered Surveyors (FRICS)
- Certified Review Appraiser (CRA)
- Alabama State Certified General Real Estate Appraiser
- California State Certified General Real Estate Appraiser
- Connecticut State Certified General Real Estate Appraiser
- Colorado State Certified General Real Estate Appraiser
- District of Columbia Certified General Real Estate Appraiser
- Illinois State Certified General Real Estate Appraiser
- Indiana State Certified General Real Estate Appraiser
- Louisiana State Certified General Real Estate Appraiser
- Maryland State Certified General Real Estate Appraiser
- Massachusetts Certified General Real Estate Appraiser
- Michigan State Certified General Real Estate Appraiser
- North Carolina State Certified General Real Estate Appraiser
- New Jersey State Certified General Real Estate Appraiser
- Nevada State Certified General Real Estate Appraiser
- New York State Certified General Real Estate Appraiser
- Pennsylvania State Certified General Real Estate Appraiser
- South Carolina State Certified General Real Estate Appraiser
- Tennessee State Certified General Real Estate Appraiser
- Texas State Certified General Real Estate Appraiser
- Virginia State Certified General Real Estate Appraiser
- Wisconsin State Certified General Real Estate Appraiser

Appointments

- Appointed by two Governors of Illinois to the State Real Estate Appraisal Board (2017 & 2021)
- Chairperson of the State of Illinois Real Estate Appraisal Board (2021)

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CohnReznick



Andrew R. Lines, MAI

Principal, CohnReznick Advisory

200 S. Wacker Drive, Suite 2600
Chicago, IL 60606
312-508-5892
andrew.lines@cohnreznick.com

Andrew R. Lines is a principal in CohnReznick's Valuation Advisory Services group where he specializes in Real Estate, Affordable Housing, Cannabis and Renewable Energy. Andrew leads a group of appraisers across the country performing valuations on a wide variety of real estate property types including residential, commercial, industrial, hospitality and special purpose properties: landfills, waste transfer stations, marinas, hospitals, universities, self-storage facilities, racetracks, CCRCs, and railroad corridors. Affordable Housing experience includes Market Studies, Rent Compatibility Studies and Feasibility Analysis for LIHTC and mixed-income developments. Cannabis assignments have covered cultivation, processing and dispensaries in over 10 states, including due diligence for mergers and acquisitions of multi-state operational and early stage companies. Renewable Energy assignments have included preparation of impact studies and testimony at local zoning hearings in eight states.

Andrew is experienced in the valuation of leasehold, leased fee, and partial interests and performs appraisals for all purposes including financial reporting, litigation, and gift/estate planning. Andrew is a State Certified General Real Estate Appraiser in the states of Illinois, Indiana, Maryland, Georgia, Florida, Ohio, New York, New Jersey, Arizona, Kentucky, and the District of Columbia.

Before joining CohnReznick, Andrew was with Integra Realty Resources, starting as analyst support in 2002 and leaving the firm as a director in late 2011 (including two years with the Phoenix branch). His real estate experience also includes one year as administrator for the residential multifamily REIT Equity Residential Properties Trust (ERP), in the transactions department, where he performed due diligence associated with the sale and acquisition of REIT properties and manufactured home communities.

Education

- Syracuse University: Bachelor of Fine Arts
- MAI Designation (Member of the Appraisal Institute)

Professional Affiliations

- Chicago Chapter of the Appraisal Institute
  - Alternate Regional Representative (2016 - 2018)
  - MAI Candidate Advisor (2014 - Present)
- International Real Estate Management (IREM)
- National Council of Real Estate Investment Fiduciaries (NCREIF)

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Community Involvement

- Syracuse University Regional Council – Active Member
- Syracuse University Alumni Association of Chicago, Past Board member
- Chicago Friends School – Treasurer & Board Member

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Erin Bowen, MAI

Senior Manager, Valuation Advisory Services

404-847-7740
erin.bowen@cohnreznick.com
www.cohnreznick.com

Erin Bowen, MAI is a Senior Manager with CohnReznick in Valuation Advisory Services. Ms. Bowen is based in Phoenix, Arizona, with presence covering the west coast. Ms. Bowen's work in Commercial Real Estate valuation spans over 12 years.

Ms. Bowen specializes in lodging, cannabis, seniors housing, large scale retail and multifamily conversion properties. Lodging work includes all hotel property types and brand segments including limited, full service and resort properties; additionally, Ms. Bowen has appraised numerous hotel to multifamily conversion properties including market rate and affordable housing. Cannabis work includes dispensaries, cultivation facilities including specialized indoor facilities and greenhouse properties, processing and manufacturing facilities. Senior's housing assignments include assisted living, skilled nursing facilities and rehabilitation centers. Retail work spans power centers, lifestyle centers, outlet centers and malls. She has appraised numerous additional properties including multifamily, office, medical office, industrial, churches, and vacant land.

Ms. Bowen has expertise in appraising properties at all stages of development, including existing as is, proposed, under construction, renovations and conversion to alternate use. Valuations have been completed nationwide for a variety of assignments including mortgage financing, litigation, eminent domain, tax appeal, estate gifts, asset management, as well as valuation for financial reporting including purchase price allocations (ASC 805). Impact Study Reports have also been generated for zoning hearings related to the development of solar facilities and wind powered facilities. Ms. Bowen has qualified as an expert witness and provided testimony for zoning and county commission hearings.

Education

- University of California, San Diego: Bachelor of Arts in Psychology and Theater; College Honors

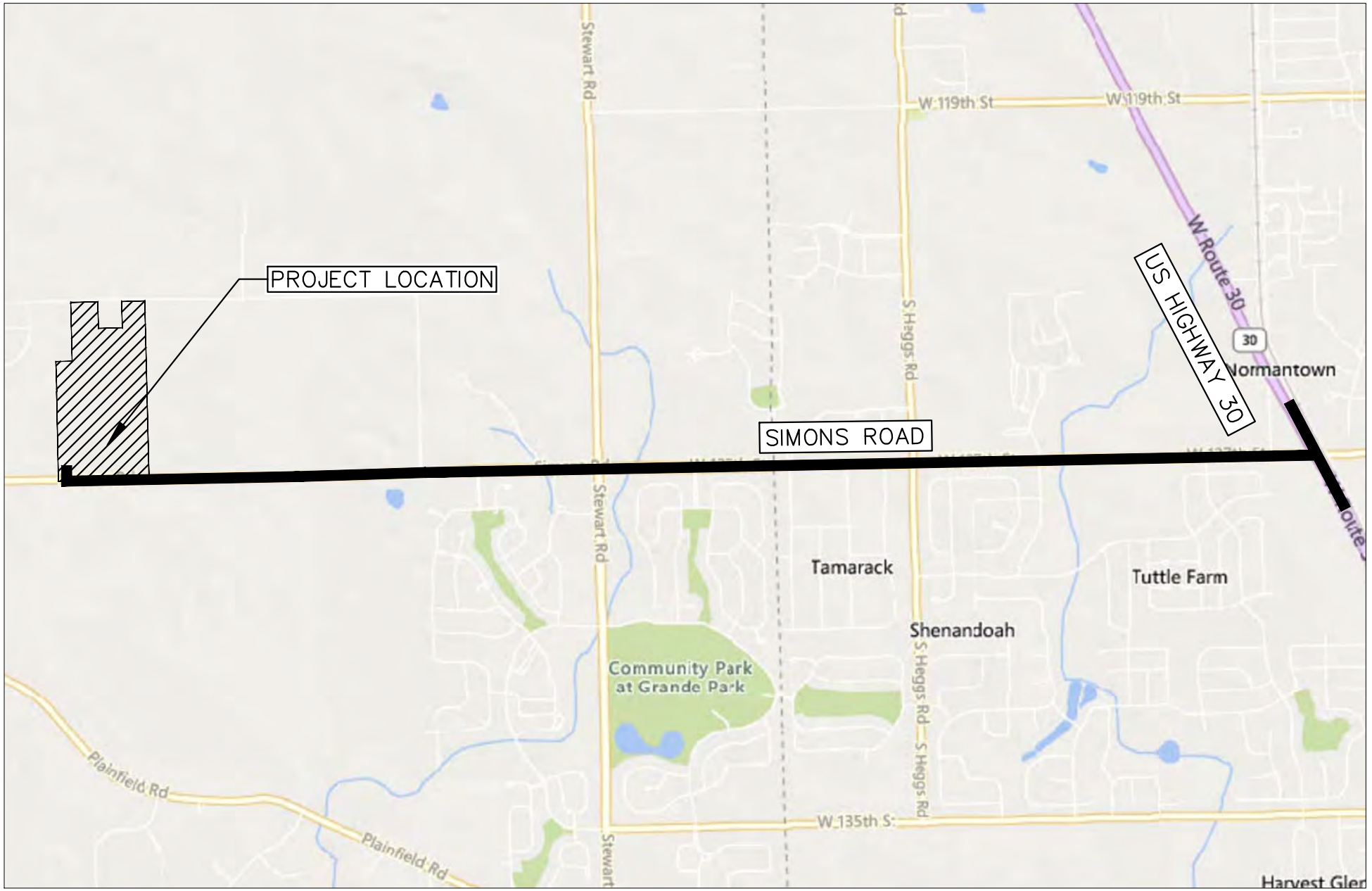
Professional Affiliations

- Appraisal Institute, Designated Member

Licenses

- Certified General Real Estate Appraiser licensed in Oregon, Arizona, California, and Nevada

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NORTH

TRANSPORTATION AND ACCESS PLAN

KHA PROJECT:	268173044
DRAWN BY:	LAD
DATE:	2/15/24

TPE IL KE240, LLC
KENDALL COUNTY, IL

SCALE:

1" = 2000'

Kimley»Horn

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570 LAKE COOK RD SUITE 200
DEERFIELD, IL 60015
WWW.KIMLEY-HORN.COM

STANDARD AGRICULTURAL IMPACT MITIGATION AGREEMENT

between

TPE IL KE240, LLC

and the

ILLINOIS DEPARTMENT OF AGRICULTURE

Pertaining to the Construction of a Commercial Solar Energy Facility

in

Kendall County, Illinois

Pursuant to the Renewable Energy Facilities Agricultural Impact Mitigation Act (505 ILCS 147), the following standards and policies are required by the Illinois Department of Agriculture (IDOA) to help preserve the integrity of any Agricultural Land that is impacted by the Construction and Deconstruction of a Commercial Solar Energy Facility. They were developed with the cooperation of agricultural agencies, organizations, Landowners, Tenants, drainage contractors, and solar energy companies to comprise this Agricultural Impact Mitigation Agreement (AIMA).

TPE IL KE240, LLC, hereafter referred to as Commercial Solar Energy Facility Owner, or simply as Facility Owner, plans to develop and/or operate a 4.99 MW Commercial Solar Energy Facility in Kendall County [GPS Coordinates: 41°39'07.2"N 88°17'45.7"W], which will consist of up to 35 acres that will be covered by solar facility related components, such as solar panel arrays, racking systems, access roads, an onsite underground collection system, inverters and transformers and any affiliated electric transmission lines. This AIMA is made and entered between the Facility Owner and the IDOA.

If Construction does not commence within four years after this AIMA has been fully executed, this AIMA shall be revised, with the Facility Owner's input, to reflect the IDOA's most current Solar Farm Construction and Deconstruction Standards and Policies. This AIMA, and any updated AIMA, shall be filed with the County Board by the Facility Owner prior to the commencement of Construction.

The below prescribed standards and policies are applicable to Construction and Deconstruction activities occurring partially or wholly on privately owned agricultural land.

Conditions of the AIMA

The mitigative actions specified in this AIMA shall be subject to the following conditions:

A. All Construction or Deconstruction activities may be subject to County or other local requirements. However, the specifications outlined in this AIMA shall be the minimum standards applied to all Construction or Deconstruction activities. IDOA may utilize any legal means to enforce this AIMA.

B. Except for Section 17. B. through F., all actions set forth in this AIMA are subject to modification through negotiation by Landowners and the Facility Owner, provided such changes are negotiated in advance of the respective Construction or Deconstruction activities.

C. The Facility Owner may negotiate with Landowners to carry out the actions that Landowners wish to perform themselves. In such instances, the Facility Owner shall offer Landowners the area commercial rate for their machinery and labor costs.

D. All provisions of this AIMA shall apply to associated future Construction, maintenance, repairs, and Deconstruction of the Facility referenced by this AIMA.

E. The Facility Owner shall keep the Landowners and Tenants informed of the Facility's Construction and Deconstruction status, and other factors that may have an impact upon their farming operations.

F. The Facility Owner shall include a statement of its adherence to this AIMA in any environmental assessment and/or environmental impact statement.

G. Execution of this AIMA shall be made a condition of any Conditional/Special Use Permit. Not less than 30 days prior to the commencement of Construction, a copy of this AIMA shall be provided by the Facility Owner to each Landowner that is party to an Underlying Agreement. In addition, this AIMA shall be incorporated into each Underlying Agreement.

H. The Facility Owner shall implement all actions to the extent that they do not conflict with the requirements of any applicable federal, state and local rules and regulations and other permits and approvals that are obtained by the Facility Owner for the Facility.

I. No later than 45 days prior to the Construction and/or Deconstruction of a Facility, the Facility Owner shall provide the Landowner(s) with a telephone number the Landowner can call to alert the Facility Owner should the Landowner(s) have questions or concerns with the work which is being done or has been carried out on his/her property.

J. If there is a change in ownership of the Facility, the Facility Owner assuming ownership of the Facility shall provide written notice within 90 days of ownership transfer, to the Department, the County, and to Landowners of such change. The Financial Assurance requirements and the other terms of this AIMA shall apply to the new Facility Owner.

K. The Facility Owner shall comply with all local, state and federal laws and regulations, specifically including the worker protection standards to protect workers from pesticide exposure.

L. Within 30 days of execution of this AIMA, the Facility Owner shall use Best Efforts to provide the IDOA with a list of all Landowners that are party to an Underlying Agreement and known Tenants of said Landowner who may be affected by the Facility. As the list of Landowners and Tenants is updated, the Facility Owner shall notify the IDOA of any additions or deletions.

M. If any provision of this AIMA is held to be unenforceable, no other provision shall be affected by that holding, and the remainder of the AIMA shall be interpreted as if it did not contain the unenforceable provision.

Definitions

Abandonment	When Deconstruction has not been completed within 12 months after the Commercial Solar Energy Facility reaches the end of its useful life. For purposes of this definition, a Commercial Solar Energy Facility shall be presumed to have reached the end of its useful life if the Commercial Solar Energy Facility Owner fails, for a period of 6 consecutive months, to pay the Landowner amounts owed in accordance with an Underlying Agreement.

Aboveground Cable	Electrical power lines installed above ground surface to be utilized for conveyance of power from the solar panels to the solar facility inverter and/or point of interconnection to utility grid or customer electric meter.
Agricultural Impact Mitigation Agreement (AIMA)	The Agreement between the Facility Owner and the Illinois Department of Agriculture (IDOA) described herein.
Agricultural Land	Land used for Cropland, hayland, pastureland, managed woodlands, truck gardens, farmsteads, commercial ag-related facilities, feedlots, livestock confinement systems, land on which farm buildings are located, and land in government conservation programs used for purposes as set forth above.
Best Efforts	Diligent, good faith, and commercially reasonable efforts to achieve a given objective or obligation.
Commercial Operation Date	The calendar date of which the Facility Owner notifies the Landowner, County, and IDOA in writing that commercial operation of the facility has commenced. If the Facility Owner fails to provide such notifications, the Commercial Operation Date shall be the execution date of this AIMA plus 6 months.
Commercial Solar Energy Facility (Facility)	A solar energy conversion facility equal to or greater than 500 kilowatts in total nameplate capacity, including a solar energy conversion facility seeking an extension of a permit to construct granted by a county or municipality before June 29, 2018. "Commercial solar energy facility" does not include a solar energy conversion facility: (1) for which a permit to construct has been issued before June 29, 2018; (2) that is located on land owned by the commercial solar energy facility owner; (3) that was constructed before June 29, 2018; or (4) that is located on the customer side of the customer's electric meter and is primarily used to offset that customer's electricity load and is limited in nameplate capacity to less than or equal to 2,000 kilowatts.
Commercial Solar Energy Facility Owner deemed (Facility Owner)	A person or entity that owns a commercial solar energy facility. A Commercial Solar Energy Facility Owner is not nor shall it be to be a public utility as defined in the Public Utilities Act.
County	The County or Counties where the Commercial Solar Energy Facility is located.
Construction	The installation, preparation for installation and/or repair of a Facility.
Cropland	Land used for growing row crops, small grains or hay; includes land which was formerly used as cropland, but is currently enrolled in a government conservation program; also includes pastureland that is classified as Prime Farmland.

Deconstruction	The removal of a Facility from the property of a Landowner and the restoration of that property as provided in the AIMA.
Deconstruction Plan	A plan prepared by a Professional Engineer, at the Facility's expense, that includes: (1) the estimated Deconstruction cost, in current dollars at the time of filing, for the Facility, considering among other things: i. the number of solar panels, racking, and related facilities involved; ii. the original Construction costs of the Facility; iii. the size and capacity, in megawatts of the Facility; iv. the salvage value of the facilities (if all interests in salvage value are subordinate to that of the Financial Assurance holder if abandonment occurs); v. the Construction method and techniques for the Facility and for other similar facilities; and (2) a comprehensive detailed description of how the Facility Owner plans to pay for the Deconstruction of the Facility.
Department	The Illinois Department of Agriculture (IDOA).
Financial Assurance	A reclamation or surety bond or other commercially available financial assurance that is acceptable to the County, with the County or Landowner as beneficiary.
Landowner	Any person with an ownership interest in property that is used for agricultural purposes and that is party to an Underlying Agreement.
Prime Farmland	Agricultural Land comprised of soils that are defined by the USDA Natural Resources Conservation Service (NRCS) as "Prime Farmland" (generally considered to be the most productive soils with the least input of nutrients and management).
Professional Engineer	An engineer licensed to practice engineering in the State of Illinois.
Soil and Water Conservation District (SWCD)	A unit of local government that provides technical and financial assistance to eligible Landowners for the conservation of soil and water resources.
Tenant	Any person, apart from the Facility Owner, lawfully residing or leasing/renting land that is subject to an Underlying Agreement.
Topsoil	The uppermost layer of the soil that has the darkest color or the highest content of organic matter; more specifically, it is defined as the "A" horizon.
Underlying Agreement	The written agreement between the Facility Owner and the Landowner(s) including, but not limited to, an easement, option, lease, or license under the terms of which another person has constructed, constructs, or intends to construct a Facility on the property of the Landowner.

Underground Cable	Electrical power lines installed below the ground surface to be utilized for conveyance of power within a Facility or from a Commercial Solar Energy Facility to the electric grid.
USDA Natural Resources Conservation Service (NRCS)	An agency of the United States Department of Agriculture that provides America's farmers with financial and technical assistance to aid with natural resources conservation.

Construction and Deconstruction Standards and Policies

1. Support Structures

A. Only single pole support structures shall be used for the Construction and operation of the Facility on Agricultural Land. Other types of support structures, such as lattice towers or H-frames, may be used on nonagricultural land.

B. Where a Facility's Aboveground Cable will be adjacent and parallel to highway and/or railroad right-of-way, but on privately owned property, the support structures shall be placed as close as reasonably practicable and allowable by the applicable County Engineer or other applicable authorities to the highway or railroad right-of-way. The only exceptions may be at jogs or weaves on the highway alignment or along highways or railroads where transmission and distribution lines are already present.

C. When it is not possible to locate Aboveground Cable next to highway or railroad right-of-way, Best Efforts shall be expended to place all support poles in such a manner to minimize their placement on Cropland (i.e., longer than normal above ground spans shall be utilized when traversing Cropland).

2. Aboveground Facilities

Locations for facilities shall be selected in a manner that is as unobtrusive as reasonably possible to ongoing agricultural activities occurring on the land that contains or is adjacent to the Facility.

3. Guy Wires and Anchors

Best Efforts shall be made to place guy wires and their anchors, if used, out of Cropland, pastureland and hayland, placing them instead along existing utilization lines and on land other than Cropland. Where this is not feasible, Best Efforts shall be made to minimize guy wire impact on Cropland. All guy wires shall be shielded with highly visible guards.

4. Underground Cabling Depth

A. Underground electrical cables located outside the perimeter of the (fence) of the solar panels shall be buried with:

1. a minimum of 5 feet of top cover where they cross Cropland.
2. a minimum of 5 feet of top cover where they cross pastureland or other non-Cropland classified as Prime Farmland.
3. a minimum of 3 feet of top cover where they cross pastureland and other Agricultural Land not classified as Prime Farmland.

4. a minimum of 3 feet of top cover where they cross wooded/brushy land.

B. Provided that the Facility Owner removes the cables during Deconstruction, underground electric cables may be installed to a minimum depth of 18 inches:

1. Within the fenced perimeter of the Facility; or

2. When buried under an access road associated with the Facility provided that the location and depth of cabling is clearly marked at the surface.

C. If Underground Cables within the fenced perimeter of the solar panels are installed to a minimum depth of 5 feet, they may remain in place after Deconstruction.

5. Topsoil Removal and Replacement

A. Any excavation shall be performed in a manner to preserve topsoil. Best Efforts shall be made to store the topsoil near the excavation site in such a manner that it will not become intermixed with subsoil materials.

B. Best Efforts shall be made to store all disturbed subsoil material near the excavation site and separate from the topsoil.

C. When backfilling an excavation site, Best Efforts shall be used to ensure the stockpiled subsoil material will be placed back into the excavation site before replacing the topsoil.

D. Refer to Section 7 for procedures pertaining to rock removal from the subsoil and topsoil.

E. Refer to Section 8 for procedures pertaining to the repair of compaction and rutting of the topsoil.

F. Best Efforts shall be performed to place the topsoil in a manner so that after settling occurs, the topsoil's original depth and contour will be restored as close as reasonably practicable. The same shall apply where excavations are made for road, stream, drainage ditch, or other crossings. In no instance shall the topsoil materials be used for any other purpose unless agreed to explicitly and in writing by the Landowner.

G. Based on the mutual agreement of the landowner and Facility Owner, excess soil material resulting from solar facility excavation shall either be removed or stored on the Landowner's property and reseeded per the applicable National Pollution Discharge Elimination System (NPDES) permit/Stormwater Pollution Prevention Plan (SWPPP). After the Facility reaches the end of its Useful Life, the excess subsoil material shall be returned to an excavation site or removed from the Landowner's property, unless otherwise agreed to by Landowner.

6. Rerouting and Permanent Repair of Agricultural Drainage Tiles

The following standards and policies shall apply to underground drainage tile line(s) directly or indirectly affected by Construction and/or Deconstruction:

A. Prior to Construction, the Facility Owner shall work with the Landowner to identify drainage tile lines traversing the property subject to the Underlying Agreement to the extent reasonably practicable. All drainage tile lines identified in this manner shall be shown on the Construction and Deconstruction Plans.

B. The location of all drainage tile lines located adjacent to or within the footprint of the Facility shall be recorded using Global Positioning Systems (GPS) technology. Within 60 days after Construction is complete, the Facility Owner shall provide the Landowner, the IDOA, and the respective County Soil and Water Conservation District (SWCD) with "as built" drawings (strip maps) showing the location of all drainage tile lines by survey station encountered in the Construction of the Facility, including any tile line repair location(s), and any underground cable installed as part of the Facility.

C. **Maintaining Surrounding Area Subsurface Drainage**

If drainage tile lines are damaged by the Facility, the Facility Owner shall repair the lines or install new drainage tile line(s) of comparable quality and cost to the original(s), and of sufficient size and appropriate slope in locations that limit direct impact from the Facility. If the damaged tile lines cause an unreasonable disruption to the drainage system, as determined by the Landowner, then such repairs shall be made promptly to ensure appropriate drainage. Any new line(s) may be located outside of, but adjacent to the perimeter of the Facility. Disrupted adjacent drainage tile lines shall be attached thereto to provide an adequate outlet for the disrupted adjacent tile lines.

D. **Re-establishing Subsurface Drainage Within Facility Footprint**

Following Deconstruction and using Best Efforts, if underground drainage tile lines were present within the footprint of the facility and were severed or otherwise damaged during original Construction, facility operation, and/or facility Deconstruction, the Facility Owner shall repair existing drainage tiles or install new drainage tile lines of comparable quality and cost to the original, within the footprint of the Facility with sufficient capacity to restore the underground drainage capacity that existed within the footprint of the Facility prior to Construction. Such installation shall be completed within 12 months after the end of the useful life of the Facility and shall be compliant with Figures 1 and 2 to this Agreement or based on prudent industry standards if agreed to by Landowner.

E. If there is any dispute between the Landowner and the Facility Owner on the method of permanent drainage tile line repair, the appropriate County SWCD's opinion shall be considered by the Facility Owner and the Landowner.

F. During Deconstruction, all additional permanent drainage tile line repairs beyond those included above in Section 6.D. must be made within 30 days of identification or notification of the damage, weather and soil conditions permitting. At other times, such repairs must be made at a time mutually agreed upon by the Facility Owner and the Landowner. If the Facility Owner and Landowner cannot agree upon a reasonable method to complete this restoration, the Facility Owner may implement the recommendations of the appropriate County SWCD and such implementation constitutes compliance with this provision.

G. Following completion of the work required pursuant to this Section, the Facility Owner shall be responsible for correcting all drainage tile line repairs that fail due to Construction and/or Deconstruction for one year following the completion of Construction or Deconstruction, provided those repairs were made by the Facility Owner. The Facility Owner shall not be responsible for drainage tile repairs that the Facility Owner pays the Landowner to perform.

7. Rock Removal

With any excavations, the following rock removal procedures pertain only to rocks found in the uppermost 42 inches of soil, the common freeze zone in Illinois, which emerged or were brought to the site as a result of Construction and/or Deconstruction.

A. Before replacing any topsoil, Best Efforts shall be taken to remove all rocks greater than 3 inches in any dimension from the surface of exposed subsoil which emerged or were brought to the site as a result of Construction and/or Deconstruction.

B. If trenching, blasting, or boring operations are required through rocky terrain, precautions shall be taken to minimize the potential for oversized rocks to become interspersed in adjacent soil material.

C. Rocks and soil containing rocks removed from the subsoil areas, topsoil, or from any excavations, shall be removed from the Landowner's premises or disposed of on the Landowner's premises at a location that is mutually acceptable to the Landowner and the Facility Owner.

8. Repair of Compaction and Rutting

A. Unless the Landowner opts to do the restoration work on compaction and rutting, after the topsoil has been replaced post-Deconstruction, all areas within the boundaries of the Facility that were traversed by vehicles and Construction and/or Deconstruction equipment that exhibit compaction and rutting shall be restored by the Facility Owner. All prior Cropland shall be ripped at least 18 inches deep or to the extent practicable, and all pasture and woodland shall be ripped at least 12 inches deep or to the extent practicable. The existence of drainage tile lines or underground utilities may necessitate less ripping depth. The disturbed area shall then be disked.

B. All ripping and disking shall be done at a time when the soil is dry enough for normal tillage operations to occur on Cropland adjacent to the Facility.

C. The Facility Owner shall restore all rutted land to a condition as close as possible to its original condition upon Deconstruction, unless necessary earlier as determined by the Landowner.

D. If there is any dispute between the Landowner and the Facility Owner as to what areas need to be ripped/disked or the depth at which compacted areas should be ripped/disked, the appropriate County SWCD's opinion shall be considered by the Facility Owner and the Landowner.

9. Construction During Wet Weather

Except as provided below, construction activities are not allowed on agricultural land during times when normal farming operations, such as plowing, disking, planting or harvesting, cannot take place due to excessively wet soils. With input from the landowner, wet weather conditions may be determined on a field by field basis.

A. Construction activities on prepared surfaces, surfaces where topsoil and subsoil have been removed, heavily compacted in preparation, or otherwise stabilized (e.g. through cement mixing) may occur at the discretion of the Facility Owner in wet weather conditions.

B. Construction activities on unprepared surfaces will be done only when work will not result in rutting which may mix subsoil and topsoil. Determination as to the potential of subsoil and topsoil mixing will be made in consultation with the underlying Landowner, or, if approved by the Landowner, his/her designated tenant or designee.

10. Prevention of Soil Erosion

A. The Facility Owner shall work with Landowners and create and follow a SWPPP to prevent excessive erosion on land that has been disturbed by Construction or Deconstruction of a Facility.

B. If the Landowner and Facility Owner cannot agree upon a reasonable method to control erosion on the Landowner's property, the Facility Owner shall consider the recommendations of the appropriate County SWCD to resolve the disagreement.

C. The Facility Owner may, per the requirements of the project SWPPP and in consultation with the Landowner, seed appropriate vegetation around all panels and other facility components to prevent erosion. The Facility Owner must utilize Best Efforts to ensure that all seed mixes will be as free of any noxious weed seeds as possible. The Facility Owner shall consult with the Landowner regarding appropriate varieties to seed.

11. Repair of Damaged Soil Conservation Practices

Consultation with the appropriate County SWCD by the Facility Owner shall be carried out to determine if there are soil conservation practices (such as terraces, grassed waterways, etc.) that will be damaged by the Construction and/or Deconstruction of the Facility. Those conservation practices shall be restored to their preconstruction condition as close as reasonably practicable following Deconstruction in accordance with USDA NRCS technical standards. All repair costs shall be the responsibility of the Facility Owner.

12. Compensation for Damages to Private Property

The Facility Owner shall reasonably compensate Landowners for damages caused by the Facility Owner. Damage to Agricultural Land shall be reimbursed to the Landowner as prescribed in the applicable Underlying Agreement.

13. Clearing of Trees and Brush

A. If trees are to be removed for the Construction or Deconstruction of a Facility, the Facility Owner shall consult with the Landowner to determine if there are trees of commercial or other value to the Landowner.

B. If there are trees of commercial or other value to the Landowner, the Facility Owner shall allow the Landowner the right to retain ownership of the trees to be removed and the disposition of the removed trees shall be negotiated prior to the commencement of land clearing.

14. Access Roads

A. To the extent practicable, access roads shall be designed to not impede surface drainage and shall be built to minimize soil erosion on or near the access roads.

B. Access roads may be left intact during Construction, operation or Deconstruction through mutual agreement of the Landowner and the Facility Owner unless otherwise restricted by federal, state, or local regulations.

C. If the access roads are removed, Best Efforts shall be expended to assure that the land shall be restored to equivalent condition(s) as existed prior to their construction, or as otherwise agreed to by the Facility Owner and the Landowner. All access roads that are removed shall be ripped to a depth of 18 inches. All ripping shall be performed consistent with Section 8.

15. Weed/Vegetation Control

A. The Facility Owner shall provide for weed control in a manner that prevents the spread of weeds. Chemical control, if used, shall be done by an appropriately licensed pesticide applicator.

B. The Facility Owner shall be responsible for the reimbursement of all reasonable costs incurred by owners of agricultural land where it has been determined by the appropriate state or county entity that weeds have spread from the Facility to their property. Reimbursement is contingent upon written notice to the Facility Owner. Facility Owner shall reimburse the property owner within 45 days after notice is received.

C. The Facility Owner shall ensure that all vegetation growing within the perimeter of the Facility is properly and appropriately maintained. Maintenance may include, but not be limited to, mowing, trimming, chemical control, or the use of livestock as agreed to by the Landowner.

D. The Deconstruction plans must include provisions for the removal of all weed control equipment used in the Facility, including weed-control fabrics or other ground covers.

16. Indemnification of Landowners

The Facility Owner shall indemnify all Landowners, their heirs, successors, legal representatives, and assigns from and against all claims, injuries, suits, damages, costs, losses, and reasonable expenses resulting from or arising out of the Commercial Solar Energy Facility, including Construction and Deconstruction thereof, and also including damage to such Facility or any of its appurtenances, except where claims, injuries, suits, damages, costs, losses, and expenses are caused by the negligence or intentional acts, or willful omissions of such Landowners, and/or the Landowners heirs, successors, legal representatives, and assigns.

17. Deconstruction Plans and Financial Assurance of Commercial Solar Energy Facilities

A. Deconstruction of a Facility shall include the removal/disposition of all solar related equipment/facilities, including the following utilized for operation of the Facility and located on Landowner property:

1. Solar panels, cells and modules;
2. Solar panel mounts and racking, including any helical piles, ground screws, ballasts, or other anchoring systems;
3. Solar panel foundations, if used (to depth of 5 feet);

4. Transformers, inverters, energy storage facilities, or substations, including all components and foundations; however, Underground Cables at a depth of 5 feet or greater may be left in place;
5. Overhead collection system components;
6. Operations/maintenance buildings, spare parts buildings and substation/switching gear buildings unless otherwise agreed to by the Landowner;
7. Access Road(s) unless Landowner requests in writing that the access road is to remain;
8. Operation/maintenance yard/staging area unless otherwise agreed to by the Landowner; and
9. Debris and litter generated by Deconstruction and Deconstruction crews.

B. The Facility Owner shall, at its expense, complete Deconstruction of a Facility within twelve (12) months after the end of the useful life of the Facility.

C. During the County permit process, or if none, then prior to the commencement of construction, the Facility Owner shall file with the County a Deconstruction Plan. The Facility Owner shall file an updated Deconstruction Plan with the County on or before the end of the tenth year of commercial operation.

D. The Facility Owner shall provide the County with Financial Assurance to cover the estimated costs of Deconstruction of the Facility. Provision of this Financial Assurance shall be phased in over the first 11 years of the Project's operation as follows:

1. On or before the first anniversary of the Commercial Operation Date, the Facility Owner shall provide the County with Financial Assurance to cover ten (10) percent of the estimated costs of Deconstruction of the Facility as determined in the Deconstruction Plan.
2. On or before the sixth anniversary of the Commercial Operation Date, the Facility Owner shall provide the County with Financial Assurance to cover fifty (50) percent of the estimated costs of Deconstruction of the Facility as determined in the Deconstruction Plan.
3. On or before the eleventh anniversary of the Commercial Operation Date, the Facility Owner shall provide the County with Financial Assurance to cover one hundred (100) percent of the estimated costs of Deconstruction of the Facility as determined in the updated Deconstruction Plan provided during the tenth year of commercial operation.

The Financial Assurance shall not release the surety from liability until the Financial Assurance is replaced. The salvage value of the Facility may only be used to reduce the estimated costs of Deconstruction if the County agrees that all interests in the salvage value are subordinate or have been subordinated to that of the County if Abandonment occurs.

E. The County may, but is not required to, reevaluate the estimated costs of Deconstruction of any Facility after the tenth anniversary, and every five years thereafter, of the Commercial Operation Date. Based on any reevaluation, the County may require changes in the level of Financial Assurance used to calculate the phased Financial Assurance levels described in Section 17.D. required from the Facility Owner. If the County is unable to its satisfaction to perform the investigations necessary to approve the Deconstruction Plan filed by the Facility Owner, then the County and Facility may mutually agree on the selection of a Professional Engineer independent of the Facility Owner to conduct any necessary investigations. The Facility Owner shall be responsible for the cost of any such investigations.

F. Upon Abandonment, the County may take all appropriate actions for Deconstruction including drawing upon the Financial Assurance.

Concurrence of the Parties to this AIMA

The Illinois Department of Agriculture and TPE IL KE240, LLC concur that this AIMA is the complete AIMA governing the mitigation of agricultural impacts that may result from the Construction and Deconstruction of the solar farm project in Kendall County within the State of Illinois.

The effective date of this AIMA commences on the date of execution.

STATE OF ILLINOIS
DEPARTMENT OF AGRICULTURE

[redacted]

By: Jerry Costello II, Director

[redacted]

By Clay Nordsiek, Deputy General Counsel

801 E. Sangamon Avenue,
State Fairgrounds, POB 19281
Springfield, IL 62794-9281

4/10, 2024

TPE IL KE240, LLC

[redacted]

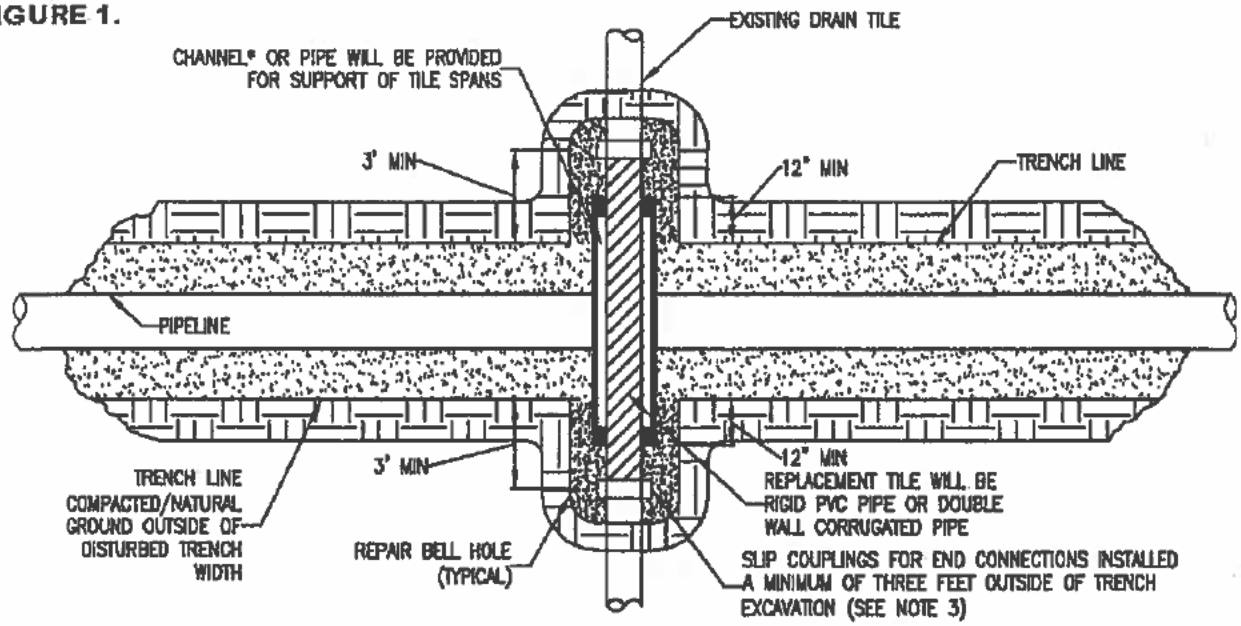
By James Marshall, Authorized Rep

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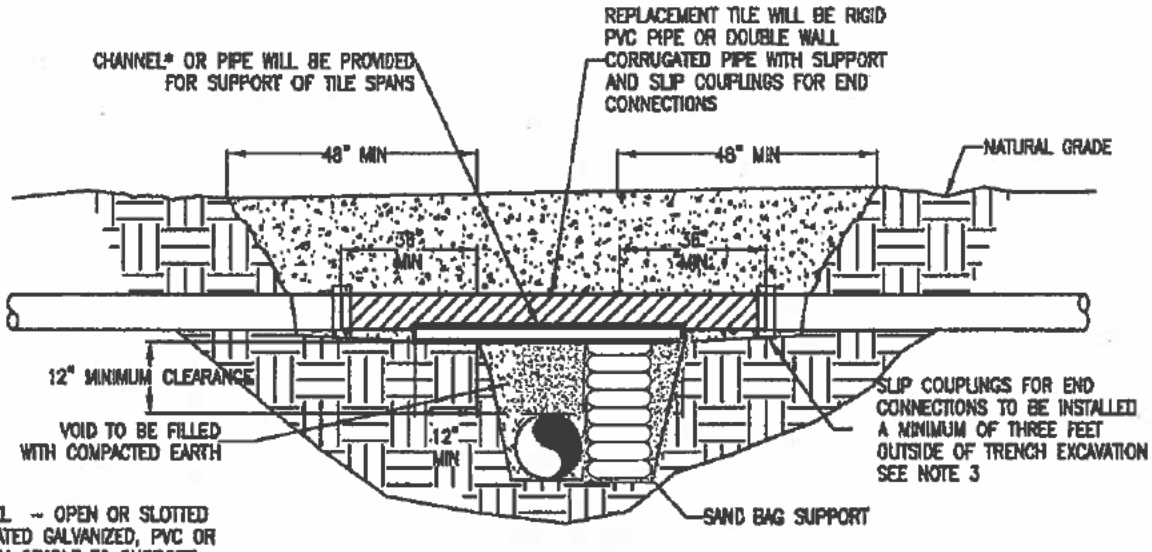
Address

March 19, 2024

FIGURE 1.



PLAN
N.T.S.



*CHANNEL – OPEN OR SLOTTED CORRUGATED GALVANIZED, PVC OR ALUMINUM CRADLE TO SUPPORT DRAIN TILE.

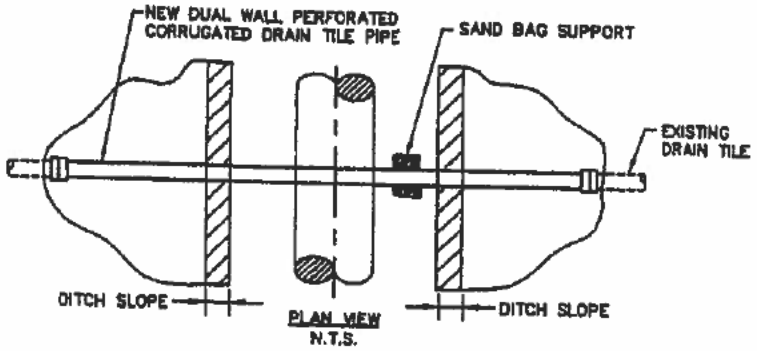
CROSS SECTION
N.T.S.

NOTE:

1. IMMEDIATELY REPAIR TILE IF WATER IS FLOWING THROUGH TILE AT TIME OF TRENCHING. IF NO WATER IS FLOWING AND TEMPORARY REPAIR IS DELAYED, OR NOT MADE BY THE END OF THE WORK DAY, A SCREEN OR APPROPRIATE 'NIGHT CAP' SHALL BE PLACED ON OPEN ENDS OF TILE TO PREVENT ENTRAPMENT OF ANIMALS ETC.
2. CHANNEL OR PIPE (OPEN OR SLOTTED) MADE OF CORRUGATED GALVANIZED PIPE, PVC OR ALUMINUM WILL BE USED FOR SUPPORT OF DRAIN TILE SPANS.
3. INDUSTRY STANDARDS SHALL BE FOLLOWED TO ENSURE PROPER SEAL OF REPAIRED DRAIN TILES.

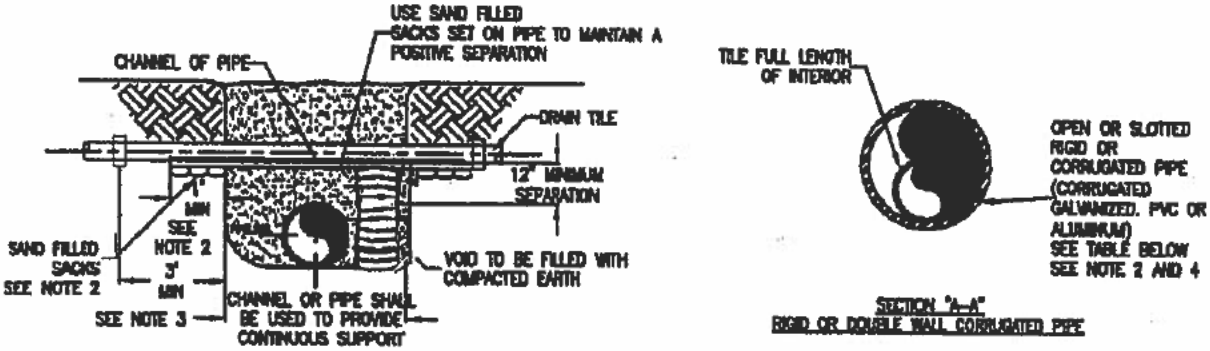
TEMPORARY DRAIN TILE REPAIR

FIGURE 2.



PLAN VIEW
N.T.S.

PLAN VIEW



SECTION "A-A"
RIGID OR DOUBLE WALL CORRUGATED PIPE

END VIEWS

MINIMUM SUPPORT TABLE			
TILE SIZE	CHANNEL SIZE	PIPE SIZE	
3"	4" @ 5.4 #/ft	4"	STD. WT.
4"-5"	5" @ 6.7 #/ft	6"	STD. WT.
6"-9"	7" @ 9.8 #/ft	8"-10"	STD. WT.
10"	10" @ 15.3 #/ft	12"	STD. WT.

NOTE:

1. TILE REPAIR AND REPLACEMENT SHALL MAINTAIN ORIGINAL ALIGNMENT GRADIENT AND WATER FLOW TO THE GREATEST EXTENT POSSIBLE. IF THE TILE NEEDS TO BE RELOCATED, THE INSTALLATION ANGLE MAY VARY DUE TO SITE SPECIFIC CONDITIONS AND LANDOWNER RECOMMENDATIONS.
2. 1'-0" MINIMUM LENGTH OF CHANNEL OR RIGID PIPE (OPEN OR SLOTTED CORRUGATED GALVANIZED, PVC OR ALUMINUM CRADLE) SHALL BE SUPPORTED BY UNDISTURBED SOIL, OR IF CROSSING IS NOT AT RIGHT ANGLES TO PIPELINE, EQUIVALENT LENGTH PERPENDICULAR TO TRENCH. SHIM WITH SAND BAGS TO UNDISTURBED SOIL FOR SUPPORT AND DRAINAGE GRADIENT MAINTENANCE (TYPICAL BOTH SIDES).
3. DRAIN TILES WILL BE PERMANENTLY CONNECTED TO EXISTING DRAIN TILES A MINIMUM OF THREE FEET OUTSIDE OF EXCAVATED TRENCH LINE USING INDUSTRY STANDARDS TO ENSURE PROPER SEAL OF REPAIRED DRAIN TILES INCLUDING SLIP COUPLINGS.
4. DIAMETER OF RIGID PIPE SHALL BE OF ADEQUATE SIZE TO ALLOW FOR THE INSTALLATION OF THE TILE FOR THE FULL LENGTH OF THE RIGID PIPE.
5. OTHER METHODS OF SUPPORTING DRAIN TILE MAY BE USED IF ALTERNATE PROPOSED IS EQUIVALENT IN STRENGTH TO THE CHANNEL/PIPE SECTIONS SHOWN AND IF APPROVED BY COMPANY REPRESENTATIVES AND LANDOWNER IN ADVANCE. SITE SPECIFIC ALTERNATE SUPPORT SYSTEM TO BE DEVELOPED BY COMPANY REPRESENTATIVES AND FURNISHED TO CONTRACTOR FOR SPANS IN EXCESS OF 20', TILE GREATER THEN 10" DIAMETER, AND FOR "HEADER" SYSTEMS.
6. ALL MATERIAL TO BE FURNISHED BY CONTRACTOR.
7. PRIOR TO REPAIRING TILE, CONTRACTOR SHALL PROBE LATERALLY INTO THE EXISTING TILE TO FULL WIDTH OF THE RIGHTS OF WAY TO DETERMINE IF ADDITIONAL DAMAGE HAS OCCURRED. ALL DAMAGED/DISTURBED TILE SHALL BE REPAIRED AS NEAR AS PRACTICABLE TO ITS ORIGINAL OR BETTER CONDITION.

PERMANENT DRAIN TILE REPAIR

April 19, 2024

Matthew H. Asselmeier, AICP, CFM
Director
Kendall County Planning, Building & Zoning
111 West Fox Street
Yorkville, IL 60560-1498

Dear Mr. Asselmeier,

I, Frankie J. Santoro, owner of parcel 03-26-300-006, approve of the Special Use Permit and Variance applications submitted by TPE IL KE240, LLC, and I authorize them to represent me on these applications.

Sincerely,

[redacted]

Frankie J. Santoro

[redacted]

John F. Argoudelis
PRESIDENT

Michelle Gibas
VILLAGE CLERK

TRUSTEES
Margie Bonuchi
Patricia T. Kalkanis
Richard Kiefer
Cally Larson
Tom Ruane
Brian Wojowski

January 22, 2024

Matt Asselmeier
Kendall County, IL
111 Fox Rd.
Yorkville, IL 60560

RE: SOLAR FARM DEVELOPMENT – 2080 SIMONS RD.

Mr. Asselmeier,

The Village of Plainfield has received correspondence from Turning Point Energy regarding the development of a solar farm located approximately at 2080 Simons Rd. This property does fall within the Plainfield planning jurisdiction.

As part of the Kendall County ordinance, the solar farm is required to complete a pre-annexation agreement with the Village as part of the approval process to proceed with the county development. The Village can process a pre-annexation as a condition of special use approval by Kendall County within 90 days of the County's special use permit approval.

As part of the review process, the Village would like to assume stormwater engineering review responsibilities working in conjunction with Kendall County.

If you have any further questions or concerns, please do not hesitate to contact the Village. Thank you for your continued coordination.

Sincerely,

[redacted]

Jake Melrose, AICP
Economic Development Director

Township Highway Access Permit

Application for Access to Township Roadway in Kendall County, Illinois

See Attached Highway Commissioner List for Appropriate Township

TO BE COMPLETED BY APPLICANT

Applicant Name (Print): TPE IL KE240, LLC P.I.N. #: 03-26-300-006

Address of Proposed Access (if available): Simons Road between Douglas Road and Gilmore Road

Subdivision Name: N/A Lot No: N/A

Mailing Address (if different): [redacted]

Phone: [redacted] Fax: _____ Email: [redacted]

Contractor Name: N/A Contractor Phone: N/A

I have read and understand all of the attached specifications and requirements for access installation at the proposed location. Inspections require 24-hour advance notification.

[redacted]
Applicant Signature

4/18/24
Date

TO BE COMPLETED BY ROAD DISTRICT #1044

Culvert Diameter (in). 12 Length (Minimum): 30' Type: CMP

Flared End Sections Required: No Saw Cut Barrier Curb Required: N/A

Additional Requirements: CULVERT TO EXTEND 3' ON EITHER SIDE OF THE DRIVEWAY

Application Approval

[redacted]
Township Road District Signature

Claude Ainsworth 4-22-21
Print Name Date

Final Construction Approval

_____
Township Road District Signature

_____ _____
Print Name Date

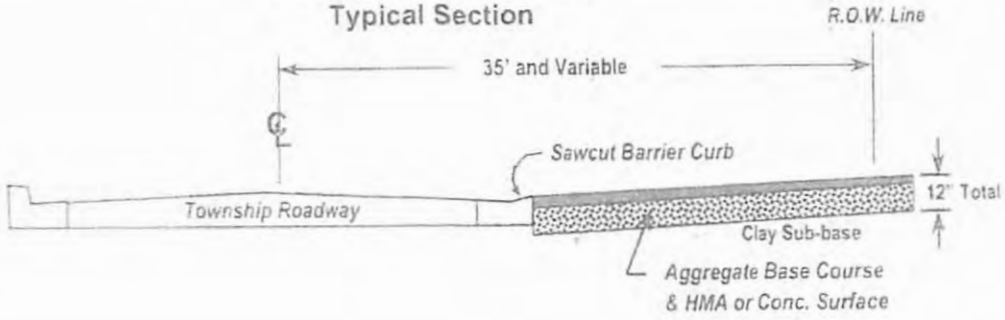
Rev. 2/2021

Access Specifications and Inspection Requirements

- For new homes, submit Application to Township Highway Commissioner prior to receiving building permit.
- If access is approved, install construction entrance first, using 3" aggregate prior to start of any excavation.
- Pipe Culverts (if required). Township will determine size, type, etc.
  1. Corrugated Metal Pipe (CMP) with flared end sections meeting IDOT specifications
  2. Reinforced Concrete Pipe (RCP) with concrete flared end sections meeting IDOT specs
- For roadways without curb, driveways must slope away from the edge of pavement (see typical).
- Contact Highway Commissioner for inspection of culvert installation and construction entrance.
- Remove all mud, dirt, debris from the roadway and keep right-of-way clear of obstructions.
- Mailbox installation shall meet USPS guidelines (attached).
- No trees, shrubs, irrigation piping, or landscaping materials may be placed in the right-of-way.
- Final Occupancy will not be granted until Final Construction Approval of access is received.

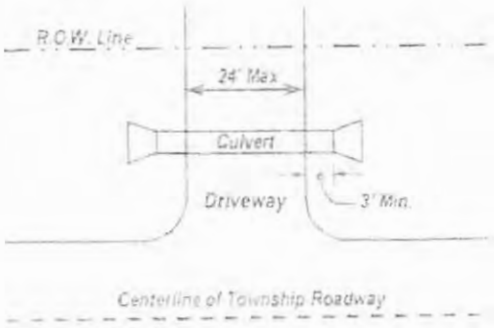
Roadways with Curb

Typical Section

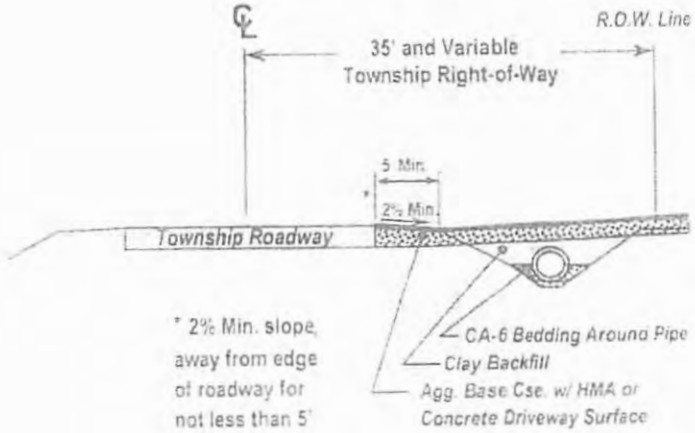


Roadways without Curb

Plan View



Typical Section







NORTH

GRAPHIC SCALE IN FEET
0 75 150 300

LEGEND

ROAD LABEL	N 2200TH ST
PROPERTY LINE / PROJECT BOUNDARY	
ADJACENT PROPERTY LINE (PER SURVEY)	
ADJACENT PROPERTY LINE (TRACED PER GIS)	
RIGHT OF WAY	R/W
SETBACK	
RESIDENTIAL DWELLING SETBACK	
EX. RESIDENCE/STRUCTURE	
EX. CONTOUR	
EX. OVERHEAD ELECTRIC	
EX. UTILITY POLE	
EX. ROAD CENTERLINE	
EX. FARMED WETLAND (PER LEVEL 1 DELINEATION BY KIMLEY-HORN)	
EX. WETLAND BUFFER (PER THE CITY PLAINFIELD CODE OF ORDINANCES 4-10-6-8)	
EX. NON-REGULATED WATERWAY (PER LEVEL 1 DELINEATION BY KIMLEY-HORN)	
EX. CULVERT	
EX. FLOW (DIRECTION AND SLOPE)	
PR. SECURITY FENCE	
PR. GATE	
PR. TEMPORARY LAYDOWN AREA	
PR. ACCESS ROAD	
PR. LANDSCAPE BUFFER	
PR. UNDERGROUND ELECTRIC	
PR. OVERHEAD ELECTRIC	
PR. UTILITY POLE	
PR. EQUIPMENT PAD	
PR. SOLAR ARRAY	
PR. PANEL LIMITS	
SOIL BOUNDARY	

SITE DATA TABLE

PIN #	03-26-300-008
PROPERTY OWNER	FRANKIE J. SANTORO
SITE ADDRESS	SIMONS RD, OSWEGO, IL 60543
LEGAL DESCRIPTION	SEC 26-37-8
ZONING JURISDICTION	KENDALL COUNTY
ZONING	A1 - AGRICULTURAL
CURRENT LAND USE	AGRICULTURAL FIELD
PROPOSED USE	COMMERCIAL SOLAR FIELD
TOTAL PARCEL AREA	73.07 ± AC
PRELIMINARY DISTURBED AREA	37.84 ± AC
PRELIMINARY SOLAR AREA	32.93 ± AC
RIGHT OF WAY SETBACK	50'
PROPERTY LINE SETBACK	50'
RESIDENTIAL SETBACK	150'

*ZONING SITE PLAN IS BEING SUBMITTED FOR SPECIAL USE PERMIT TO CONSTRUCT/OPERATE A SOLAR FARM

NOTES

1. THE PURPOSE OF THIS PLAN IS FOR SPECIAL USE PERMIT REVIEW AND APPROVAL BY KENDALL COUNTY TO CONSTRUCT A COMMERCIAL SOLAR FARM.
2. THIS PLAN WAS PRODUCED UTILIZING GIS RESOURCES, A PLAT OF SURVEY PREPARED BY LWS DATED 11/29/2023, AND INFORMATION FROM MULTIPLE SOURCES, INCLUDING KENDALL COUNTY GIS, GOOGLE EARTH, AND USGS TOPOGRAPHIC INFORMATION.
3. SUBJECT PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AS SHOWN ON THE FLOOD INSURANCE RATE MAP (COMMUNITY PANEL 17093C0070C) PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).
4. THE LOCATIONS OF PROPOSED IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO: FENCING, SOLAR ARRAY RACKING, INVERTER/TRANSFORMER PADS, OVERHEAD POLES AND LINES, ETC., SHOWN ARE APPROXIMATE AND ARE SUBJECT TO MODIFICATION DUE TO SITE CONDITIONS, ADDITIONAL PERMITTING REQUIREMENTS, EQUIPMENT SPECIFICATIONS, AND/OR OTHER CONSTRAINTS DURING FINAL ENGINEERING.
5. PROJECT AREA, INCLUDING CONSTRUCTION STAGING AREAS, WILL BE CLEARED AND GRUBBED AS NECESSARY, RETAINING PRE-DEVELOPMENT DRAINAGE PATTERNS TO THE BEST EXTENT POSSIBLE. CONSTRUCTION STAGING AND AREAS SUBJECT TO MATTING DURING CONSTRUCTION WILL BE TEMPORARILY STABILIZED WITH GRAVEL. SOIL CONDITIONS AND EQUIPMENT LOADS WILL DETERMINE FINAL DESIGN.
6. ALL DIMENSIONS SHOWN ARE AT 90 DEGREES UNLESS OTHERWISE NOTED.
7. CONTRACTOR SHALL CALL AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. ADDITIONALLY, CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATION SERVICES.
8. CONTRACTOR SHALL MAINTAIN ACCESS AND UTILITY SERVICES TO ANY REMAINING BUILDING(S) OR ADJACENT BUILDING(S) THROUGHOUT THE DEMOLITION AND CONSTRUCTION PHASES. EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED/RESTORED TO THE SATISFACTION OF THE OWNER BY THE CONTRACTOR RESPONSIBLE FOR THE DAMAGE.
9. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE TO PROVIDE SIGNS, BARRICADES, WARNING LIGHTS, GUARD RAILS, AND EMPLOY FLAGGERS AS NECESSARY WHEN CONSTRUCTION ENDANGERS EITHER VEHICULAR OR PEDESTRIAN TRAFFIC. THESE DEVICES SHALL REMAIN IN PLACE UNTIL THE TRAFFIC MAY PROCEED NORMALLY AGAIN.
10. SITE WILL HAVE NO DEDICATIONS FOR OPEN SPACE, NATURAL AREA, HISTORIC BUILDING(S)/STRUCTURE(S), OR STORMWATER MANAGEMENT FACILITIES.
11. SITE WILL NOT INCLUDE WATER SOURCE OR SEWAGE DISPOSAL. APPROXIMATE LOCATION OF EXISTING WATER WELL LOCATIONS SHOWN PER THE ILLINOIS WATER WELL INTERACTIVE MAP ONLINE.
12. STORMWATER MANAGEMENT FACILITIES TO BE PROVIDED AS REQUIRED BY COUNTY AND/OR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITTING REQUIREMENTS TO BE DETERMINED DURING FINAL ENGINEERING.
13. THE MAXIMUM HEIGHTS OF ANY SOLAR PANEL SHALL NOT EXCEED 20 FEET.
14. SOLAR PANELS WILL BE DESIGNED WITH ANTI-REFLECTIVE COATING TO MINIMIZE GLARE.
15. COLLECTION LINES WITHIN THE SOLAR FARM WILL BE LOCATED AND MAINTAINED UNDERGROUND.
16. THERE SHALL BE NO EXTERIOR LIGHTING.
17. SETBACKS SHOWN ON THIS PLAN ARE BASED ON KENDALL COUNTY CODE OF ORDINANCES, SECTION 7:00.D.17.
18. ALL NECESSARY PERMITS FOR SOIL EROSION CONTROL AND DRIVEWAY CONSTRUCTION WILL BE OBTAINED AS PART OF FINAL ENGINEERING AND PRIOR TO CONSTRUCTION.
19. LEVEL 1 WETLAND DELINEATION PERFORMED BY KIMLEY-HORN DATED 02/13/2024.
20. THE WETLAND BUFFER WAS DETERMINED BASED ON THE PLAINFIELD CODE OF ORDINANCES SECTION 4-10-6-8. STATES THAT THERE NEEDS TO BE A NATURAL VEGETATION STRIP OF AT LEAST 25 FEET. PER SECTION 400, WILL NEED A SITE DEVELOPMENT PERMIT.

SOILS DATA TABLE

MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC SOIL GROUP
56A	LISBON SILT LOAM, 0 TO 2 PERCENT SLOPES	C/D
60C3	LA ROSE SILT LOAM, 5 TO 10 PERCENT SLOPES	C
60C3	LA ROSE CLAY LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED	C
152A	DRUMMER SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES	B/D
356A	ELPASO SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES	B/D
442A	MUNDELEIN SILT LOAM, 0 TO 2 PERCENT SLOPES	B/D
54IB	GRAYMONT SILT LOAM, 2 TO 5 PERCENT SLOPES	C

NO.	REVISION 1	03/28/2024
	REVISIONS	DATE

TurningPoint Energy

Kimley»Horn
© 2024 KIMLEY-HORN AND ASSOCIATES, INC.
10 EAST DOTY STREET, SUITE 800
MADISON, WI 53703 (608) 251-0417
WWW.KIMLEY-HORN.COM

KHA PROJECT 268173044
DATE 02/19/2024
SCALE AS SHOWN
DESIGNED BY MPR
DRAWN BY DC
CHECKED BY AH

TPE IL KE240, LLC
KENDALL COUNTY, IL

ZONING SITE PLAN

SHEET NUMBER
Z1.0

From: Oswego Township Road District
To: Gloria Foxman
Subject: RE: [EXTERNAL] RE: [EXTERNAL] Access Driveway and Road Use Agreement Inquiry
Date: Monday, April 22, 2024 9:49:40 AM
Attachments: image001.png
image002.png
04-22-2024 Simons Road.pdf

Caution: External

Good morning,
Attached is your approved access permit.
The highway commissioner said that we do not require the Road Use Agreement.
Thank you,

Jen Bonesz
Administrative Assistant
Oswego Township Road District
1150 Rt 25, Oswego, IL 60543
Phone: 630.264.4587
Fax: 630.264.6695

From: Gloria Foxman [redacted]>
Sent: Friday, April 19, 2024 12:05 AM
To: Oswego Township Road District <mailbox@oswegotownship.org>
Subject: [EXTERNAL] RE: [EXTERNAL] Access Driveway and Road Use Agreement Inquiry

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Apologies! This message was sorted out of my inbox. The Access Permit application is attached to this email, along with our current site plan. I will call Claude back to tomorrow to discuss.
To clarify, Kendall County has asked that we obtain a Road Use Agreement as well as an Access Permit, if required. Based on your email, it sounds like Oswego Township does not require a Road Use Agreement. Can you please respond to confirm that Oswego Township Road District does not require a Road Use Agreement?

Many thanks,
Gloria

From: Oswego Township Road District <mailbox@oswegotownship.org>
Sent: Monday, March 25, 2024 11:17 AM
To: Gloria Foxman <[redacted]>
Subject: Re: [EXTERNAL] Access Driveway and Road Use Agreement Inquiry

Caution: External

Good morning,
Attached is the access permit application from Oswego Township.
Claude, the Highway Commissioner, tried calling but was unable to leave a message on your voicemail. Feel free to call back at your convenience.
As mentioned, this permit is for the Right of Way access only, all other permits will need to be obtained from Kendall County.
Thank you ,

Jen Bonesz
Administrative Assistant
Oswego Township Road District
1150 Rt 25, Oswego, IL 60543
Phone: 630.264.4587
Fax: 630.264.6695

Get Outlook for iOS

From: Gloria Foxman [redacted]>
Sent: Friday, March 22, 2024 1:23:01 PM
To: Oswego Township Road District <mailbox@oswegotownship.org>
Subject: [EXTERNAL] Access Driveway and Road Use Agreement Inquiry

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon! I wanted to reach out about a potential access driveway and road use agreement for a proposed solar project on Simons Road east of Douglas Road, Parcel 03-26-300-006. A draft site plan is below, which shows the southern half of that parcel. Could you please let me know the process for these permissions and any forms necessary? I appreciate it.

Many thanks,
Gloria



Gloria Foxman
Development Manager
TurningPoint Energy
development - advisory - investment
[redacted] | https://turningpoint-energy.com | [redacted]

Matt Asselmeier

From: Alec Keenum <akeenum@oswegofire.com>
Sent: Tuesday, May 7, 2024 7:06 AM
To: Matt Asselmeier
Subject: [External]RE: Kendall County Petition 24-13

CAUTION - This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Thanks Matt,

Normal stuff, Oswego FD does not have issue with the Special Use. Shall be noted that:

- Default is sprinkler & fire alarm protection for new construction of any buildings

Regards,

Capt. Alec J Keenum
Fire Marshal
Oswego Fire Protection District

From: Matt Asselmeier <masselmeier@kendallcountyil.gov>
Sent: Wednesday, May 1, 2024 12:57 PM
To: Alec Keenum <akeenum@oswegofire.com>; Claude Ainsworth (cainsworth@oswegotownship.com) <cainsworth@oswegotownship.com>; Joe West (jwest@oswegotownship.com) <jwest@oswegotownship.com>; FireChief <firechief@oswegofire.com>; Ken Holmstrom <kholmstrom@oswegotownship.com>; Jake Melrose <jmelrose@goplainfield.com>; jproulx@goplainfield.com; Michelle Gibas <mgibas@goplainfield.com>
Subject: Kendall County Petition 24-13

To All:

The Kendall County ZPAC will meet on Tuesday, May 7th, at 9:00 a.m., in the County Boardroom, at 111 W. Fox Street, Yorkville, to consider the following Petition:

1. **Petition 24 – 13 – James C. Marshall on Behalf of TurningPointEnergy, LLC Through TPE IL KE240 (Tenant) and Frank J. Santoro (Owner)**

Request: Special Use Permit for a Commercial Solar Energy Facility and Variance to Section 7:01.D.17.a of the Kendall County Zoning Ordinance to Allow a Commercial Solar Energy Facility on Land within One Point Five (1.5) Miles of Municipality without an Annexation Agreement
PIN: 03-24-400-011
Location: East of 2025 Simons Road, Oswego in Oswego Township
Purpose: Petitioner Would Like to Install a Commercial Solar Energy Facility; Property is Zoned A-1

Petition information can be found here,
https://link.edgepilot.com/s/a050e014/hTaf91Apmk_aTNW3neBF7w?u=https://www.kendallcountyil.gov/home/showpublisheddocument/30231

The Petitioner's contact can be reached here, gfoxman@tpoint-e.com.

ZONING, PLATTING & ADVISORY COMMITTEE (ZPAC)
May 7, 2024 – Unapproved Meeting Minutes

PBZ Chairman Seth Wormley called the meeting to order at 9:00 a.m.

Present:
Matt Asselmeier – PBZ Department
Meagan Briganti – GIS Department
David Guritz – Forest Preserve (Arrived at 9:02 a.m.)
Brian Holdiman – PBZ Department
Fran Klaas – Highway Department
Commander Jason Langston – Sheriff's Department
Alyse Olson – Soil and Water Conservation District (Arrived at 9:02 a.m.)
Aaron Rybski – Health Department
Seth Wormley – PBZ Committee Chair

Absent:
Greg Chismark – WBK Engineering, LLC

Audience:
Tim O'Brien, Pete Fleming, Michael Korst, Jim Filotto, Ryan Solum, Bruce Miller, Alex Schuster, and Gloria Foxman

PETITIONS

Petition 24-13 James C. Marshall on Behalf of TurningPointEnergy, LLC Through TPE IL KE240 (Tenant) and Frank J. Santoro (Owner)

Mr. Asselmeier summarized the request.

The Petitioner is seeking a special use permit for a commercial solar energy facility and a variance to Section 7:01.D.17.a of the Kendall County Zoning Ordinance to allow a commercial solar energy facility on land within one point five (1.5) miles of municipality without an annexation agreement.

The application materials were provided.

The property was located east of 2025 Simons Road.

The entire property was approximately seventy-three (73) acres in size. The fenced area was approximately thirty-eight (38) acres in size.

The existing land use is Agricultural.

The County's Future Land Use Map called for the property to be Rural Residential. The Village of Plainfield's Future Land Use Map called for the property to be Countryside Residential.

Simons Road is a Local Road maintained by Oswego Township.

The Village of Plainfield has a trail planned along Simons Road.

There are no floodplains on the property. There are two (2) farmed wetlands in the vicinity of the proposed use.

The adjacent land uses were Agricultural, Farmstead, Single-Family Residential, and Public/Institutional (Cemetery).

The County's Future Land Use Map called for the area to be Rural Residential and Suburban Residential. The Village of Plainfield's Future Land Use Map called for the area to be Low Density Residential, Medium Density Residential, and Countryside Residential.

Properties within one half (1/2) mile were zoned A-1, A-1 SU, R-1, and R-3 in the County and R-1 an R-1 PUD in the Village of Plainfield.

EcoCAT Report was submitted on September 27, 2023, and consultation was terminated, see Appendix F of the application.

The LESA Score for the property was 227 indicated a high level of protection. The NRI Report is included as Appendix E of the application.

Petition information was sent to Oswego Township on May 1, 2024. Prior to formal application submittal, Oswego Township submitted an email requesting a thirty-thirty foot (33') deep right-of-way dedication from the center of Simons Road and a road use agreement. The Petitioner already secured an access permit, see Appendix Y of the Application

Petition information was sent to the Village of Plainfield on May 1, 2024. Prior to formal application submittal, the Village of Plainfield submitted a letter stating they will pursue an annexation agreement after the County reviews the application, see Appendix X.

Petition information was sent to the Oswego Fire Protection District on May 1, 2024. The Oswego Fire Protection District submitted an email expressing no objections to the request.

Per Section 7:01.D.17 of the Kendall County Zoning Ordinance, commercial solar energy facilities businesses can be special uses on A-1 zoned property subject to the following conditions:

a. All commercial solar energy facilities and test solar energy systems located within one point five (1.5) miles of a municipality shall either annex to the municipality or obtain an annexation agreement with the municipality requiring the municipality's regulations to flow through the property. Petitioner is requesting a variance. Pre-annexation likely within ninety (90) days of approval of the special use permit, see Appendix X of the Application.

b. The setbacks for commercial solar energy facilities shall be measured from the nearest edge of any component of the facility as follows:

   Occupied Community Buildings or Dwellings on Nonparticipating Properties-One hundred fifty feet (150') from the nearest point on the outside wall of the structure

   Boundary Lines of Participating Properties-None

   Boundary Lines of Nonparticipating Properties- Fifty feet (50') to the nearest point on the property line of the nonparticipating property

   Public Road Rights-Of-Way-Fifty feet (50') from the nearest edge

   The above setbacks do not exempt or excuse compliance with electric facility clearances approved or required by the National Electrical Code, the National Electrical Safety Code, Commerce Commission, Federal Energy Regulatory Commission, and their designees or successors. Per the site plan, see Appendix I, the commercial solar energy facility is greater than one hundred fifty feet (150') from the closest non-participating structure. The perimeter fence is setback fifty feet (50') from the adjoining property line and road, except where the farmed wetlands are located (in which cases the setbacks are larger). The panels are twenty feet (20') from the fences on the north, west, and east side of the property and thirty feet (30') from the fence to the south.

c. A commercial solar energy facility's perimeter shall be enclosed by fencing having a height of at least six feet (6') and no more than twenty-five feet (25'). This is true. Per the site plan, see Appendix I, the fence seven feet (7') in height.

d. No component of a solar panel as part of a commercial solar energy facility shall have a height of more than twenty feet (20') above ground when the solar energy facility's arrays are at full tilt. Petitioner indicated that this is correct, see Appendix B, Page 8.

e. The above setback, fencing, and component height requirements may be waived subject to written consent of the owner of each affected nonparticipating property. This written consent shall be submitted at the time of application submittal. No such consent requested or needed.

f. Sound limitations for components in commercial solar energy facilities shall follow the sound limitations established by the Illinois Pollution Control Board. Petitioner indicated that they will follow these limitations, see Appendix R regarding the noise study.

g. The County shall not require standards for construction, decommissioning, or deconstruction of a commercial solar energy system or related financial assurances to be more restrictive than agricultural impact mitigation agreement set in State law. The amount of any decommissioning payment shall be limited to the cost identified in the

decommissioning or deconstruction plan, as required by the agricultural impact mitigation agreement, minus the salvage value of the project. A copy of the agricultural impact mitigation agreement shall be submitted with the application materials. The decommissioning plan is included as Attachment O. As noted on page 5 of Attachment O, the decommissioning bond is set at One Hundred Thirty-One Thousand, Seven Hundred Six-Nine Dollars and Twelve Cents ($131,769.12). The payment of the bond is outlined in the Agricultural Impact Mitigation Agreement (AIMA) on page 11 of Appendix V.

h. A vegetative screening shall be placed around the commercial solar energy facility. The landscaping plan was provided as Appendix J. An open area pollinator seed mix is purposed around the perimeter of the property. The performance standards and ground cover maintenance requirements were included in the landscaping plan.

i. Commercial solar energy facility applicants shall provide the results and recommendations from consultations with the Illinois Department of Natural Resources obtained through the Ecological Compliance Assessment Tool (EcoCat) or a comparable successor tool. The commercial solar energy facility applicant shall adhere to the recommendations provided through this consultation. The EcoCat was submitted and consultation was terminated without any specific recommendations.

j. Commercial solar energy facility applicants shall provide the results of the United States Fish and Wildlife Service's Information for Planning and Consulting environmental review or a comparable successor toll that is consistent with the U.S. Fish and Wildlife Service's Land-Based Wind Energy Guidelines and any applicable United States Fish and Wildlife Service solar wildlife guidelines that have been subject to public review. This was provided starting as Page 34 in Appendix L. The Indiana bat, tricolored bat, whooping crane, monarch butterfly, and eastern prairie fringed orchid were in the area. No impacts were anticipated.

k. A facility owner shall demonstrate avoidance of protected lands as identified by the Illinois Department of Natural Resources and the Illinois Nature Preserve Commission or consider the recommendations of the Illinois Department of Natural Resources for setbacks from protected lands, including areas identified by the Illinois Nature Preserve Commission. This is true. The site is designed around the farmed wetlands.

l. A facility owner shall provide evidence at the time of application submittal of consultation with the Illinois State Historic Preservation Office to assess potential impacts on State-registered historic sites under applicable State law. No potential impacts to State-registered historic sites exists, see Appendix M.

m. A commercial solar energy facility owner shall plant, establish, and maintain for the life of the facility vegetative ground cover consistent with State law and the guidelines of the Illinois Department of Natural Resources' vegetative management plans. The vegetation management plan shall be required at the time of application submittal. The vegetation management plan is included as part of the landscaping, including timelines for planting and maintenance of the vegetation, see Appendix J.

n. The facility owner shall enter into a road use agreement with the jurisdiction having control over the applicable roads. The road use agreement shall follow applicable law. The facility owner shall supply the Kendall County Planning, Building and Zoning Department with a copy of the road use agreement. This provision shall be waived if the jurisdiction having control over the applicable roads does not wish to enter into an agreement. As of the date of this memo, the road use agreement negotiations are ongoing. The transportation and access plan was provided as Appendix U.

o. The facility owner shall repair or pay for the repair of all damage to the drainage system caused by the construction of the commercial solar energy system within a reasonable time after construction of the commercial solar energy facility is complete. The specific time shall be set in the special use permit. No information was provided regarding drain tile. A drain tile survey is required, per the AIMA.

No buildings are planned for the site. Any structures proposed for the site, including the solar arrays, shall obtain applicable permits.

The property is presently farmland. No wells, septic systems, or refuse collection points were identified.

The Petitioner submitted an application for a stormwater permit. Also, the Petitioner is designing the site per the Village of Plainfield's regulations.

The Petitioner provided groundwater studies, see Appendix S.

Per the site plan (Appendix I), the Petitioner's propose one (1) thirty foot (20') wide access road. Oswego Township has granted an access permit.

The Petitioner is agreeable to right-of-way dedication and the Petitioner submitted a transportation and access plan.

No parking is proposed.

No lighting was proposed.

Per Appendix B, Page 8, a warning sign will be placed at the facility entrance and along the perimeter fence. These signs shall include address of the subject property and a twenty-four (24) hour emergency contact phone number.

The Petitioner provided a glare study, see Appendix Q.

The Petitioner provided a property values study, Appendix T.

No odors were foreseen.

If approved, this would be the second special use permit for a commercial solar energy facility in unincorporated Kendall County.

The proposed Findings of Fact for the special use permit were as follows:

The establishment, maintenance, or operation of the special use will not be detrimental to or endanger the public health, safety, morals, comfort, or general welfare. The Project will generate clean, renewable electricity while producing no air, noise, or water pollution, or ground contamination. The landscape buffer and existing vegetation around the site will be provided and preserved to screen the project from the view of neighbors and roads. The Petitioner proposes to use pollinator-friendly ground cover underneath the Project and native plantings around the perimeter. These include clover and grass species that promote the establishment and long-term health of bee populations. The Petitioner submitted a landscaping plan outlining the types of vegetation that will be planted, the timing of planting, and a maintenance plan for the vegetation. The Petitioner provided a report regarding the proposed landscaping plan and water quality. In addition, the proposal will promote the general welfare of Kendall County by supplying new jobs, new tax revenue and will be a source of generation of sustainable, clean, pollution-free renewable electricity.

The special use will not be substantially injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted, nor substantially diminish and impair property values within the neighborhood. The Zoning classification of property within the general area of the property in question shall be considered in determining consistency with this standard. The proposed use makes adequate provisions for appropriate buffers, landscaping, fencing, lighting, building materials, open space and other improvements necessary to insure that the proposed use does not adversely impact adjacent uses and is compatible with the surrounding area and/or the County as a whole. The proposal will not interfere with the use and enjoyment of nearby properties. The surrounding properties are zoned primarily A-1 and will not be prevented from continuing any existing use or from pursuing future uses. The proposal's operations would be quiet and would utilizing pollinator friendly seeding, native plants, and vegetative screening. The landscape buffer will reduce any visual impact on neighbors who live nearby. The Petitioner provided a property value study showing no impact to the values of property near these types of projects.

Adequate utilities, access roads and points of ingress and egress, drainage, and/or other necessary facilities have been or are being provided. The proposal will have adequate utility interconnections designed in collaboration with ComEd. The proposal does not require water, sewer, or any other public utility facilities to operate. The Petitioner will also build all roads and entrances at the facility and will enter into an agreement with Oswego Township regarding road use. After initial construction traffic, landscape maintenance and maintenance to the Project components are anticipated to occur on an as-needed basis, consistent with the Landscaping Plan. Existing traffic patterns will not be impacted in the post-construction operations phase. A drain tile survey will be completed prior to construction and foundation design will work around or reroute any identified drain tiles to ensure proper drainage. The Project will also be designed in a manner that will not materially modify existing water drainage patterns around its facilities.

The special use shall in all other respects conform to the applicable regulations of the district in which it is located, except as such regulations may in each instance be modified by the County Board pursuant to the recommendation of the Zoning Board of Appeals. If the requested variance is granted, the proposal meets all applicable regulations.

The special use is consistent with the purpose and objectives of the Land Resource Management Plan and other adopted County or municipal plans and policies. The proposal is also consistent with a goal and objective found on page 3-34 of the Land Resource Management Plan, "Support the public and private use of sustainable energy systems (examples include wind, solar, and geo-thermal)."

The proposed Findings of Fact for the variance were as follows:

The particular physical surroundings, shape, or topographical condition of the specific property involved would result in a particular hardship or practical difficulty upon the owner if the strict letter of the regulations were carried out. The subject property is located within one point five (1.5) miles of the Village of Plainfield. The Village of Plainfield provided a letter stating they will enter into a pre-annexation agreement in the future.

The conditions upon which the requested variation is based would not be applicable, generally, to other property within the same zoning classification. Other A-1 zoned properties within one point five (1.5) miles of a municipality could request a similar variance, if the municipality refuses to annex or enter into a pre-annexation agreement.

The alleged difficulty or hardship has not been created by any person presently having an interest in the property. The difficulty was created because the Village of Plainfield did not wish to enter into a pre-annexation agreement or annex the property in a timely manner before application submittal.

The granting of the variation will not materially be detrimental to the public welfare or substantially injurious to other property or improvements in the neighborhood in which the property is located. Granting the variance would not be detrimental to the public or substantially injurious to other properties.

That the proposed variation will not impair an adequate supply of light and air to adjacent property, or substantially increase the congestion in the public streets or increase the danger of fire, or endanger the public safety or substantially diminish or impair property values within the neighborhood. The proposed variance would not impair light or air on adjacent property, cause congestion, increase the danger of fire, or negatively impact property values.

Staff recommended approval of the requested special use permit and variance subject to the following conditions and restrictions. To date, the Petitioner has not agreed to these conditions and restrictions:

1. The site shall be developed substantially in accordance with the submitted site plan (Appendix I), landscaping plan, (Appendix J), operations and management plan (Appendix N), decommissioning plan, (Appendix O), road access plan (Appendix U), and Agricultural Impact Mitigation Agreement (Appendix V).
2. Within ninety (90) days of the approval of the special use permit, the owners of the subject property shall dedicate a strip of land thirty-three feet (33') in depth along the southern property line to Oswego Township. The Kendall County Planning, Building and Zoning Committee may grant an extension to this deadline.
3. Within ninety (90) days of the approval of the special use permit, the owner of the subject property shall enter into a pre-annexation agreement with the Village of Plainfield. The Kendall County Planning, Building and Zoning Committee may grant an extension to this deadline.
4. None of the vehicles or equipment parked or stored on the subject property allowed by the special use permit shall be considered agricultural vehicles or agricultural equipment.
5. All of the vehicles and equipment stored on the subject property allowed by the special use permit shall be maintained in good condition with no deflated tires and shall be licensed if required by law.
6. Any structures, included solar arrays, constructed, installed, or used allowed by this special use permit shall not be considered for agricultural purposes and must secure applicable building permits.
7. One (1) warning sign shall be placed at the facility entrance and one (1) warning sign shall be placed along the perimeter fence. These signs shall include, at minimum, the address of the subject property and a twenty-four (24) hour emergency contact phone number. Additional signage may be installed, if required by applicable law.

8. The operators of the use allowed by this special use permit acknowledge and agree to follow Kendall County's Right to Farm Clause.

9. The property owner and operator of the use allowed by this special use permit shall follow all applicable Federal, State, and Local laws related to the operation of this type of use.

10. Failure to comply with one or more of the above conditions or restrictions could result in the amendment or revocation of the special use permit.

11. If one or more of the above conditions is declared invalid by a court of competent jurisdiction, the remaining conditions shall remain valid.

12. This special use permit and variance shall be treated as a covenant running with the land and is binding on the successors, heirs, and assigns as to the same special use conducted on the property.

Mr. Klaas requested clarification on Plainfield's position on the annexation. Mr. Asselmeier said Plainfield did not want to process the application and the Village wanted the County to review the Petition. The Petitioner provided a letter from Plainfield regarding annexation. This would be a Chatham annexation because Plainfield was not contiguous.

Mr. Asselmeier asked if the property owner was agreeable to the conditions. Gloria Foxman said the property owner was aware and agreeable to some of the conditions. She offered to get written confirmation of the property owner's agreement to the conditions.

Mr. Asselmeier asked possibly upgrading the solar panels over the life of the project. Ms. Foxman said removal of the solar panels were not likely.

Mr. Klaas recommended a forty foot (40') right-of-way dedication. Ms. Foxman agreed to this change.

Ms. Olson asked about inspections for cracked panels. Ms. Foxman said the solar field would be monitored remotely and regular inspections would occur.

Mr. Asselmeier noted that some neighbors were concerned about property values, drainage, and influx of energy. Ms. Foxman said a drain tile survey would occur and that information was necessary when designing the project.

Mr. Guritz noted that herbicides would not be used per the vegetation management plan. Ms. Foxman said they were trying to follow the pollinator scorecard. They would follow noxious weed laws. Someone would be hired to maintain the vegetation.

Mr. Klaas asked if rock or stone would be beneath the panels. Ms. Foxman said the area would be planted with low growth pollinator friendly plants under the solar panels.

Construction would start in 2025, assuming all approvals occurred.

Ms. Olson asked about the length of the construction process. Ms. Foxman responded twelve to eighteen (12-18) months, but that timeframe is not solid construction.

Mr. Guritz made a motion, seconded by Mr. Holdiman, to forward the proposal to the Regional Planning Commission with a change to the right-of-way dedication amount.

The votes were follows:
Ayes (9): Asselmeier, Briganti, Guritz, Holdiman, Klaas, Langston, Olson, Rybski, and Wormley
Nays (0): None
Abstain (0): None
Absent (1): Chismark

The motion passed.

The proposal goes to the Kendall County Regional Planning Commission on May 22, 2024.

PUBLIC COMMENT

None

ADJOURNMENT

Mr. Guritz made a motion, seconded by Mr. Rybski, to adjourn.

With a voice vote of nine (9) ayes, the motion carried.

The ZPAC, at 9:54 a.m., adjourned.

Respectfully Submitted,
Matthew H. Asselmeier, AICP, CFM
Director

Enc.

#1

KENDALL COUNTY
ZONING & PLATTING ADVISORY COMMITTEE
MAY 7, 2024

IF YOU WOULD LIKE TO BE CONTACTED ON FUTURE MEETINGS REGARDING THIS TOPIC, PLEASE PROVIDE YOUR ADDRESS OR EMAIL ADDRESS

NAME	ADDRESS (OPTIONAL)	EMAIL ADDRESS (OPTIONAL)
Jim O'Brien	[redacted]	
Pete Fleming		
Michael Kost		
Jim Filotto		
Ryan Solum		
BRUCE MILLER		
ALEX Schuster		

Matt Asselmeier

From: Alec Keenum <akeenum@oswegofire.com>
Sent: Tuesday, May 7, 2024 7:06 AM
To: Matt Asselmeier
Subject: [External]RE: Kendall County Petition 24-13

CAUTION - This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Thanks Matt,

Normal stuff, Oswego FD does not have issue with the Special Use. Shall be noted that:

- Default is sprinkler & fire alarm protection for new construction of any buildings

Regards,

Capt. Alec J Keenum
Fire Marshal
Oswego Fire Protection District

From: Matt Asselmeier <masselmeier@kendallcountyil.gov>
Sent: Wednesday, May 1, 2024 12:57 PM
To: Alec Keenum <akeenum@oswegofire.com>; Claude Ainsworth (cainsworth@oswegotownship.com) <cainsworth@oswegotownship.com>; Joe West (jwest@oswegotownship.com) <jwest@oswegotownship.com>; FireChief <firechief@oswegofire.com>; Ken Holmstrom <kholmstrom@oswegotownship.com>; Jake Melrose <jmelrose@goplainfield.com>; jproulx@goplainfield.com; Michelle Gibas <mgibas@goplainfield.com>
Subject: Kendall County Petition 24-13

To All:

The Kendall County ZPAC will meet on Tuesday, May 7th, at 9:00 a.m., in the County Boardroom, at 111 W. Fox Street, Yorkville, to consider the following Petition:

1.	**Petition 24 – 13 – James C. Marshall on Behalf of TurningPointEnergy, LLC Through TPE IL KE240 (Tenant) and Frank J. Santoro (Owner)**
Request:	Special Use Permit for a Commercial Solar Energy Facility and Variance to Section 7:01.D.17.a of the Kendall County Zoning Ordinance to Allow a Commercial Solar Energy Facility on Land within One Point Five (1.5) Miles of Municipality without an Annexation Agreement
PIN:	03-24-400-011
Location:	East of 2025 Simons Road, Oswego in Oswego Township
Purpose:	Petitioner Would Like to Install a Commercial Solar Energy Facility; Property is Zoned A-1

Petition information can be found here,
https://link.edgepilot.com/s/a050e014/hTaf91Apmk_aTNW3neBF7w?u=https://www.kendallcountyil.gov/home/showpublisheddocument/30231

The Petitioner's contact can be reached here, gfoxman@tpoint-e.com.

KENDALL COUNTY
REGIONAL PLANNING COMMISSION

Kendall County Office Building
Rooms 209 and 210
111 W. Fox Street, Yorkville, Illinois

Unapproved - Meeting Minutes of May 22, 2024 - 7:00 p.m.

Chairman Bill Ashton called the meeting to order at 7:00 p.m.

ROLL CALL
Members Present: Bill Ashton, Eric Bernacki, Tom Casey, Dave Hamman (Arrived at 7:08 p.m.), Larry Nelson, Ruben Rodriguez, Claire Wilson, and Seth Wormley (Arrived at 7:40 p.m.)
Members Absent: Karin McCarthy-Lange and Bob Stewart
Staff Present: Matthew H. Asselmeier, Director, and Wanda A. Rolf, Office Assistant
Others Present: Tim O'Brien, Dave Koehler, Joan Soltwisch, Marcia Rousonelo, Ray Jackinowski, Kyle Barry, Erin Bowen, Katherine Carlson, Tom Huddleston, Paul Yearsley, Joy Lieser, Greg Henderson, Carrie Kennedy, Andrew Daylor, Kristine Henderson, Michael Korst, Bruce Miller, and Gloria Foxman

Petition 24-13 James C. Marshall on Behalf of TurningPointEnergy, LLC Through TPE IL KE240 (Tenant) and Frank J. Santoro (Owner)
Mr. Asselmeier summarized the request.

The Petitioner is seeking a special use permit for a commercial solar energy facility and a variance to Section 7:01.D.17.a of the Kendall County Zoning Ordinance to allow a commercial solar energy facility on land within one point five (1.5) miles of municipality without an annexation agreement.

The application materials were provided.

The property was located east of 2025 Simons Road.

The entire property was approximately seventy-three (73) acres in size. The fenced area was approximately thirty-eight (38) acres in size.

The existing land use is Agricultural.

The County's Future Land Use Map called for the property to be Rural Residential. The Village of Plainfield's Future Land Use Map called for the property to be Countryside Residential.

Simons Road is a Local Road maintained by Oswego Township.

The Village of Plainfield has a trail planned along Simons Road.

There are no floodplains on the property. There are two (2) farmed wetlands in the vicinity of the proposed use.

The adjacent land uses were Agricultural, Farmstead, Single-Family Residential, and Public/Institutional (Cemetery).

The County's Future Land Use Map called for the area to be Rural Residential and Suburban Residential. The Village of Plainfield's Future Land Use Map called for the area to be Low Density Residential, Medium Density Residential, and Countryside Residential.

Properties within one half (1/2) mile were zoned A-1, A-1 SU, R-1, and R-3 in the County and R-1 an R-1 PUD in the Village of Plainfield.

EcoCAT Report was submitted on September 27, 2023, and consultation was terminated, see Appendix F of the application.

The LESA Score for the property was 227 indicated a high level of protection. The NRI Report is included as Appendix E of the application.

Petition information was sent to Oswego Township on May 1, 2024. Prior to formal application submittal, Oswego Township submitted an email requesting a thirty-thirty foot (33') deep right-of-way dedication from the center of Simons Road and a road use agreement. The Petitioner already secured an access permit, see Appendix Y of the Application. To date, a road use agreement had not been finalized. The Oswego Township Planning Commission met on this proposal on May 22, 2024, but no information was available regarding the results of that meeting.

Petition information was sent to the Village of Plainfield on May 1, 2024. Prior to formal application submittal, the Village of Plainfield submitted a letter stating they will pursue an annexation agreement after the County reviews the application, see Appendix X.

Petition information was sent to the Oswego Fire Protection District on May 1, 2024. The Oswego Fire Protection District submitted an email expressing no objections to the request. The email was provided.

ZPAC reviewed this proposal at their meeting on May 7, 2024. Discussion occurred regarding Plainfield's plans to annex the property. The solar panels would likely stay at the property for the duration of the special use permit; no mass upgrade would likely occur. A forty foot (40') right-of-way dedication was recommended. The panels would be monitored remotely and a regular maintenance schedule would occur. Herbicides and chemicals would not be used; someone would be hired to maintain the vegetation. The area below the panels would be planted in pollinator friendly plants. If approved, construction would start in 2025. ZPAC recommended forwarding the proposal to the Regional Planning Commission with the amendment to the right-of-way dedication amount by a vote of nine (9) in favor and zero (0) in opposition with one (1) member absent. The minutes of the meeting were provided.

Per Section 7:01.D.17 of the Kendall County Zoning Ordinance, commercial solar energy facilities businesses can be special uses on A-1 zoned property subject to the following conditions:

a. All commercial solar energy facilities and test solar energy systems located within one point five (1.5) miles of a municipality shall either annex to the municipality or obtain an annexation agreement with the municipality requiring the municipality's regulations to flow through the property. Petitioner is requesting a variance. Pre-annexation likely within ninety (90) days of approval of the special use permit, see Appendix X of the Application.

b. The setbacks for commercial solar energy facilities shall be measured from the nearest edge of any component of the facility as follows:

   Occupied Community Buildings or Dwellings on Nonparticipating Properties-One hundred fifty feet (150') from the nearest point on the outside wall of the structure

   Boundary Lines of Participating Properties-None

Boundary Lines of Nonparticipating Properties- Fifty feet (50') to the nearest point on the property line of the nonparticipating property

Public Road Rights-Of-Way-Fifty feet (50') from the nearest edge

The above setbacks do not exempt or excuse compliance with electric facility clearances approved or required by the National Electrical Code, the National Electrical Safety Code, Commerce Commission, Federal Energy Regulatory Commission, and their designees or successors. Per the site plan, see Appendix I, the commercial solar energy facility is greater than one hundred fifty feet (150') from the closest non-participating structure. The perimeter fence is setback fifty feet (50') from the adjoining property line and road, except where the farmed wetlands are located (in which cases the setbacks are larger). The panels are twenty feet (20') from the fences on the north, west, and east side of the property and thirty feet (30') from the fence to the south.

c. A commercial solar energy facility's perimeter shall be enclosed by fencing having a height of at least six feet (6') and no more than twenty-five feet (25'). This is true. Per the site plan, see Appendix I, the fence seven feet (7') in height.

d. No component of a solar panel as part of a commercial solar energy facility shall have a height of more than twenty feet (20') above ground when the solar energy facility's arrays are at full tilt. Petitioner indicated that this is correct, see Appendix B, Page 8.

e. The above setback, fencing, and component height requirements may be waived subject to written consent of the owner of each affected nonparticipating property. This written consent shall be submitted at the time of application submittal. No such consent requested or needed.

f. Sound limitations for components in commercial solar energy facilities shall follow the sound limitations established by the Illinois Pollution Control Board. Petitioner indicated that they will follow these limitations, see Appendix R regarding the noise study.

g. The County shall not require standards for construction, decommissioning, or deconstruction of a commercial solar energy system or related financial assurances to be more restrictive than agricultural impact mitigation agreement set in State law. The amount of any decommissioning payment shall be limited to the cost identified in the decommissioning or deconstruction plan, as required by the agricultural impact mitigation agreement, minus the salvage value of the project. A copy of the agricultural impact mitigation agreement shall be submitted with the application materials. The decommissioning plan is included as Appendix O. As noted on page 5 of Appendix O, the decommissioning bond is set at One Hundred Thirty-One Thousand, Seven Hundred Six-Nine Dollars and Twelve Cents ($131,769.12). The payment of the bond is outlined in the Agricultural Impact Mitigation Agreement (AIMA) on page 11 of Appendix V.

h. A vegetative screening shall be placed around the commercial solar energy facility. The landscaping plan was provided as Appendix J. An open area pollinator seed mix is purposed around the perimeter of the property. The performance standards and ground cover maintenance requirements were included in the landscaping plan.

i. Commercial solar energy facility applicants shall provide the results and recommendations from consultations with the Illinois Department of Natural Resources obtained through the Ecological Compliance Assessment Tool (EcoCat) or a comparable successor tool. The commercial solar energy facility applicant shall adhere to the recommendations provided through this consultation. The EcoCat

was submitted and consultation was terminated without any specific recommendations.

j. Commercial solar energy facility applicants shall provide the results of the United States Fish and Wildlife Service's Information for Planning and Consulting environmental review or a comparable successor toll that is consistent with the U.S. Fish and Wildlife Service's Land-Based Wind Energy Guidelines and any applicable United States Fish and Wildlife Service solar wildlife guidelines that have been subject to public review. This was provided starting as Page 34 in Appendix L. The Indiana bat, tricolored bat, whooping crane, monarch butterfly, and eastern prairie fringed orchid were in the area. No impacts were anticipated.

k. A facility owner shall demonstrate avoidance of protected lands as identified by the Illinois Department of Natural Resources and the Illinois Nature Preserve Commission or consider the recommendations of the Illinois Department of Natural Resources for setbacks from protected lands, including areas identified by the Illinois Nature Preserve Commission. This is true. The site is designed around the farmed wetlands.

l. A facility owner shall provide evidence at the time of application submittal of consultation with the Illinois State Historic Preservation Office to assess potential impacts on State-registered historic sites under applicable State law. No potential impacts to State-registered historic sites exists, see Appendix M.

m. A commercial solar energy facility owner shall plant, establish, and maintain for the life of the facility vegetative ground cover consistent with State law and the guidelines of the Illinois Department of Natural Resources' vegetative management plans. The vegetation management plan shall be required at the time of application submittal. The vegetation management plan is included as part of the landscaping, including timelines for planting and maintenance of the vegetation, see Appendix J.

n. The facility owner shall enter into a road use agreement with the jurisdiction having control over the applicable roads. The road use agreement shall follow applicable law. The facility owner shall supply the Kendall County Planning, Building and Zoning Department with a copy of the road use agreement. This provision shall be waived if the jurisdiction having control over the applicable roads does not wish to enter into an agreement. As of the date of this memo, the road use agreement negotiations are ongoing. The transportation and access plan was provided as Appendix U.

o. The facility owner shall repair or pay for the repair of all damage to the drainage system caused by the construction of the commercial solar energy system within a reasonable time after construction of the commercial solar energy facility is complete. The specific time shall be set in the special use permit. No information was provided regarding drain tile. A drain tile survey is required, per the AIMA.

No buildings are planned for the site. Any structures proposed for the site, including the solar arrays, shall obtain applicable permits.

The property is presently farmland. No wells, septic systems, or refuse collection points were identified.

The Petitioner submitted an application for a stormwater permit. Also, the Petitioner is designing the site per the Village of Plainfield's regulations.

The Petitioner provided groundwater studies, see Appendix S.

Per the site plan (Appendix I), the Petitioner's propose one (1) thirty foot (20') wide access road. Oswego Township has granted an access permit.

The Petitioner is agreeable to right-of-way dedication and the Petitioner submitted a transportation and access plan.

No parking is proposed.

No lighting was proposed.

Per Appendix B, Page 8, a warning sign will be placed at the facility entrance and along the perimeter fence. These signs shall include address of the subject property and a twenty-four (24) hour emergency contact phone number.

The Petitioner provided a glare study, see Appendix Q.

The Petitioner provided a property values study, Appendix T.

No odors were foreseen.

If approved, this would be the second special use permit for a commercial solar energy facility in unincorporated Kendall County.

The proposed Findings of Fact for the special use permit were as follows:

The establishment, maintenance, or operation of the special use will not be detrimental to or endanger the public health, safety, morals, comfort, or general welfare. The Project will generate clean, renewable electricity while producing no air, noise, or water pollution, or ground contamination. The landscape buffer and existing vegetation around the site will be provided and preserved to screen the project from the view of neighbors and roads. The Petitioner proposes to use pollinator-friendly ground cover underneath the Project and native plantings around the perimeter. These include clover and grass species that promote the establishment and long-term health of bee populations. The Petitioner submitted a landscaping plan outlining the types of vegetation that will be planted, the timing of planting, and a maintenance plan for the vegetation. The Petitioner provided a report regarding the proposed landscaping plan and water quality. In addition, the proposal will promote the general welfare of Kendall County by supplying new jobs, new tax revenue and will be a source of generation of sustainable, clean, pollution-free renewable electricity.

The special use will not be substantially injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted, nor substantially diminish and impair property values within the neighborhood. The Zoning classification of property within the general area of the property in question shall be considered in determining consistency with this standard. The proposed use makes adequate provisions for appropriate buffers, landscaping, fencing, lighting, building materials, open space and other improvements necessary to insure that the proposed use does not adversely impact adjacent uses and is compatible with the surrounding area and/or the County as a whole. The proposal will not interfere with the use and enjoyment of nearby properties. The surrounding properties are zoned primarily A-1 and will not be prevented from continuing any existing use or from pursuing future uses. The proposal's operations would be quiet and would be utilizing pollinator friendly seeding, native plants, and vegetative screening. The landscape buffer will

reduce any visual impact on neighbors who live nearby. The Petitioner provided a property value study showing no impact to the values of property near these types of projects.

Adequate utilities, access roads and points of ingress and egress, drainage, and/or other necessary facilities have been or are being provided. The proposal will have adequate utility interconnections designed in collaboration with ComEd. The proposal does not require water, sewer, or any other public utility facilities to operate. The Petitioner will also build all roads and entrances at the facility and will enter into an agreement with Oswego Township regarding road use. After initial construction traffic, landscape maintenance and maintenance to the Project components are anticipated to occur on an as-needed basis, consistent with the Landscaping Plan. Existing traffic patterns will not be impacted in the post-construction operations phase. A drain tile survey will be completed prior to construction and foundation design will work around or reroute any identified drain tiles to ensure proper drainage. The Project will also be designed in a manner that will not materially modify existing water drainage patterns around its facilities.

The special use shall in all other respects conform to the applicable regulations of the district in which it is located, except as such regulations may in each instance be modified by the County Board pursuant to the recommendation of the Zoning Board of Appeals. If the requested variance is granted, the proposal meets all applicable regulations.

The special use is consistent with the purpose and objectives of the Land Resource Management Plan and other adopted County or municipal plans and policies. The proposal is also consistent with a goal and objective found on page 3-34 of the Land Resource Management Plan, “Support the public and private use of sustainable energy systems (examples include wind, solar, and geo-thermal).”

The proposed Findings of Fact for the variance were as follows:

The particular physical surroundings, shape, or topographical condition of the specific property involved would result in a particular hardship or practical difficulty upon the owner if the strict letter of the regulations were carried out. The subject property is located within one point five (1.5) miles of the Village of Plainfield. The Village of Plainfield provided a letter stating they will enter into a pre-annexation agreement in the future.

The conditions upon which the requested variation is based would not be applicable, generally, to other property within the same zoning classification. Other A-1 zoned properties within one point five (1.5) miles of a municipality could request a similar variance, if the municipality refuses to annex or enter into a pre-annexation agreement.

The alleged difficulty or hardship has not been created by any person presently having an interest in the property. The difficulty was created because the Village of Plainfield did not wish to enter into a pre-annexation agreement or annex the property in a timely manner before application submittal.

The granting of the variation will not materially be detrimental to the public welfare or substantially injurious to other property or improvements in the neighborhood in which the property is located. Granting the variance would not be detrimental to the public or substantially injurious to other properties.

That the proposed variation will not impair an adequate supply of light and air to adjacent property, or substantially increase the congestion in the public streets or increase the danger of fire, or endanger the public safety or substantially diminish or impair property values within the neighborhood. The proposed variance

would not impair light or air on adjacent property, cause congestion, increase the danger of fire, or negatively impact property values.

Staff recommended approval of the requested special use permit and variance subject to the following conditions and restrictions. To date, the Petitioner has not agreed to these conditions and restrictions:

1. The site shall be developed substantially in accordance with the submitted site plan (Appendix I), landscaping plan, (Appendix J), operations and management plan (Appendix N), decommissioning plan, (Appendix O), road access plan (Appendix U), and Agricultural Impact Mitigation Agreement (Appendix V).
2. Within ninety (90) days of the approval of the special use permit, the owners of the subject property shall dedicate a strip of land ~~**thirty-three feet (33')**~~ **forty feet (40')** in depth along the southern property line to Oswego Township. The Kendall County Planning, Building and Zoning Committee may grant an extension to this deadline. **(Amended at ZPAC)**
3. Within ninety (90) days of the approval of the special use permit, the owner of the subject property shall enter into a pre-annexation agreement with the Village of Plainfield. The Kendall County Planning, Building and Zoning Committee may grant an extension to this deadline.
4. None of the vehicles or equipment parked or stored on the subject property allowed by the special use permit shall be considered agricultural vehicles or agricultural equipment.
5. All of the vehicles and equipment stored on the subject property allowed by the special use permit shall be maintained in good condition with no deflated tires and shall be licensed if required by law.
6. Any structures, included solar arrays, constructed, installed, or used allowed by this special use permit shall not be considered for agricultural purposes and must secure applicable building permits.
7. One (1) warning sign shall be placed at the facility entrance and one (1) warning sign shall be placed along the perimeter fence. These signs shall include, at minimum, the address of the subject property and a twenty-four (24) hour emergency contact phone number. Additional signage may be installed, if required by applicable law.
8. The operators of the use allowed by this special use permit acknowledge and agree to follow Kendall County's Right to Farm Clause.
9. The property owner and operator of the use allowed by this special use permit shall follow all applicable Federal, State, and Local laws related to the operation of this type of use.
10. Failure to comply with one or more of the above conditions or restrictions could result in the amendment or revocation of the special use permit.
11. If one or more of the above conditions is declared invalid by a court of competent jurisdiction, the remaining conditions shall remain valid.
12. This special use permit and variance shall be treated as a covenant running with the land and is binding on the successors, heirs, and assigns as to the same special use conducted on the property.

Mr. Asselmeier read a letter from State Representative Jed Davis. Representative Davis asked the County deny this proposal.

Gloria Foxman, Project Manager for TurningPointEnergy, LLC on behalf of the solar farm. Ms. Foxman introduced the other experts, Erin Bowen with Cohn Reznick Real Estate Appraiser, Katherine Carlson with Kimley-Horn Civil Engineering Firm, Tom Huddleston to answer questions about drain tile, and Kyle Berry, Attorney. Ms. Foxman provided a presentation. She stated she went knocking on doors to speak to residents to make them aware of the solar farm coming to their area. She explained the benefits of solar in her presentation. Ms. Foxman stated that the company leases land from the owner and is responsible for all the maintenance. The solar panels lifespan is twenty-five (25) to forty (40) years. At the end of the lifespan the solar farm will be decommissioned.

Katherine Carlson with Kimley-Horn Civil Engineering Firm made a presentation regarding the site plan. It is composed of seventy-three (73) acres, but the amount of land fenced in will be thirty-eight (38) acres. There is a large portion of land to the north that will remain agriculture and farmed.

Erin Bowen is a Real Estate Appraiser with Cohn Reznick. She said there was no measurable difference in property values and solar farms have not deterred new development.

Member Casey asked if any projects had reached the end of their lifespan. Ms. Fox replied that there were none. The company was twelve (12) years old. Member Casey asked what happens when they get to the end of their lifespan. Ms. Fox stated that the company was obliged to decommission it and return the land to its original state. If the owner would like to keep the access road or landscaping, those features would remain.

Member Wilson asked if they could extend the lease for the solar farm. Ms. Foxman stated she did not know the legalities of that.

Paul Yearsley asked why would the solar panels be removed. He stated that he was not against landowners making money. He purchased his home to enjoy the farmland and scenery. He also questioned why ComEd would purchase this energy. He did not see where the County or its residents would profit from this venture. He expressed concerns about safety for neighborhood children. He wasn't sure what his property would be worth. He tried to contact Ms. Foxman, but did not receive a response. He questioned the use of local installers. He suggested placing solar panels beneath existing power lines. Discussion occurred regarding annexation with Plainfield. He provided an article saying people should not live within one point two (1.2) miles of a solar farm. Mr. Yearsley questioned the size of the project.

Mr. Barry noted that ComEd does not produce its own energy.

Member Bernacki asked if the Petitioners reached out to the County first or Plainfield first. The proposal was reviewed conceptually by Plainfield prior to application submittal and Plainfield submitted a letter stating they would pre-annex the property upon approval by the County.

Dave Koehler said that he was never contacted by the Petitioner. He discussed the location of drain tile on the property. He requested an easement to access the drain tile. He discussed spinning reserve capacity, which is costly for the utility. For this reason, he would like to see battery storage onsite. He questioned where this project would tie into the ComEd system. He questioned if the panels were made China and who is ultimate owner of the project. Ms. Foxman said the owner of the project is TurningPointEnergy, LLC through TPE IL

KE240 and battery storage is not proposed for this project. He was glad that Kendall County required large amounts acreage to build houses on agricultural land and the requirement to have logic in their growth strategies.

Member Nelson asked if the facility will be built without battery storage. Ms. Foxman responded yes. Mr. Asselmeier stated that, if someone proposed battery storage as part of a commercial solar project, battery storage would be incorporated into the special use permit. However, if someone proposed battery storage as the primary use of a property, that use would not be allowed. Member Nelson said that battery storage was discussed as part of another project and, in that case, battery storage would be necessary for that project to proceed.

Greg Henderson questioned the placement of this project in a residential area. He questioned the validity of the submitted housing study and other factors (i.e. new roof) of the house. He expressed concerns about drainage and existing flooding. He suggested placing this project on farmland further away from residential.

Tom Huddleston, drain tile consultant, explained the drain tile survey. He said the impacted drain tiles will have new pipe and will be fifteen inches (15") if the existing tiles are fourteen inches (14"). A drain tile map will be created as a result of the survey. All elevations will remain the same. He also discussed the planting of grasses and vegetation.

Member Bernacki asked why the project was located on the south end of the property. Ms. Foxman said the project needs only a certain amount of land and the project was placed on the south end of the property to be away from the neighboring residences. The part of the project that goes up to Collins Road is for the path of connection; the wires would be underground to a point and then would connect to the ComEd system above ground. The Petitioner pays to upgrade ComEd's lines.

Well water would not be impacted by the subterranean lines.

Joy Lieser provided a history of her property. She felt the solar farm would be negative from an aesthetic and health point of view.

Carrie Kennedy said that she and her husband moved to the area because of the rural feel. She believed the proposal would take away from the rural feel. She did not feel the benefit outweighed the cost. She asked how long the project would be viable. She had a concern about decommissioning. She asked if the other special use permit for a commercial solar project was in a residential area. She also asked what the vision was for commercial solar in Kendall County. Mr. Asselmeier said the other project was along Newark Road; it is not in a residential area.

Andrew Daylor liked the rural character of the area. He questioned the project placement in a rural residential area.

Kristine Henderson favored having a subdivision to their east. She asked about fencing. The fencing would be agricultural with no barbed wire. As a Realtor, she would not sell a house next to a solar farm. She was concerned about the animals in the area. The fence is proposed to be inside the green buffer.

Discussion occurred regarding State regulations and the tying of the hands of counties by State law.

Ms. Foxman explained that ComEd tells them where they can interconnect and that information dictates where they attempt to place solar farms.

Mr. Asselmeier explained the approval process and timeline.

Member Wormley reread a portion of the letter of State Representative Davis. Member Wormley was opposed to the variance request. Commercial solar on this land was probably not the best use of land given development patterns in the area.

Member Wilson asked about the decommission plan. The bond would be posted with the County, unless the property is annexed. Discussion occurred regarding the inflation factor. It was noted that the bond figure could be revisited per the AIMA.

Member Wilson asked about soil reclamation in relation to the decommissioning plan. All of the underground cables would be removed per the decommissioning plan.

Member Wilson asked about the drip line. Discussion occurred regarding the number of drip lines.

Member Casey left at this time (9:45 p.m.).

Member Wilson expressed concerns about plants growing. Discussion occurred regarding the erosion and sediment control plan.

Discussion occurred regarding enforcement of the conditions of the special use permit and other applicable law.

The LLC owns the project, but the project would not be operated by the LLC and probably would be sold. Mr. Asselmeier said that the property owner would receive citations. If a violation occurs, liens would be placed with the property.

The Petitioner does not plan to store vehicle or equipment on the property after the project is operational.

Discussion occurred regarding degradation of panels and panel replacement.

Member Nelson made a motion, seconded by Member Bernacki, to recommend approval of the special use permit and variance.

The votes were as follows:
Ayes (0): None
Nays (7): Ashton, Bernacki, Hamman, Nelson, Rodriguez, Wilson, and Wormley
Absent (3): Casey, McCarthy-Lange, and Stewart
Abstain (0): None

The proposals go to the Kendall County Zoning Board of Appeals on May 28, 2024.

CITIZENS TO BE HEARD/PUBLIC COMMENT
None

OTHER BUSINESS/ANNOUNCEMENTS
Mr. Asselmeier reported that Petition 24-10 and 24-11 will be on the agenda for the June meeting.

ADJOURNMENT
Member Wilson made a motion, seconded by Member Nelson, to adjourn. With a voice vote of seven (7) ayes, the motion carried.

The Kendall County Regional Planning Commission meeting adjourned at 9:59 p.m.

Respectfully submitted by,
Wanda A. Rolf, Administrative Assistant

KENDALL COUNTY
REGIONAL PLANNING COMMISSION
MAY 22, 2024

IF YOU WOULD LIKE TO BE CONTACTED ON FUTURE MEETINGS REGARDING THIS TOPIC, PLEASE PROVIDE YOUR ADDRESS OR EMAIL ADDRESS

NAME	ADDRESS (OPTIONAL)	EMAIL ADDRESS (OPTIONAL)
Jeri O'Brien	[redacted]	
DAVE Koehler		
BRUCE MILLER		
Joan Sotkiewicz		
Marcia Rousonelos		
Ray Sackenreuter 5124 RT 52		
Kyle Barry		
Gloria Foxman		

KENDALL COUNTY
REGIONAL PLANNING COMMISSION
MAY 22, 2024

IF YOU WOULD LIKE TO BE CONTACTED ON FUTURE MEETINGS REGARDING THIS TOPIC, PLEASE PROVIDE YOUR ADDRESS OR EMAIL ADDRESS

NAME	ADDRESS (OPTIONAL)	EMAIL ADDRESS (OPTIONAL)
Erin Bowen	[redacted]	
Katherine Carlson		
TOM HUDDLESTON		
Paul Yeardley		
DAVE Koehler		
Jay Lieser		

TurningPoint Energy
development – advisory – investment



TPE IL KE240, LLC Commercial Solar Energy Facility

Kendall County Regional Planning Commission

May 22, 2024

TurningPoint Energy Approach

- Engagement with permitting authorities
- Outreach to abutters
- Using native pollinator friendly plant landscape buffers
- Targeting over $500,000 community investment across Illinois as part of our community solar project development in the state





I have to say that because of your materials my students are more engaged and eager to learn about solar. I thank you for what you are doing and feel it has inspired and engaged our kids." – 5th grade teacher, Deming Public Schools, New Mexico

TurningPoint Energy

TPE Community Investment

TPE invests in every community where our projects are located. To date, TPE and its partners have provided over $1,400,000 in community investment/goodwill funding, with plans to reach nearly $3,000,000 by 2026. The following is a sample of organizations that have received funding to date.





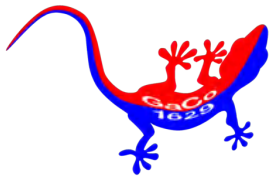








































WHITE MARSH VOLUNTEER FIRE COMPANY



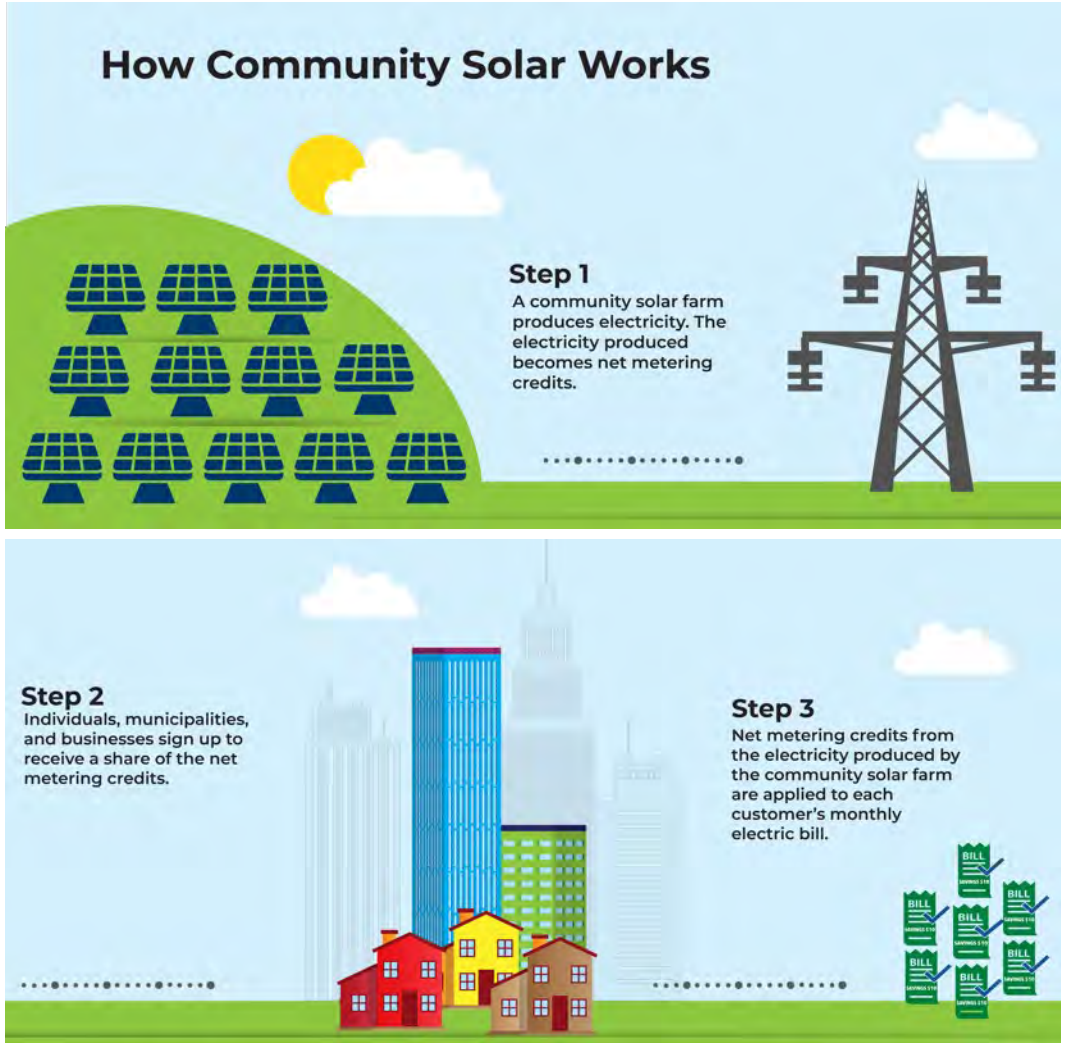


TurningPoint Energy

What is Community Solar?

Also called a shared renewable energy plant, Community Solar is a solar power plant structure designed to benefit multiple customers:

- The solar project's generated electricity is shared by more than one household and covers all or a portion of their load
- Enables homeowners, renters and those otherwise unable to install a system to participate in clean energy
- Zero upfront cost and no long-term commitment to the subscriber



TurningPoint Energy

TPE IL KE240, LLC Project Site

- Between Simons Road and Collins Road east of Red Hawk Drive
- Approx 33-acre array
- Screened with fence and vegetative buffer
- Planted with native pollinator-friendly species



TurningPoint Energy

How Community Solar Benefits Communities

Community solar enables Kendall County residents to benefit from solar without installing panels on individual residents' properties.

Local Jobs

(50-75 over 12-18 months)

Electricity Savings Opportunity for Residents (5%-10%)

Tax Revenue $1,000,000+

Reduced Greenhouse Gas Emissions

Increased Grid Resiliency

Pollinator Habitat

Improved Soil Health and Reduced Erosion

TurningPoint Energy
development - advisory - investment

Planting Plan

- Buffer and array planting mix will include native pollinators
  - Will include flowering species in the spring, summer and fall.
- Similar to Conservation Reserve Program (CRP):
  - Reduce soil erosion on highly erodible cropland
  - Protect long-run capability to produce food and fiber
  - Income support for farmers



Glare Study

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Route 1	0	0.0	0	0.0
Route 2	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0



TurningPoint Energy

How would a solar farm be as a neighbor?

Quiet and Screened









- No long-term traffic
- No water or sewer usage
- Compliance with Illinois noise standards
- No emissions
- No glare
- Limited site lighting
- Landscape screening
- Improved soil health and reduced erosion

TurningPoint Energy

Kimley»Horn

TurningPoint Energy
TPE IL KE240, LLC

Kendall County

Presenter: Katherine Carlson

Date: May 22, 2024

Site Plan

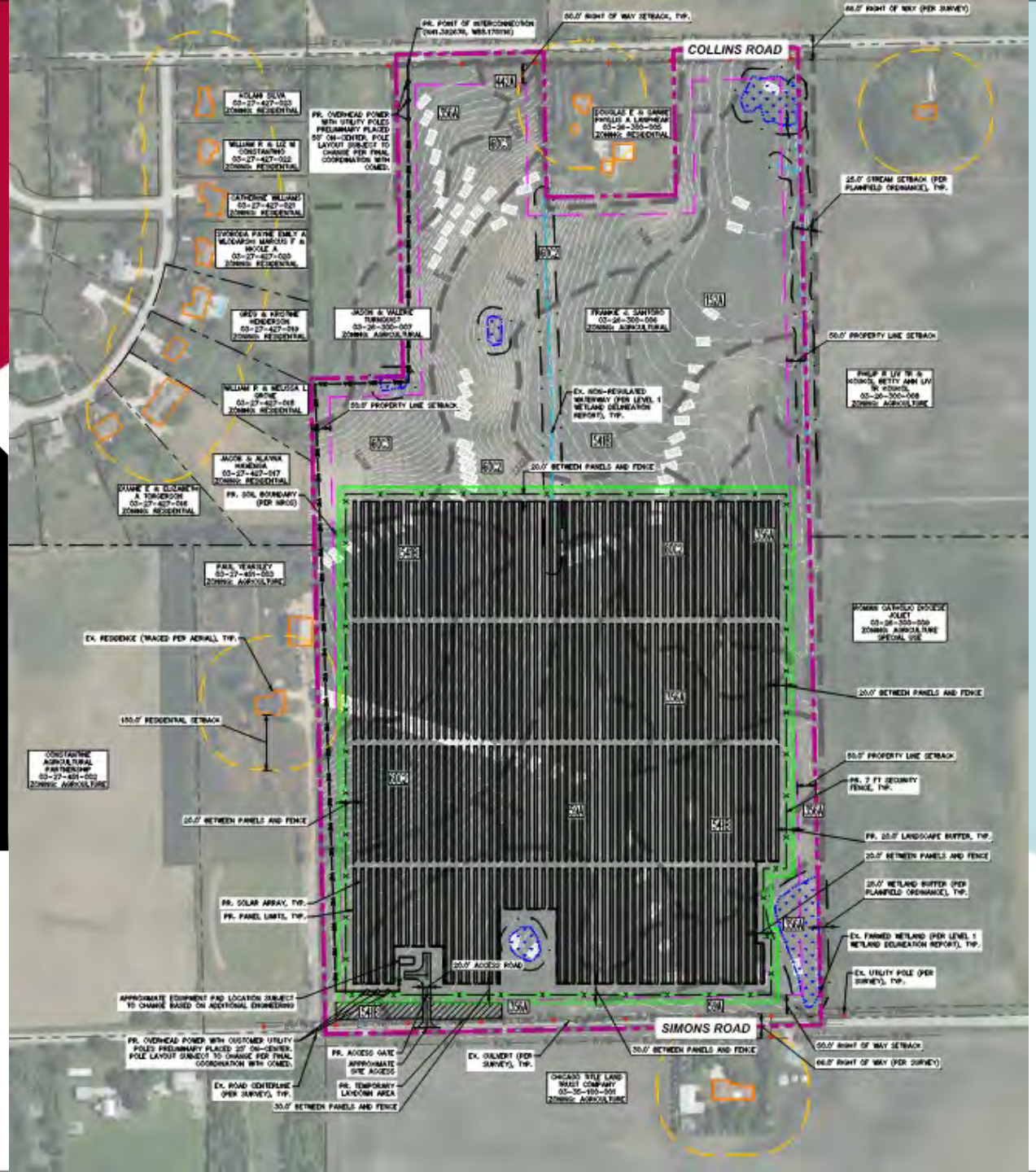
SITE DATA TABLE

PIN #	03-26-300-006
PROPERTY OWNER	FRANKIE J. SANTORO
SITE ADDRESS	SIMONS RD, OSEWEGO, IL 60543
LEGAL DESCRIPTION	SEC 26-37-8
ZONING JURISDICTION	KENDALL COUNTY
ZONING	A1 – AGRICULTURAL
CURRENT LAND USE	AGRICULTURAL FIELD
PROPOSED USE	COMMERCIAL SOLAR FIELD
TOTAL PARCEL AREA	73.07 ± AC
PRELIMINARY DISTURBED AREA	37.84 ± AC
PRELIMINARY SOLAR AREA	32.95 ± AC
RIGHT OF WAY SETBACK	50'
PROPERTY LINE SETBACK	50'
RESIDENTIAL SETBACK	150'

*ZONING SITE PLAN IS BEING SUBMITTED FOR SPECIAL USE PERMIT TO CONSTRUCT/OPERATE A SOLAR FARM

SOILS DATA TABLE

MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC SOIL GROUP
59A	LISBON SILT LOAM, 0 TO 2 PERCENT SLOPES	C/D
60C2	LA ROSE SILT LOAM, 5 TO 10 PERCENT SLOPES	C
60C3	LA ROSE CLAY LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED	C
152A	DRUMMER SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES	B/D
356A	ELPASO SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES	B/D
442A	MUNDELEIN SILT LOAM, 0 TO 2 PERCENT SLOPES	B/D
541B	GRAYMONT SILT LOAM, 2 TO 5 PERCENT SLOPES	C



Kimley»Horn

LEGEND

ROAD LABEL	N 2200TH ST
PROPERTY LINE / PROJECT BOUNDARY	
ADJACENT PROPERTY LINE (PER SURVEY)	
ADJACENT PROPERTY LINE (TRACED PER GIS)	
RIGHT OF WAY	R/W
SETBACK	
RESIDENTIAL DWELLING SETBACK	
EX. RESIDENCE/STRUCTURE	
EX. CONTOUR	
EX. OVERHEAD ELECTRIC	EX OHE
EX. UTILITY POLE	
EX. ROAD CENTERLINE	
EX. FARMED WETLAND (PER LEVEL 1 DELINEATION BY KIMLEY-HORN)	
EX. WETLAND BUFFER (PER THE CITY PLAINFIELD CODE OF ORDINANCES 4-10-6-8)	
EX. NON REGULATED WATERWAY (PER LEVEL 1 DELINEATION BY KIMLEY-HORN)	
EX. CULVERT	
EX. FLOW (DIRECTION AND SLOPE)	XX%
PR. SECURITY FENCE	X
PR. GATE	
PR. TEMPORARY LAYDOWN AREA	
PR. ACCESS ROAD	
PR. LANDSCAPE BUFFER	
PR. UNDERGROUND ELECTRIC	UGE UGE
PR. OVERHEAD ELECTRIC	OHW
PR. UTILITY POLE	
PR. EQUIPMENT PAD	
PR. SOLAR ARRAY	
PR. PANEL LIMITS	
SOIL BOUNDARY	

Landscape /Buffers

Kimley»Horn

CONCEPT PLANT SCHEDULE

EVERGREEN TREE/SHRUB 342
SAWARA CYPRESS 'SOFT SERVE'
JUNIPERUS VIRGINIANA
JUNIPERUS CHINESIS 'MOUNTBATTEN'
PICEA PUNGENS 'FAT ALBERT'
TAXUS CUSPIDATA 'CAPITATA'
TAXUS X MEDIA 'HICKSII'
THUJA OCCIDENTALIS 'WOODWARDII'

LARGE DECIDUOUS SHRUB 341
ARONIA ARBUTIFOLIA
CORNUS SERICEA CARDINAL
EUONYMUS ALATUS 'COMPACTUS'
ILEX VERTICILLATA
LINDERA BENZOIN
PHYSOCARPOS OPULIFOLIUS
SAMUCUS CANADENSIS
VIBURNUM DENTATUM
VIBURNUM LENTAGO 'MOHICAN'
VIBURNUM PRUNIFOLIUM

OPEN AREA POLLINATOR SEED MIX

ARRAY AREA SEED MIX

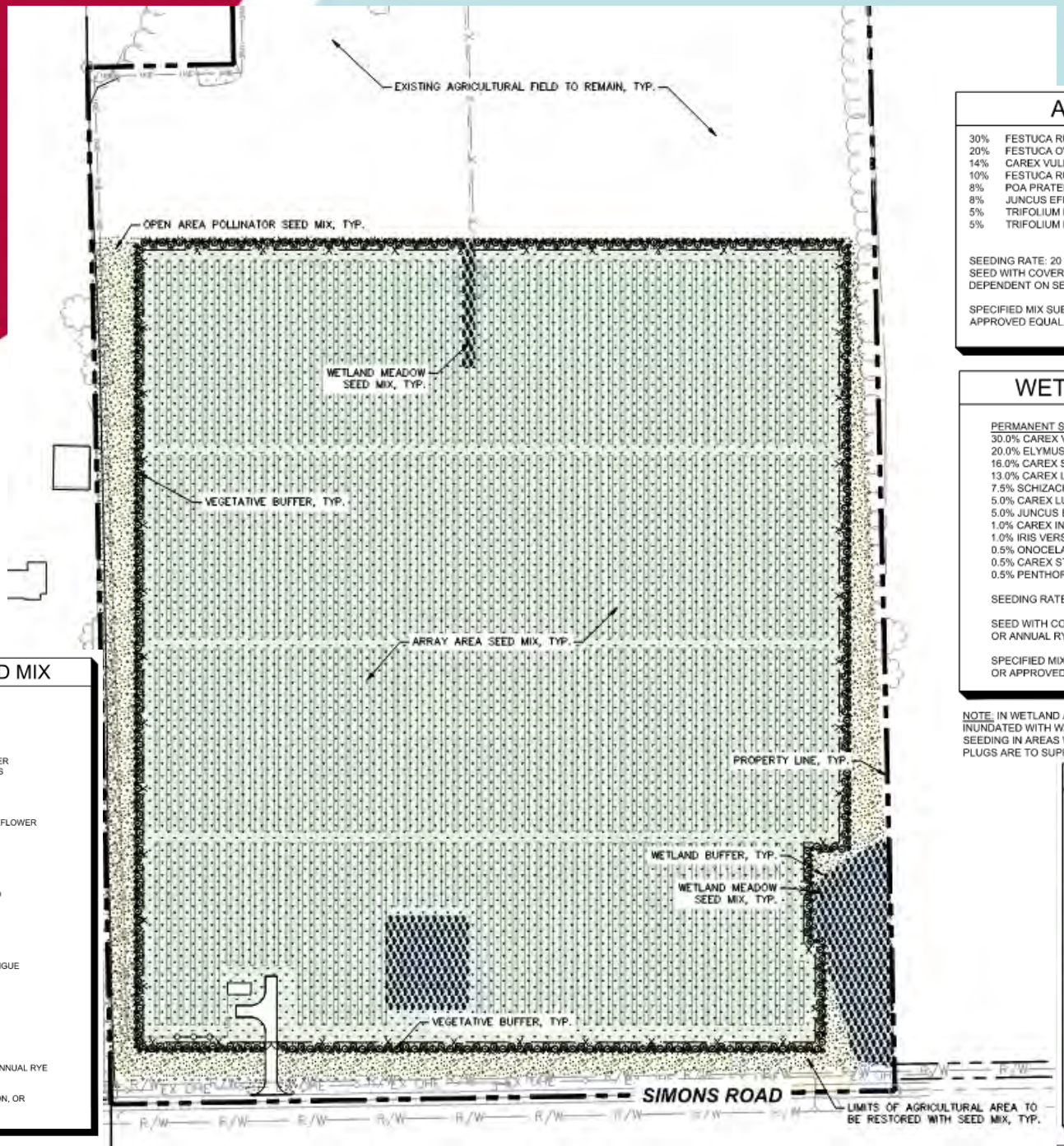
WETLAND MEADOW SEED MIX

OPEN AREA POLLINATOR SEED MIX

25%	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM
10%	BOUTELOUA CURTIPENDULA	SIDEOATS GRAMA
6%	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED
5.5%	ELYMUS CANADENSIS	CANADA WILDRYE
5.2%	ECHINACEA PURPUREA	PURPLE CONEFLOWER
5%	DALEA PURPUREA	PURPLE PRAIRIE CLOVER
4.3%	COREOPSIS LANCEOLATA	LANCELEAF COREOPSIS
3.5%	RUDBECKIA HIRTA	BLACKEYED SUSAN
3%	ALLIUM CERNUUM	NODDING WILD ONION
2.2%	SOLIDAGO NEMORALIS	GRAY GOLDENROD
2.1%	SPIRAEA ALBA DU ROI	MEADOWSWEET
2%	RATIBIDA PINNATA	YELLOW PRAIRIE CONEFLOWER
2%	ROSA SETIGERA MICHX	MICHIGAN ROSE
1.8%	SOLIDAGO SPECIOSA	SHOWY GOLDENROD
1.8%	SYMPHYOTRICHUM LAEVE	SMOOTH BLUE ASTER
1.6%	CEANOTHUS AMERICANUS	NEW JERSEY TEA
1.5%	GERANIUM MACULATUM	WILD GERANIUM
1.5%	LIATRIS ASPERA MICHX	ROUGH BLAZING STAR
1.4%	SOLIDAGO RIDDELLII	RIDDELL'S GOLDENROD
1.4%	SYMPHYOTRICHUM ERICOIDES	HEATH ASTER
1.3%	PENSTEMON HIRSUTUS	HAIRY BEARDTONGUE
1.2%	LOBELIA SIPHILITICA	BLUE LOBELIA
1.2%	ASCLEPAIS TUBEROSA	BUTTERFLY WEED
1.2%	ASCLEPIAS INCARNATA	SWAMP MILKWEED
1.2%	ZIZIA AUREA	GOLDEN ALEXANDERS
1.1%	PENSTEMON DIGITALIS	TALL WHITE BEARDTONGUE
1%	ANEMONE CANADENSIS	CANADA ANEMONE
1%	AQUILEGIA CANADENSIS	COLUMBINE
1%	BAPTISIA BRACTEATA VAR LEUCOPHAEA	WILD INDIGO
1%	LUPINUS PERENNIS V. OCCIDENTALIS	WILD LUPINE
1%	MONARDA FISTULOSA	WILD BERGAMOT
1%	MONARDA PUNCTATA	HORSE MINT

SEEDING RATE: 25 LB PER ACRE
SEED WITH COVER CROP OF OATS, JAPANESE MILLET, WINTER PEA, OR ANNUAL RYE DEPENDENT ON SEASON AT A RATE OF 30 LB PER ACRE.

SPECIFIED MIX SUBJECT TO AVAILABILITY DURING TIME OF CONSTRUCTION, OR APPROVED EQUAL.



ARRAY AREA SEED MIX

30%	FESTUCA RUBRA	CREEPING RED FESCUE
20%	FESTUCA OVINA	HARD FESCUE
14%	CAREX VULPINOIDEA	FOX SEDGE
10%	FESTUCA RUBRA SSP. COMMUTATA	CHEWINGS FESCUE
8%	POA PRATENSE	KENTUCKY BLUEGRASS
8%	JUNCUS EFFUSUS	SOFT RUSH
5%	TRIFOLIUM PRATENSE	RED CLOVER
5%	TRIFOLIUM REPENS, 'DUTCH'	DUTCH WHITE CLOVER

SEEDING RATE: 20 LB PER ACRE
SEED WITH COVER CROP OF OATS, JAPANESE MILLET, WINTER PEA, OR ANNUAL RYE DEPENDENT ON SEASON AT A RATE OF 30 LB PER ACRE.

SPECIFIED MIX SUBJECT TO AVAILABILITY DURING TIME OF CONSTRUCTION, OR APPROVED EQUAL.

WETLAND MEADOW SEED MIX

PERMANENT SOLAR FARM SEED MIX

30.0% CAREX VULPINOIDEA	FOX SEDGE
20.0% ELYMUS VIRGINICUS	VIRGINIA WILDRYE
16.0% CAREX SCOPARIA	BLUNT BROOM SEDGE
13.0% CAREX LURIDA	LURID SEDGE
7.5% SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM
5.0% CAREX LUPULINA	HOP SEDGE
5.0% JUNCUS EFFUSUS	SOFT RUSH
1.0% CAREX INTUMESCENS	STAR SEDGE
1.0% IRIS VERSICOLOR	BLUE FLAG
0.5% ONOCELA SENSIBILIS	SENSITIVE FERN
0.5% CAREX STIPATA	AWL SEDGE
0.5% PENTHORUM SEDOIDES	DITCH STONECROP

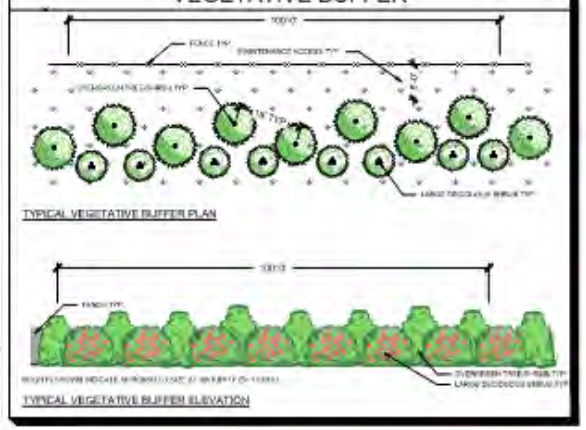
SEEDING RATE: 30 LB PER ACRE

SEED WITH COVER CROP OF OATS, JAPANESE MILLET, WINTER PEA, OR ANNUAL RYE DEPENDENT ON SEASON AT A RATE OF 12 LB PER ACRE.

SPECIFIED MIX DEPENDENT ON AVAILABILITY DURING TIME OF CONSTRUCTION, OR APPROVED EQUAL

NOTE: IN WETLAND AREAS SEED IS TO BE INSTALLED ONLY WITHIN AREAS THAT NOT INUNDATED WITH WATER AT THE TIME OF PLANTING. PLUGGING TO BE USED IN LIEU OF SEEDING IN AREAS WHERE SEEDING IS IMPOSSIBLE DUE TO HIGH WATER LEVELS AND PLUGS ARE TO SUPPLEMENT SEED AREAS AS NEEDED TO IMPROVE VEGETATIVE COVER.

VEGETATIVE BUFFER



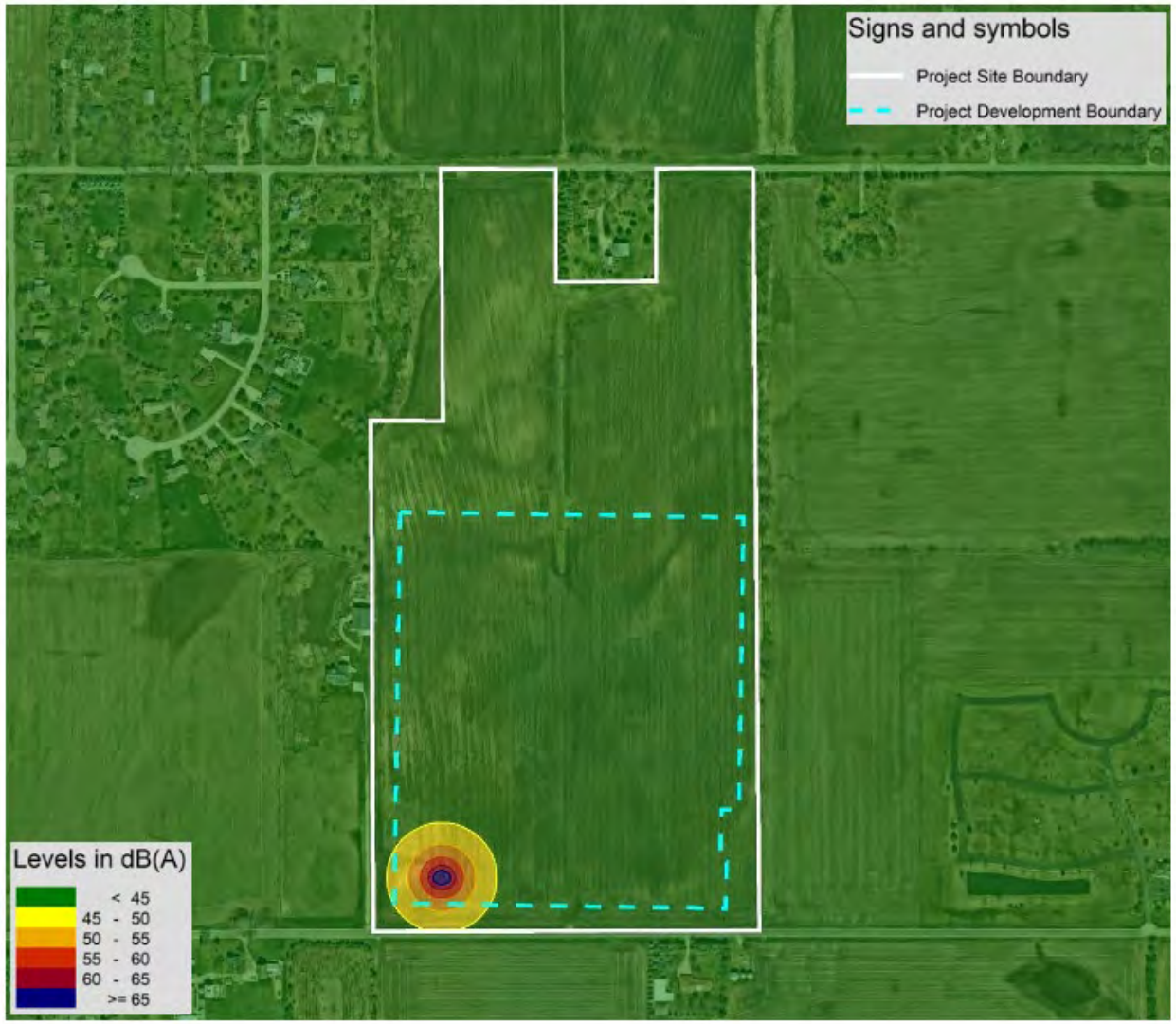
TYPICAL VEGETATIVE BUFFER PLAN

TYPICAL VEGETATIVE BUFFER ELEVATION

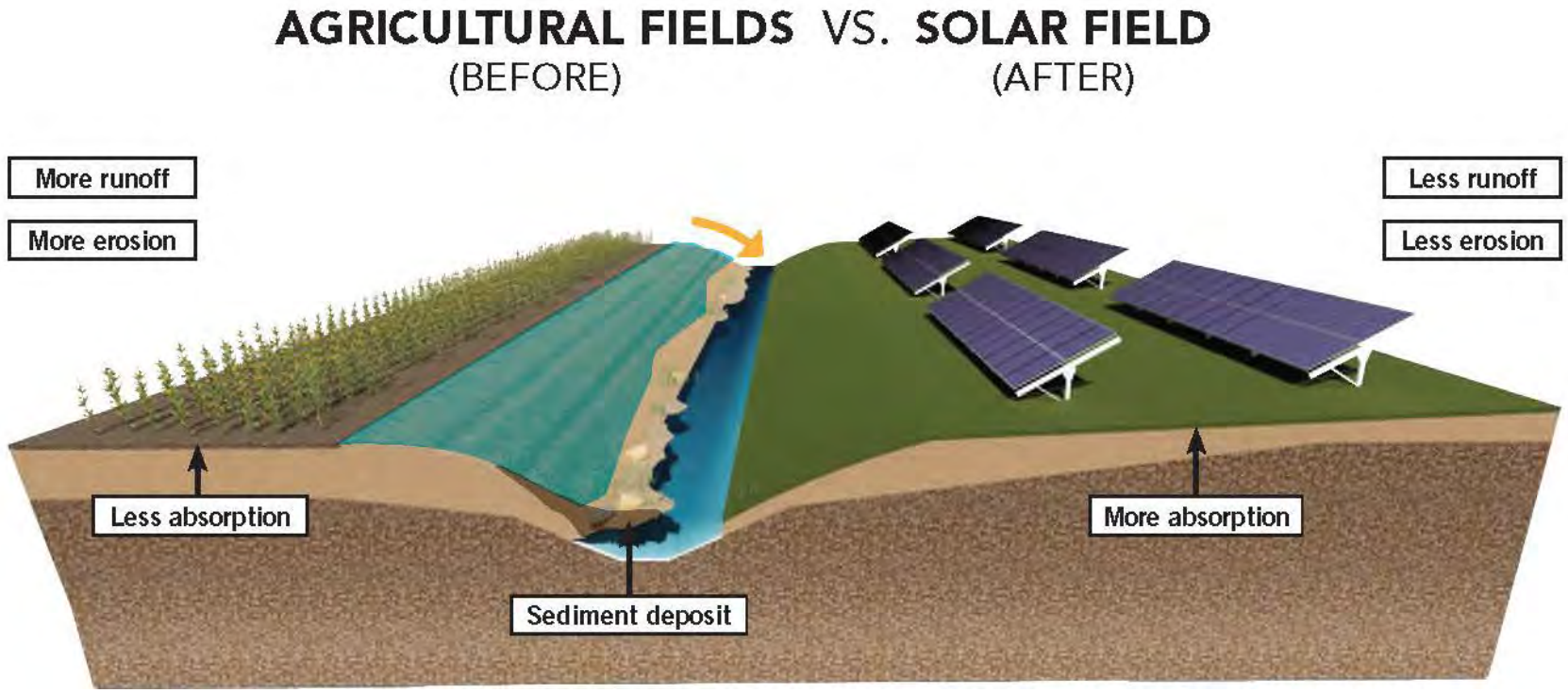
Noise Analysis

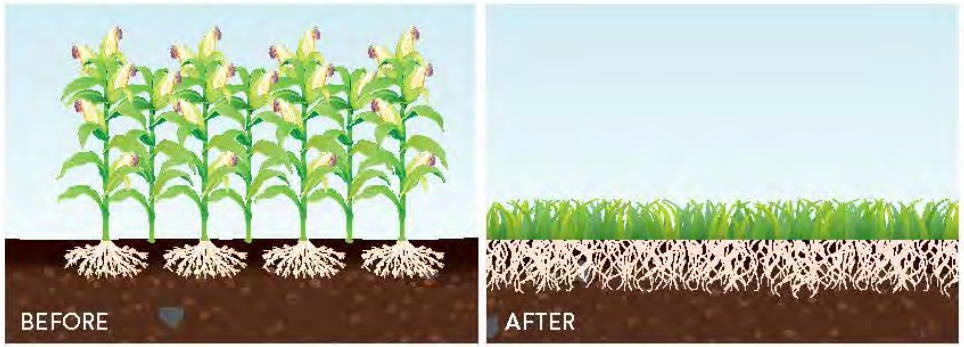
- SoundPlan predicted maximum noise levels at the noise-sensitive land uses surrounding the development.
- The predicted noise levels are below the Illinois Pollution Control Board Octave Band sound pressure level requirements.
- Kimley-Horn expert completed a Noise analysis study to predict noise levels are below noise board pollution requirements
- The equipment pad is ~870’ from the SE home, ~730’ away from the closest NW home, and ~630’ from the closets SW home. The noise study analyzed predicted sound levels at noise-sensitive areas based on the inverters’ manufacturer's issued noise data using a modeling program called SoundPLAN.

Figure 3: Operational Sound Contours



Stormwater



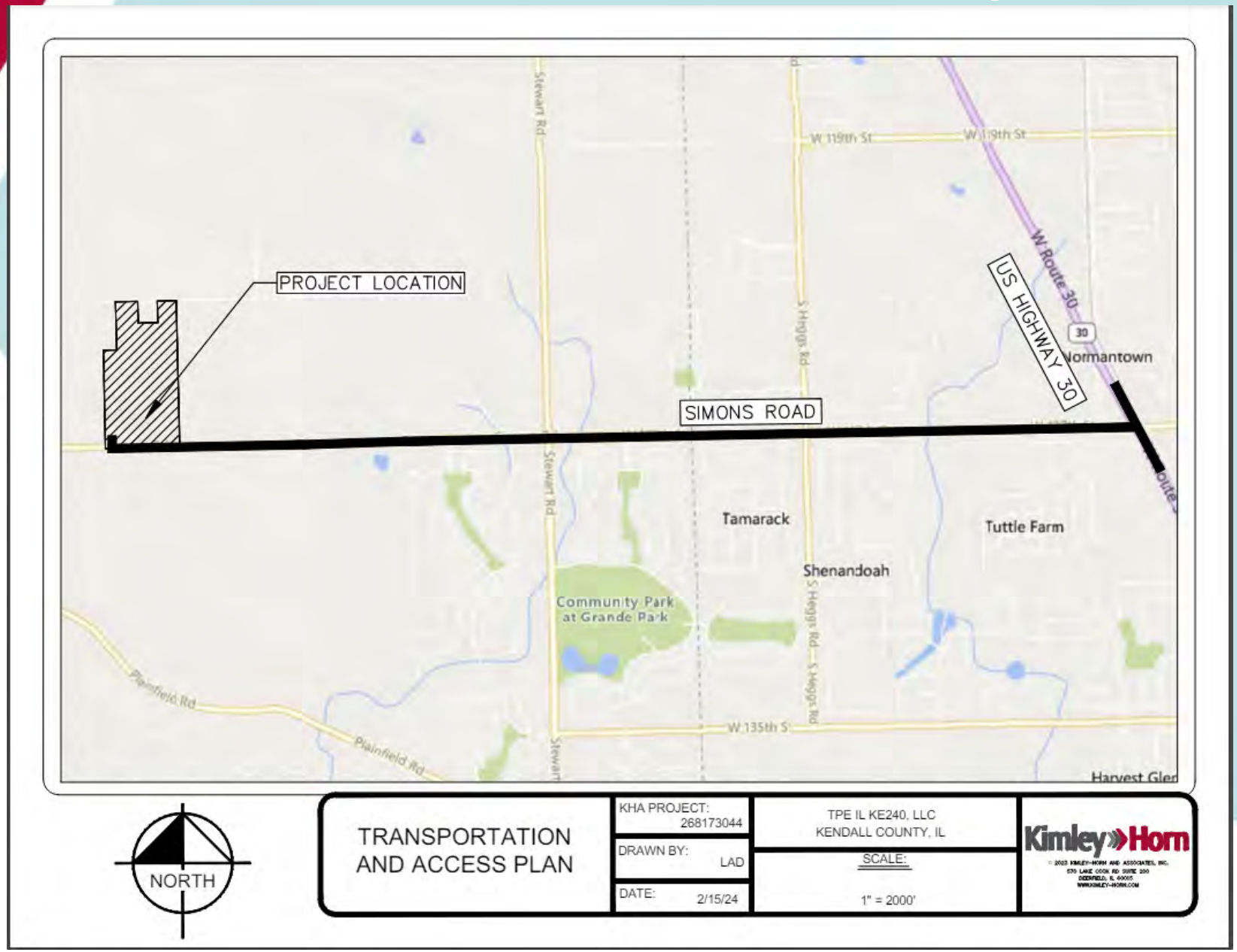


Kimley»Horn

Ground Cover



Transportation Plan



Decommissioning Plan

- End of project's life cycle the project will be decommissioned and it complies with the requirements of AIMA and Kendall County
- Will provide financial security in the amount required per Kendall County code requirements
- Cost based on 25-Year Inflation (3%/year)
- Labor, material, and equipment rates are based on the RSMeans City Cost Index (CCI) for La Selle, IL.

Environmental Overview

- TPE IL KE240 completed a detailed Environmental Constraints Study as part of the Project Siting and Design Process
- The Environmental Constraints Study included review of the Level 1 Wetland Investigation (Desktop delineation) conducted by Kimley-Horn.
- As part of the Environmental Constraints Study, TPE completed consultation with the IDNR and formally submitted to SHPO for consultation
- The IDNR Termination of Consultation and SHPO Response Letter are included in the application



CohnReznick
ADVISORY • ASSURANCE • TAX

PROPERTY VALUE IMPACT STUDY: SOLAR FARM PROXIMITY

May 2024

CohnReznick LLP

A member of Nexia International

CohnReznick is an independent member of Nexia International



Erin C. Bowen, MAI

Director
Valuation Advisory Services, CohnReznick LLP
Phoenix, AZ
404-847-7740 Erin.Bowen@CohnReznick.com

Licenses and Accreditations

- Designated Member of the Appraisal Institute (MAI)
- Certified General Real Estate Appraiser in the states of:
  - ✓ Arizona
  - ✓ California
  - ✓ Nevada
  - ✓ Oregon

Professional Affiliations

- Member of the Appraisal Institute (MAI)

Education

- University of California, San Diego: Bachelors

Disclaimer: *This summary of our conclusions is limited to the intended use, intended users (TurningPoint Energy), and for the purpose of addressing local concerns regarding a solar facility use having a perceived impact on surrounding property values. No part of this report may be reproduced or modified in any form, or by any means, without the prior written permission of CohnReznick, LLP.*


CohnReznick
DOES PROXIMITY TO
SOLAR FARMS IMPACT
PROPERTY VALUES?

CohnReznick



ACADEMIC STUDIES

SOLAR FARM ACADEMIC STUDIES

U of Texas- Austin

- May 2018
- Opinion Survey of Assessors
- 37 out of 400 Responses Received
- Only 18 had experience in valuing homes near solar
- 17 out of 18 had found no impact
- “Future research can conduct analyses on home sales data to collect empirical evidence of actual property value impacts”

U of Rhode Island

- September 2020
- Hedonic Pricing Model
- 208 Solar Facilities
- 71,373 Test Sales
- 343,921 Control Sales
- Study found no negative impact to homes in “Rural Locations”
- Defines Rural as a place with less than 850 persons per Sq Mile
- Found no evidence of differential property value impacts based by the solar installation’s size

U of Georgia Institute of Technology

- October 2020
- 451 Solar Farms in NC
- “Across many samples and specifications, we find no direct negative or positive spillover effect of a solar farm construction on nearby agricultural land values.”

Berkeley National Lab “BNL” Study

- March 2023
- Hedonic Regression Model
- 1.8 Million Sales in CA, CT, MA, MN, NC and NJ
- Found no impact in CA, MA or CT – which accounted for 70% of the data
- Found only small impact of 1.7% across study
- “Our results should not be applied to larger projects, e.g. those > than 18 MW…”

Berkeley National Lab Perceptions of Large-Scale Solar Project Neighbors

- April 2024
- National Survey
- Nearly 1,000 respondents of residents within 3-miles of large scale solar
- Among LSS neighbors, “positive” attitudes outnumber “negative” by nearly a 3 to 1 margin.
- Roughly 1/3 of residents living within 3 miles of LSS projects did not know their local project existed.

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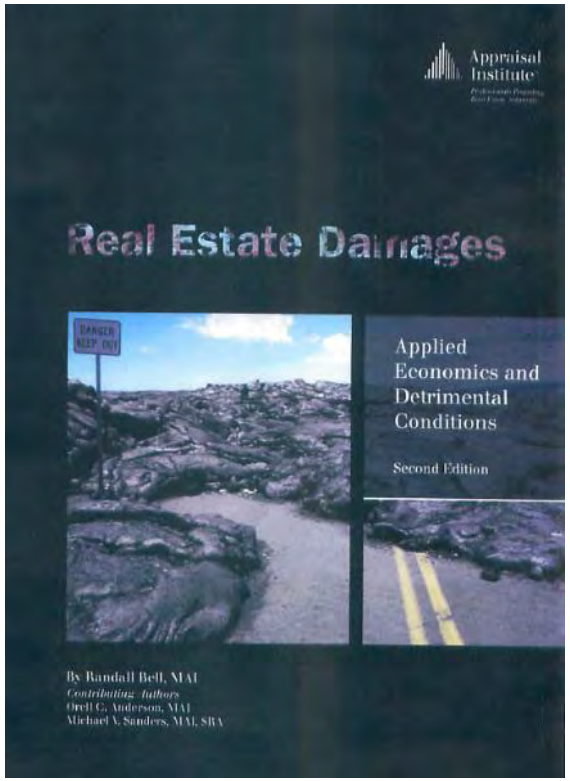

CohnReznick
CR CASE STUDIES

IMPACT STUDY - METHODOLOGY

- We have studied a number of established wind facilities across the U.S.
  - Reviewed published studies
  - Interviewed market participants (real estate assessors and real estate brokers)
  - Prepared paired sales analyses to compares potentially impacted properties located in ***"Test Areas"*** with unimpacted properties called ***"Control Areas"***.

Test Areas: A group of sales located adjacent to Existing Solar Farms.

Control Areas: A group of otherwise similar properties not located adjacent to Existing Solar Farms.



- *"If a legitimate detrimental condition exists, there will likely be a **measurable and consistent** difference between the two sets of market data; if not, there will likely be no significant difference between the two sets of data."*

-From the Appraisal Institute's textbook, *Real Estate Damages,* page 25

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TEST & CONTROL PROPERTY SELECTION CRITERIA

Test Area Sales are:

- Located directly adjacent existing solar farm
- Properties that sold after the construction of the solar farm
- Arm's Length transactions
- Not distressed sales (no foreclosures, short sales, bank-owned sales)

Control Area Sales are:

- Similar in construction, age, and size to the Test Area Sales
- In a surrounding township that did not contain solar farms.
- Properties sold after the construction of the solar farm, and within approximately 18 months before or after the Test Sale property
- Arm's Length transactions
- Not distressed sales (no foreclosures, short sales, bank-owned sales)

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SOLAR FARM PROXIMITY IMPACT STUDIES

- CohnReznick has studied more than 40 established solar facilities across the U.S. and performed paired sales analysis of homes and farm land adjacent to solar installations.
  - No measurable and consistent difference in property values for properties adjacent to solar farms when compared to similar properties locationally removed from their influence.
  - No difference in unit sale prices, conditions of sale, overall marketability, rate of appreciation.
  - Solar Facilities did not deter new development.
  - Performed “Before and After Construction” property value analysis which found that single-family homes adjacent to the solar projects exhibit a similar appreciation trend to sales locationally removed from solar farms both before and after the construction of the solar farm project. The adjacent property appreciation rates were consistent with the rate indicated by the Federal Housing Finance Agency’s House Price Index for the local regional area.

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FREEPORT SOLAR CSG, STEPHENSON CO, IL



Test Area Sale 1



Test Area Sale 2

CohnReznick Paired Sales Anaysis 2662 Freeport Solar 1 CSG		
No. of Sales	**Potentially Impacted by Solar Farm**	**Adjusted Median Price Per SF**
Test Area Sales (2)	Yes: Adjoining solar farm	$77.33
Control Area Sales (14)	No: Not adjoining solar farm	$76.08
Difference between Unit Price of Test Area Sale and Adjusted Median Unit Price of Control Area Sales		**1.65%**

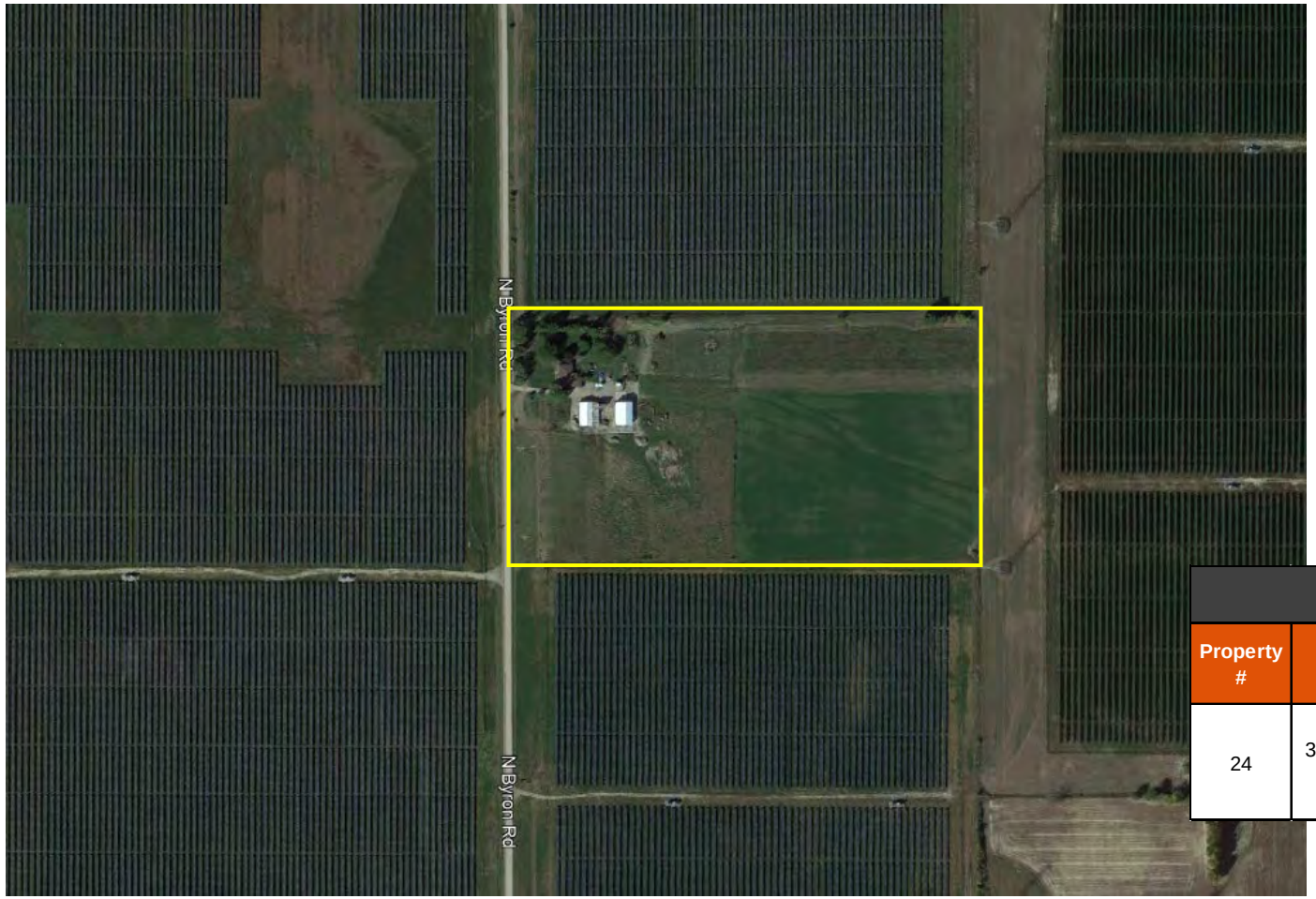


2023 Aerial Imagery

Target Sales had marketing times (40 to 51 DOM) that were within market (median of 61 Days). Also, confirmed sales with Julie Wenzel of RE/MAX Town Lake & Country who indicated that proximity to the solar farm did not impact the sale price of the properties.

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ASSEMBLY SOLAR FARM, SHIAWASSEE COUNTY, MI

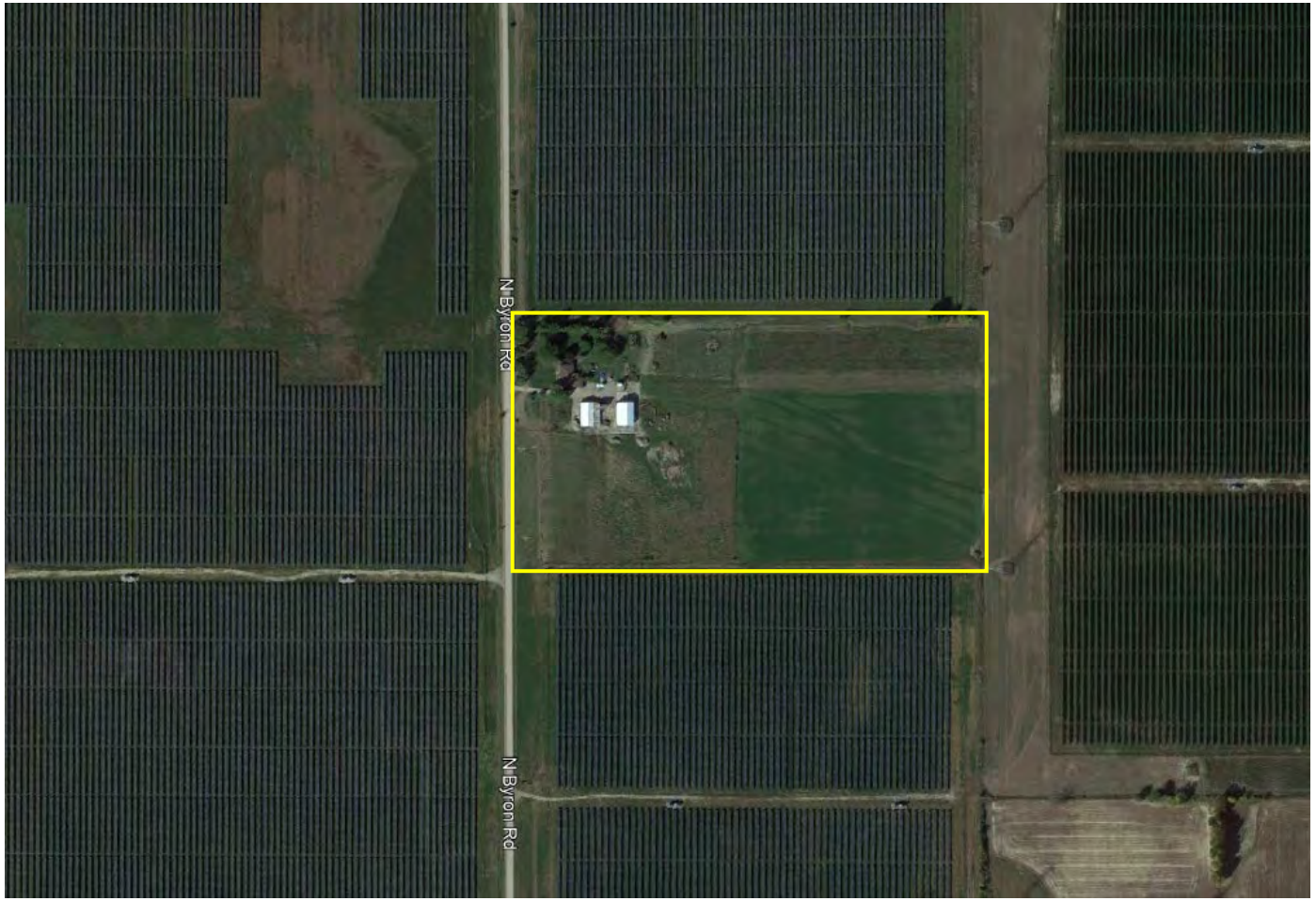


239 MW AC Output,
1,900 Acres Land Area
Date Project Announced:
January 2019
Date Project Completed:
January 2022

SUMMARY OF TEST AREA SALE Group 1 - Assembly Solar Farm									
Property #	Address	Sale Price	Beds/ Baths	Year Built	Home Size (SF)	Improvements	Site Size (AC)	Sale Price / SF	Sale Date
24	3496 N. Byron Road	$321,999	3/2	1974	1,851	Single-Family Home with Finished Basement, Enclosed Porch, and Farm Structures	20.00	$173.96	Sep-21

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ASSEMBLY SOLAR FARM, SHIAWASSEE COUNTY, MI



CohnReznick Paired Sale Analysis Assembly Solar Farm - Group 1		
No. of Sales	**Potentially Impacted by Solar Farm**	**Adjusted Median Price Per SF**
Test Area Sale (1)	Adjoining solar farm	$173.96
Control Area Sales (7)	No: Not adjoining solar farm	$164.90
Difference between Unit Price of Test Area Sale and Adjusted Median Unit Price of Control Area Sales		**5.49%**

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ASSEMBLY SOLAR FARM, SHIAWASSEE COUNTY, MI



Adjoining Property 28 Resale

After selling in May 2021 for $215,000, Adjoining Property 28 sold again in March 2023 for $250,000, an overall 16.28% increase in sale price or an increase of 0.70% per month in sale price in between the two dates of sale.

The FHFA Home Price Index for the zip code for this same time period showed a monthly appreciation rate of 0.67%

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CohnReznick
NEW DEVELOPMENT

DOMINION INDY SOLAR III, MARION COUNTY, IN



Home built ~150 feet from Indy III solar project with on-site pool and attached garage

(Home cost estimated at $450,000 - October 2015)



Sept. 2014 Image, Solar Farm built 2013



Completed Estate Home
Oct 2016 – 3 Years AFTER Solar Farm

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DOMINION INDY SOLAR III, MARION COUNTY, IN



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PORTAGE SOLAR, PORTER COUNTY, IN

Lennar at Brookside Subdivision:
Under Construction

- 79 homes sold since March 2023, ranging from $349,000 to $419,990 (3 within 125 feet of a solar panel
- 9 active listings (3 move-in ready, 6 under construction) ranging from $348,990 to $402,879
- Total of 175 homes in community
- 125 feet from lot line to panels



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MARKET PARTICIPANT INTERVIEWS

CONFIRMATIONS

CohnReznick's interviews with over 75 County Assessors across 20 States, as well as interviews with ±25 local brokers and market participants indicate overwhelmingly that there is no data available to indicate that solar projects negatively impact adjacent property values in any consistent and measurable way.

We have interviewed assessors and real estate brokers in the following states:		
• California	• Iowa	• Nevada
• Colorado	• Kentucky	• New York
• Florida	• Louisiana	• North Carolina
• Georgia	• Maine	• Ohio
• Hawaii	• Michigan	• Pennsylvania
• Illinois	• Minnesota	• Virginia
• Indiana	• Missouri	• Wisconsin

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CONCLUSIONS

CONCLUSIONS:

- Based upon our examination, research, and analyses of the existing solar farm uses, the surrounding areas, and an extensive market database, we have concluded that **no consistent negative impact has occurred to adjacent property that could be attributed to proximity to the adjacent solar farm**, with regard to unit sale prices or other influential market indicators.

- This conclusion has been confirmed by numerous county assessors who have also investigated this use's potential impact on property values.

- This conclusion has been confirmed by academic studies utilizing large sales databases and regression analysis investigating this use's potential impact on property values.

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May 15, 2024

Mr. Matt Asselmeier
Director, Kendall County Zoning
111 W Fox St
Yorkville, IL 60560

RE: Oswego Township Solar Farm

Dear Mr. Asselmeier:

This letter addresses concerns and objections regarding the proposed solar farm in Oswego Township. I believe Kendall County feels hamstrung by Public Act 102-1123 from the 102nd General Assembly. It's important to note Public Act 102-1123 was filed as HB4412, a bill addressing telehealth options for athletic trainers, passing the House of Representatives with 103 yeas, 0 nays, and 1 present. The bill was then completely gutted and replaced in the Senate with language removing your ability to define what happens in your communities. Adding insult to injury, the gutting and replacing occurred during *lame duck*, passing purely along partisan lines.

Is this process how you truly want your government representing you? Place party politics aside and truly answer this question for yourself. There's no end to these shenanigans until someone tells Illinois no. Accordingly, please vote no on the Oswego Township Solar Farm simply on principle. Local governments must remind the state government, they work for you, not the other way around. I encourage counties to unite and challenge Public Act 102-1123 through the judicial system. Please reach out with any comments or questions. I'm always here to help, my cell is [redacted] Thank you!

Sincerely,

[redacted]

Jed Davis
State Representative - 75th District - Illinois State House of Representatives

CC: Maddie McElroy, District Director - 75th District
Matt Kellogg, Chair - Kendall County Board
Joy Lieser, Resident - Kendall County (via email j[redacted]

JRD/jrd

SOYBEAN INKS

The Dark Side of Solar Pow

As interest in clean energy surges, used solar panels are going stra into landfill. by Atalay Atasu, Serasu Duran, and Luk N. Van Wassenhove

June 18, 2021



HollenderX2/Getty Images

Summary. Solar energy is a rapidly growing market, which should be good news for the environment. Unfortunately there's a catch. The replacement rate of solar panels is faster th expected and given the current very high recycling costs, there's a real danger that all used will go straight to landfill (along with equally hard-to-recycle wind turbines). Regulators and industry players need to start improving the economics and scale of recycling capabilities be the avalanche of solar panels hits. close

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It's sunny times for solar power. In the U.S., home installations of s panels have fully rebounded from the Covid slump, with analysts predicting more than 19 gigawatts of total capacity installed, compared t gigawatts at the close of 2019. Over the next 10 years, that number may quadruple, according to industry research data. And that's not even taki into consideration the further impact of possible new regulations and incentives launched by the green-friendly Biden administration.

Solar's pandemic-proof performance is due in large part to the Solar Investment Tax Credit, which defrays 26% of solar-related expenses for residential and commercial customers (just down from 30% during 200 2019). After 2023, the tax credit will step down to a permanent 10% for commercial installers and will disappear entirely for home buyers. Therefore, sales of solar will probably burn even hotter in the coming months, as buyers race to cash in while they still can.

Tax subsidies are not the only reason for the solar explosion. The conve

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talking about.

Panels, Panels Everywhere

Economic incentives are rapidly aligning to encourage customers to trac their existing panels for newer, cheaper, more efficient models. In an industry where circularity solutions such as recycling remain woefully inadequate, the sheer volume of discarded panels will soon pose a risk o existentially damaging proportions.

To be sure, this is not the story one gets from official industry and government sources. The International Renewable Energy Agency (IRENA)'s official projections assert that "large amounts of annual wast anticipated by the early 2030s" and could total 78 million tonnes by the 2050. That's a staggering amount, undoubtedly. But with so many years prepare, it describes a billion-dollar opportunity for recapture of valuab materials rather than a dire threat. The threat is hidden by the fact that IRENA's predictions are premised upon customers keeping their panels place for the entirety of their 30-year life cycle. They do not account for possibility of widespread early replacement.

Our research does. Using real U.S. data, we modeled the incentives affec consumers' decisions whether to replace under various scenarios. We surmised that three variables were particularly salient in determining replacement decisions: installation price, compensation rate (i.e., the gc rate for solar energy sold to the grid), and module efficiency. If the cost trading up is low enough, and the efficiency and compensation rate are l enough, we posit that rational consumers will make the switch, regardle whether their existing panels have lived out a full 30 years.

As an example, consider a hypothetical consumer (call her "Ms. Brown" living in California who installed solar panels on her home in 2011. Theoretically, she could keep the panels in place for 30 years, i.e., until 2 At the time of installation, the total cost was $40,800, 30% of which wa deductible thanks to the Solar Investment Tax Credit. In 2011, Ms. Brow could expect to generate 12,000 kilowatts of energy through her solar p

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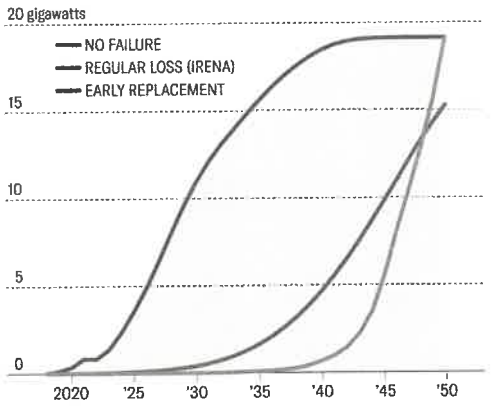
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she does her homework, she finds that that is very much the case. Going actual current projections, the Ms. Brown of 2026 will find that costs associated with buying and installing solar panels have fallen by 70% fr where they were in 2011. Moreover, the new-generation panels will yiel $2,800 in annual revenue, $700 more than her existing setup when it w new. All told, upgrading her panels now rather than waiting another 15 will increase the net present value (NPV) of her solar rig by more than $3,000 in 2011 dollars. If Ms. Brown is a rational actor, she will opt for replacement. And if she were especially shrewd in money matters, she w have come to that decision even sooner — our calculations for the Ms. B scenario show the replacement NPV overtaking that of panel retention starting in 2021.

The Solar Trash Wave

According to our research, cumulative waste projections will rise far sooner and more sharply than most analysts expect, as the below graph shows. The green "no failure" line tracks the disposal of panels assuming that no faults occur over the 30-year life cycle; the blue line shows the official International Renewable Energy Agency (IRENA) forecast, which allows for some replacements earlier in the life cycle; and the red line represents waste projections predicted by our model.



Source: International Renewable Energy Agency, Electricity Data Browser, Global Solar Atlas

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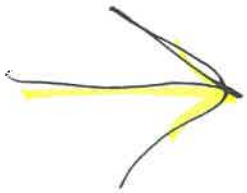
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much, much larger.

The High Cost of Solar Trash

The industry's current circular capacity is woefully unprepared for the deluge of waste that is likely to come. The financial incentive to invest in recycling has never been very strong in solar. While panels contain small amounts of valuable materials such as silver, they are mostly made of glass, an extremely low-value material. The long life span of solar panels also serves to disincentivize innovation in this area.

As a result, solar's production boom has left its recycling infrastructure in the dust. To give you some indication, First Solar is the sole U.S. panel manufacturer we know of with an up-and-running recycling initiative, which only applies to the company's own products at a global capacity of two million panels per year. With the current capacity, it costs an estimated $20–$30 to recycle one panel. Sending that same panel to a landfill would cost a mere $1–$2.



The direct cost of recycling is only part of the end-of-life burden, however. Panels are delicate, bulky pieces of equipment usually installed on rooftops in the residential context. Specialized labor is required to detach and remove them, lest they shatter to smithereens before they make it onto the truck. In addition, some governments may classify solar panels as hazardous waste due to the small amounts of heavy metals (cadmium, lead, etc.) they contain. This classification carries with it a string of expensive restrictions — hazardous waste can only be transported at designated times and via select routes, etc.

The totality of these unforeseen costs could crush industry competitiveness. If we plot future installations according to a logistic growth curve capped at 700 GW by 2050 (NREL's estimated ceiling for the U.S. residential market) alongside the early-replacement curve, we see the volume of waste surpassing that of new installations by the year 2031. By 2035, discarded panels would outweigh new units sold by 2.56 times. In turn, this would catapult the LCOE (levelized cost of energy, a measure of the overall cost

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few years, the U.S. government — starting with the states, but surely escalating to the federal level — will introduce solar panel recycling legislation. Conceivably, future regulations in the U.S. will follow the mo of the European Union's WEEE Directive, a legal framework for the recycling and disposal of electronic waste throughout EU member state The U.S. states that have enacted electronics-recycling legislation have mostly cleaved to the WEEE model. (The Directive was amended in 201 include solar panels.) In the EU, recycling responsibilities for past (histo waste have been apportioned to manufacturers based on current marke share.

A first step to forestalling disaster may be for solar panel producers to st lobbying for similar legislation in the United States immediately, instea waiting for solar panels to start clogging landfills. In our experience dra and implementing the revision of the original WEEE Directive in the lat 2000s, we found one of the biggest challenges in those early years was assigning responsibility for the vast amount of accumulated waste gene by companies no longer in the electronics business (so-called orphan wa

In the case of solar, the problem is made even thornier by new rules out Beijing that shave subsidies for solar panel producers while increasing mandatory competitive bidding for new solar projects. In an industry dominated by Chinese players, this ramps up the uncertainty factor. Wit reduced support from the central government, it's possible that some Chinese producers may fall out of the market. One of the reasons to pus legislation now rather than later is to ensure that the responsibility for recycling the imminent first wave of waste is shared fairly by makers of equipment concerned. If legislation comes too late, the remaining playe may be forced to deal with the expensive mess that erstwhile Chinese producers left behind.

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companies to accomplish this alone. Government subsidies are probably only way to quickly develop capacity commensurate to the magnitude of looming waste problem. Corporate lobbyists can make a convincing case government intervention, centered on the idea that waste is a negative externality of the rapid innovation necessary for widespread adoption of energy technologies such as solar. The cost of creating end-of-life infrastructure for solar, therefore, is an inescapable part of the R&D pac that goes along with supporting green energy.

It's Not Just Solar

The same problem is looming for other renewable-energy technologies. example, barring a major increase in processing capability, experts expe that more than 720,000 tons worth of gargantuan wind-turbine blades end up in U.S. landfills over the next 20 years. According to prevailing estimates, only five percent of electric-vehicle batteries are currently recycled — a lag that automakers are racing to rectify as sales figures for electric cars continue to rise as much as 40% year-on-year. The only essential difference between these green technologies and solar panels i that the latter doubles as a revenue-generating engine for the consumer separate profit-seeking actors — panel producers and the end consumer thus must be satisfied in order for adoption to occur at scale.

. . .

None of this should raise serious doubts about the future or necessity of renewables. The science is indisputable: Continuing to rely on fossil fuel the extent we currently do will bequeath a damaged if not dying planet t future generations. Compared with all we stand to gain or lose, the four decades or so it will likely take for the economics of solar to stabilize to t point that consumers won't feel compelled to cut short the life cycle of tl panels seems decidedly small. But that lofty purpose doesn't make the s to renewable energy any easier in reality. Of all sectors, sustainable technology can least afford to be shortsighted about the waste it creates. A strategy for entering the circular economy is absolutely essential — an sooner, the better.

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SD **Serasu Duran** is a professor at the University of Calgary's Haskayne School of Business in Calgary, Alberta.

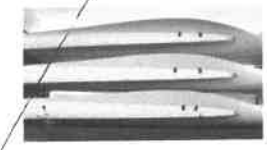
LW **Luk N. Van Wassenhove** is the Henry Ford Chaired Professor of Manufacturing, Emeritus, at INSEAD and leads its Humanitarian Research Group and its Sustainable Operations Initiative.

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