

Natural Resources **Information Report** **22.02**

September 2018

Prepared for
BayWa r.e. Solar Projects, LLC



Champaign County

Soil and Water Conservation District
2110 West Park Court Suite C Champaign, IL 61821
(217) 352-3536 Extension 3 -- www.ccsxcd.com

| |
|---------------------------------------------------------------------------------------------------------------------------|
| <p>CHAMPAIGN COUNTY SOIL AND WATER CONSERVATION DISTRICT NATURAL RESOURCE INFORMATION REPORT (NRI)</p> |
|---------------------------------------------------------------------------------------------------------------------------|

| | |
|------------------------------------------|---------------------------------------|
| Date District Board Reviewed Application | October, 2018 |
| Applicant's Name | BayWa r.e. Solar Projects, LLC |
| Size of Parcel | 1635.6 Acres |
| Present Zoning | Agriculture |
| Champaign County Zoning Meeting Date | November, 2018 |
| Contact Person | George Gunnoe |

| <i>Copies of this report or notification of the proposed land-use change were provided to:</i> | <i>yes</i> | <i>no</i> |
|------------------------------------------------------------------------------------------------|------------|-----------|
| The Petitioner | X | |
| The Contact person | X | |
| The Champaign County Zoning Office | X | |
| The Champaign County Soil Water Conservation District Files | X | |

Report Prepared By: Jonathon Manuel

Position: Resource Conservationist

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Forward:

Soil and Water Conservation Districts are required to prepare Natural Resource Information (NRI) Reports under the Illinois Soil and Water Conservation Act of 1977, Illinois Revised Statutes, Chapter Five.

Section 22.02a The Soil and Water Conservation District shall make all natural resource information available to the appropriate county agency or municipality in the promulgation of zoning, ordinances or variances. Any person who petitions any municipality or county agency in the district for variation, amendment, or other relief from municipality's or county's zoning ordinance or who proposes to sub-divide vacant or agricultural lands therein shall furnish a copy of such petition or proposal to the Soil and Water Conservation District. The Soil and Water Conservation District shall be given not more than thirty days from the time of receipt of the petition or proposal to issue its written opinion concerning the petition or proposal and submit the same to the appropriate county agency or municipality for further action. Added by Act approved December 3, 1971.

This report provides technical data necessary to evaluate the natural resources of a specific area and the impacts or limitations associated with the proposed land use change. The report is limited to information researched by the Champaign County Soil and Water Conservation District staff. (Technical information is obtained from a number of different sources and may be subject to modification based on detailed site investigations or new technical information.) The information gathered in this report comes from several key reference materials and are cited throughout this report and listed in the Reference section. Any questions on the information contained in this report can be directed to:

Champaign County Soil and Water Conservation District
2110 W. Park Court, Suite C
Champaign, IL 61821
Phone 217-352-3536 ext. 3

Prairie Solar One - 2

Date: 10/1/2018

Field Office: CHAMPAIGN SERVICE CENTER

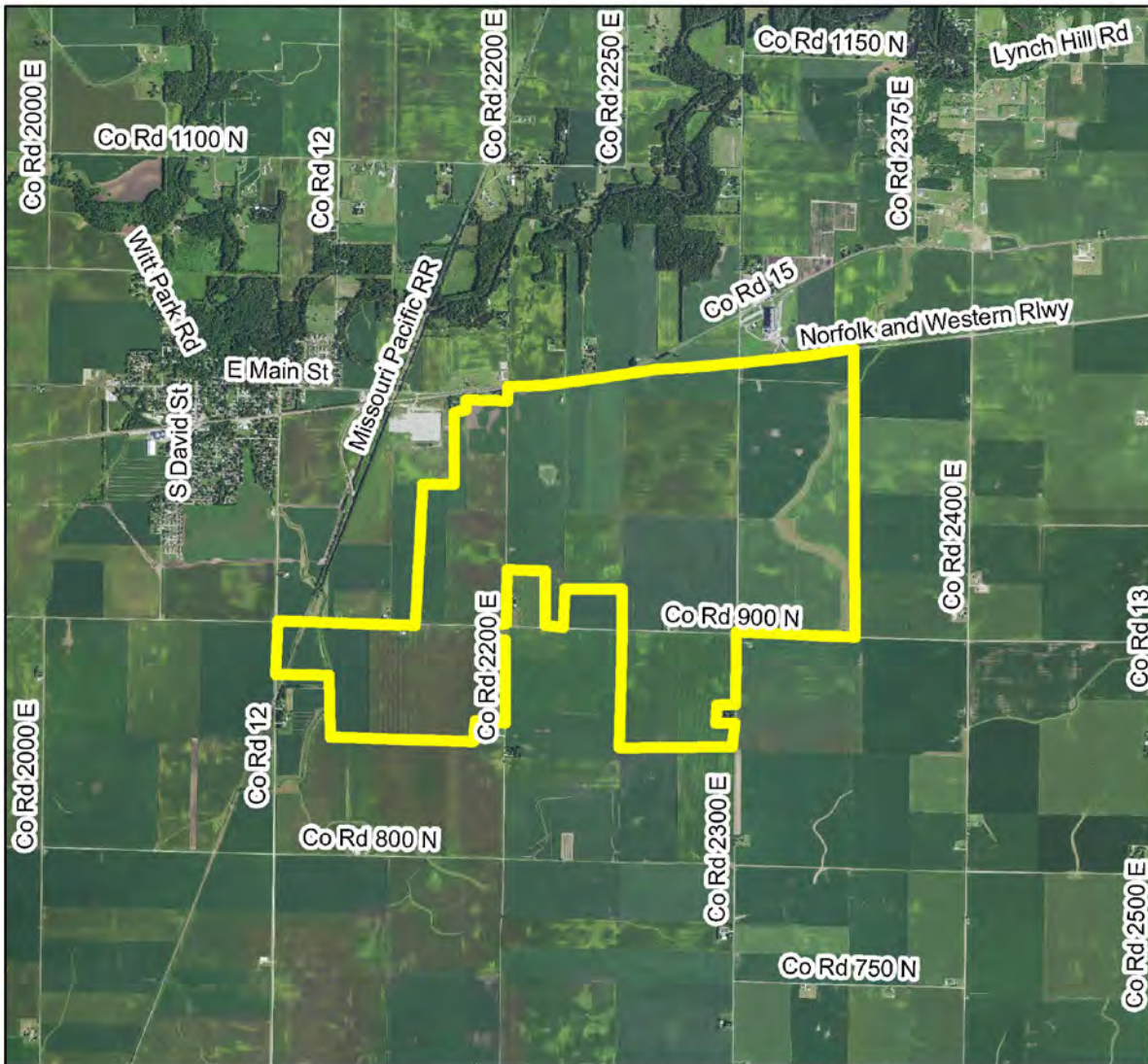
District: CHAMPAIGN COUNTY SOIL & WATER CONSERVATION DISTRICT

Assisted By: JONATHON MANUEL

Aerial 2015

State and County: IL, Champaign County, Illinois

Legal Description: Sections 11, 14, 15, 22 T.18 N., R. 10 E.



Prepared with assistance from USDA-Natural Resources Conservation Service



Legend

-  Prairie Solar One 2
- fe_2007_17019_edges



Concerns of the Board

The Champaign County Soil and Water Conservation District has reviewed the proposed land use change and has some concerns relevant to the impact on the areas natural resources. The reader is advised to consider the following information contained in this report.

- 1) **Special attention should be paid to any sanitation placed on the property. The Champaign County Health Department should be contacted for the best septic design.**
- 2) The land is now in agricultural use. **Underground tile drainage is an important aspect of the modern farm operation and this field may contain drainage tile, care should be taken to locate, reroute and/or maintain the tile.** If there is tile in the field and it is not maintained it could potentially cause major problems in the future.
- 3) The area to be developed has 2 different Drainage Districts, please work with the commissioners to assure proper drainage remains in place.
 - a. The far East one is Drainage District #1 of the Town of Sidney Champaign County District #19
 - b. The far West Drainage District is Town of Sidney Drainage District #2, Champaign County District #20
- 4) **Land Evaluation (LE) Score: The average LE Score for this site is 99**

Technical Data

Included in this report you will find numerous publications and specific recommendations for construction site erosion control. The erosion control practices work effectively only if they are installed timely and correctly and then properly maintained. This information is also available from the Champaign County SWCD office in Champaign and the Illinois Urban Manual.

Erosion Control: construction sites can experience 20 to 200 tons/acre/year of soil loss, which is greater than other land uses like agriculture averaging 4-5 tons/acre/year. Sediment entering creeks, rivers and lakes degrade water quality and reduce capacity, which increases the risk of flooding. Sediment also carries other possible pollutants such as chemicals and metals by adhering to the sediment's surface. It is extremely important that the developer employ Best Management Practices, like the ones listed below, to help reduce soil erosion and protect water quality during construction and after.

- **Silt Fencing:** a woven geotextile fabric stretched across and attached to supporting posts used to intercept sediment-laden runoff from small drainage areas of disturbed soil. The purpose is to filter out sediment from runoff before it enters a water body. Silt fence should be used to intercept concentrated flows of runoff into the detention basin or exiting the site into a ditch. Silt fence should also be routinely inspected and maintained to ensure proper installation and operation. (Please see attachment A)
- **Construction Road Stabilization:** the stabilization of temporary construction access routes, subdivision roads, on-site vehicle transportation routes, and construction parking areas with stone immediately after grading the area. The purpose of this practice is to reduce erosion areas. (Please see attachment B)
- **Vegetative Cover -** is one of the most important means to control runoff and sedimentation. Planting temporary vegetation around the perimeter of the construction site provides a good natural buffer to filter sediment and chemicals. The SWCD recommends that a temporary grass be planted in the areas that will not be disturbed. This vegetation will help protect soil from erosion during construction. A permanent vegetative filter strip will be extremely important in protecting the storm water detention basin from runoff. If at any time during construction land is left exposed for more than 30 days it should be temporarily seeded with some sort of vegetation like oats or rye. Temporary seeding is very important to stabilize the soil. After cuts are completed on bare soil slopes and road ditches temporary seeding must be established. See table 1 below for Temporary Seeding rates (Illinois Urban Manual).

OPERATION AND MAINTENANCE

Reseed areas where seedling emergence is poor, or where erosion occurs, as soon as possible. Protect from vehicular and foot traffic. Control weeds by mowing.

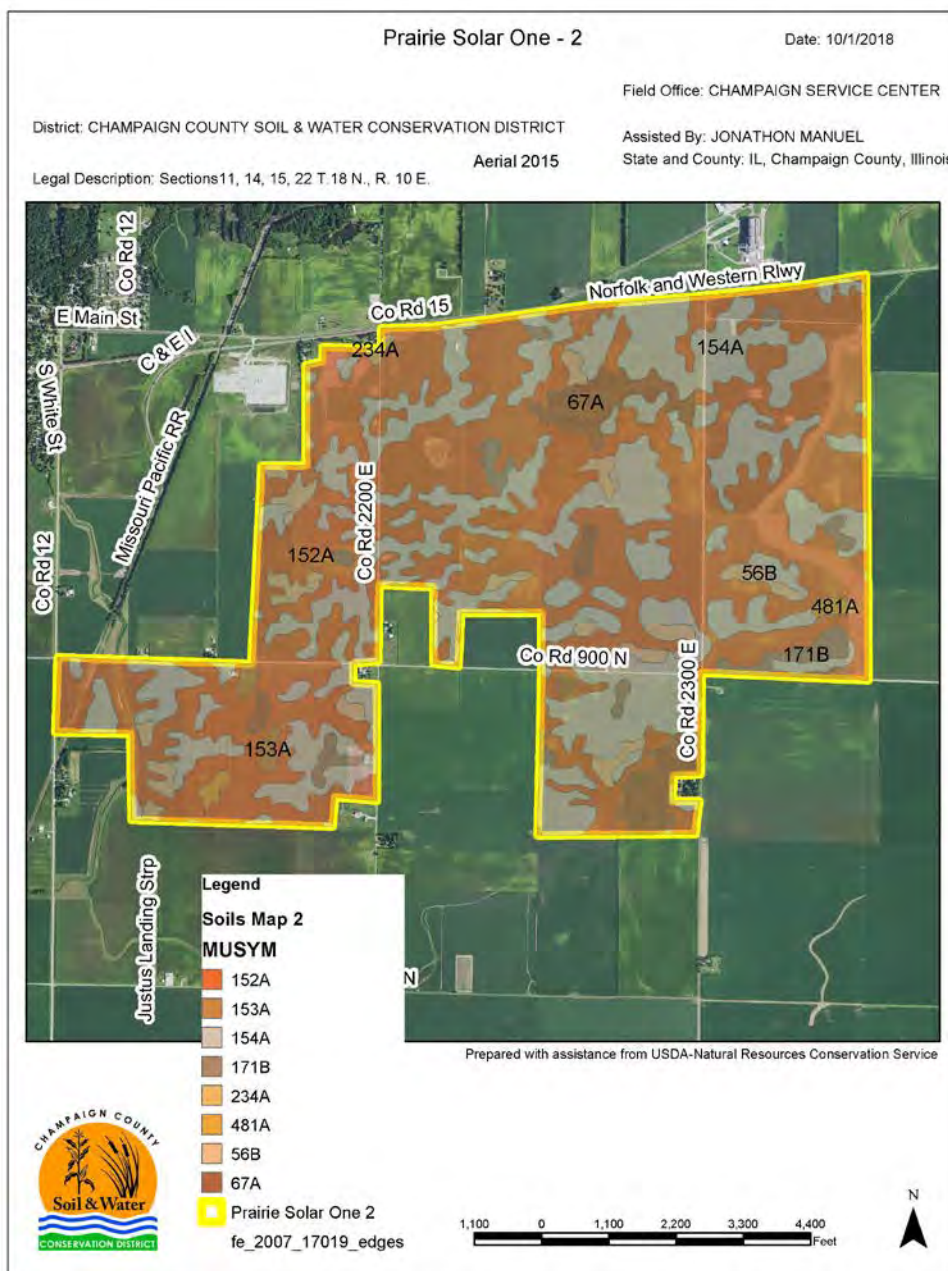
TEMPORARY SEEDING SPECIES, RATES AND DATES

| Species | Lbs./Acre | Lbs./1000 ft.2 | Seeding Dates |
|---------------------|-----------|----------------|-------------------------|
| Oats | 90 | 2 | Early spring – July 1 |
| Cereal Rye or Wheat | 90 | 2 | Early spring – Sept. 30 |
| Perennial Ryegrass | 25 | 0.6 | Early spring – Sept. 30 |

Soil Information

The Soil information comes from United States Department of Agriculture, Natural Resources Conservation Service Soil Survey of Champaign 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 building without basements.



| SYMBOL | DESCRIPTION | ACRES | PERCENT |
|---------------|---------------------------------------------------------------|--------------|----------------|
| 152A | Drummer silty clay loam, 0-2% slopes | 939.5 | 54.8 % |
| 154A | Flanagan silt loam, 0-2% slopes | 580.4 | 33.8 % |
| 67A | Harpster silty clay loam, 0-2 % slopes | 70.4 | 4.1% |
| 56B | Dana silt loam, 2 to 5 % slopes | 67.2 | 3.9% |
| 171B | Catlin silt loam, 2 to 5 % slopes | 36.7 | 2.1% |
| 153A | Pella silty clay loam, 0 to 2% slopes | 10.6 | 0.6% |
| 481A | Raub silt loam, non-densic substratum, 0 to 2 % slopes | 7.9 | 0.5% |
| 234A | Sunbury silt loam, 0 to 2% slopes | 2.5 | 0.1% |

Soil Interpretations Explanation

Nonagricultural

General

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 the 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 slight, moderate, and severe 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 type of building limitation 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.

The area of development will be susceptible to erosion both during and after construction. Any areas left bare for more than 7 days should be temporarily seeded or mulched and permanent vegetation needs to be established as soon as possible

Limitations Ratings

1. ***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.
2. ***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.
3. ***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.

EPA REQUIREMENT

EPA Stormwater Pollution Prevention Plan (SWPPP) Reference Tool:

EPA requires a plan to control storm water pollution plan for all construction sites over 1 acre in size. *A Guide for Construction Sites* is a reference tool for construction site operators who must prepare a SWPPP in order to obtain NPDES permit coverage for their storm water discharges. The guide describes the SWPPP development process and provides helpful guidance and tips for developing and implementing an effective plan. Two model plans, based on hypothetical sites, are now available as a supplement to the guide. The first example plan is for a medium-sized residential subdivision and the second is for a small commercial site. Both examples utilize the SWPPP template that is included in the guide.

To view the guide, models and template, visit
<http://www.epa.gov/npdes/swpppguide>.

A new small lots plan can be found at this website location:
<http://www.epa.gov/npdes/stormwater-discharges-construction-activities#resources>

Low impact development:

The EPA's new report, "Reducing Storm water Costs through Low Impact Development (LID) Strategies and Practices." Provides ideas to improve water quality through unique designs. The report contains 17 case studies from across North America that show using LID practices in construction projects can lower costs while improving environmental results. LID practices are innovative storm water management practices used to manage

urban storm water runoff at its source. The goal of LID practices is to mimic the way water moves through an area before development occurs, which is achieved using design techniques that infiltrate, evapotranspiration and reuse runoff close to its source. Some common LID practices include rain gardens, grassed swales, cisterns, rain barrels, permeable pavements and green roofs. LID practices increasingly are used by communities across the country to help protect and restore water quality. For a copy of the report, go to www.epa.gov/owow/nps/lid/costs07.

SANITARY FACILITIES

The Table below shows the degree and kind of soil limitations that affect septic tank absorption fields and sewage lagoons.

The limitations are considered **Not limited** if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome. The limitations are considered **Somewhat limited** if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations. The limitations are considered **Very limited** if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Septic Tank Absorption Fields: these are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 to 72 inches is evaluated. The ratings are based on soil properties, site features and observed performance of the soils. Permeability, high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation. Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Groundwater can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

| SYMBOL | Septic Tank Absorption Fields | ACRES | PERCENT |
|--------|-----------------------------------------------------------------------------------------------------------|-------|---------|
| 152A | VERY LIMITED: ponding, 1 ft depth to saturated zone, slow water movement, seepage in bottom layer | 939.5 | 54.8 % |
| 154A | VERY LIMITED: 1 ft depth to saturated zone, slow water movement | 580.4 | 33.8 % |
| 67A | VERY LIMITED: ponding, 1 ft depth to saturated zone, slow water movement | 70.4 | 4.1% |
| 56B | VERY LIMITED: 1 ft depth to saturated zone, slow water movement, flooding, seepage in bottom layer | 67.2 | 3.9% |

| | | | |
|------|----------------------------------------------------------------------------------------------------------|------|------|
| 171B | VERY LIMITED: 1 ft depth to saturated zone, slow water movement | 36.7 | 2.1% |
| 153 | VERY LIMITED: ponding, 1 ft depth to saturated zone, slow water movement, seepage in bottom layer | 10.6 | 0.6% |
| 481A | VERY LIMITED: 1 ft depth to saturated zone, slow water movement | 7.9 | 0.5% |
| 234A | VERY LIMITED: 1 ft depth to saturated zone, slow water movement | 2.5 | 0.1% |

Building Site Development

The Table below shows the degree and the kind of soil limitations that affect dwellings with or without basements and small commercial buildings.

The limitations are considered **Not limited** if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome. The limitations are considered **Somewhat limited** if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations. The limitations are considered **Very limited** if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Dwellings and Small Commercial Buildings: these are structures built on a shallow foundation on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements and, for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high-water table, depth to bedrock or to a cemented pan, large stones, slope, and flooding, affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

| Symbol | Dwellings With Basement | Dwellings Without Basements | Small Commercial Buildings | Acres | Percent |
|--------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------|---------|
| 152A | Very limited: Shrink-swell potential, ponding, 1 ft depth to saturated | Very limited: Shrink-swell potential, ponding, 1 ft depth to saturated | Very limited: Shrink-swell potential, ponding, 1 ft depth to saturated | 939.5 | 54.8% |

| | | | | | |
|------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------|-------|
| 154A | Very limited: Shrink-swell potential, 1 ft depth to saturated | Somewhat limited: Shrink-swell potential, 1 ft depth to saturated | Somewhat limited: Shrink-swell potential, 1 ft depth to saturated | 580.4 | 33.8% |
| 67A | Very Limited: shrink-swell potential, ponding, 1 ft depth to saturated zone | Very Limited: 1 ft depth to saturated zone, ponding, shrink-swell potential | Very limited: Shrink-swell potential, 1 ft depth to saturated zone, ponding | 70.4 | 4.1% |
| 56B | Very Limited: shrink-swell potential, 1 ft depth to saturated zone | Somewhat limited: Shrink-swell potential, 1 ft depth to saturated | Somewhat limited: Shrink-swell potential, 1 ft depth to saturated | 67.2 | 3.9% |
| 171B | Somewhat limited: Shrink-swell potential, 1 ft depth to saturated | Somewhat limited: Shrink-swell potential | Somewhat limited: Shrink-swell potential | 36.7 | 2.1% |
| 153A | Very Limited: ponding, 1 ft depth to saturated zone | Very Limited: shrink-swell potential, ponding, 1 ft depth to saturated zone | Very Limited: shrink-swell potential, ponding, 1 ft depth to saturated zone | 10.6 | 0.6% |
| 481A | Very Limited: shrink-swell potential, 1 ft depth to saturated zone | Somewhat Limited: shrink-swell potential, 1 ft depth to saturated zone | Somewhat Limited: shrink-swell potential, ponding, 1 ft depth to saturated zone | 7.9 | 0.5% |
| 234A | Very Limited: shrink-swell potential, 1 ft depth to saturated zone | Very Limited: shrink-swell potential, 1 ft depth to saturated zone | Very Limited: shrink-swell potential, 1 ft depth to saturated zone | 2.5 | 0.1% |

The Land Evaluation and Site Assessment System

The Land Evaluation and Site Assessment system is a tool designed to evaluate the viability of agricultural lands where changes in land-use are proposed. LESA was developed as a decision-making tool used by the Zoning Board, City Councils or County Boards to help make unbiased decisions of proper land-use. The LESA system was developed by the USDA-NRCS and takes into consideration local conditions such as physical characteristics of the land, compatibility of surrounding land-uses, urban growth factors, and land-use policies determined by local government. LESA was designed for use in conjunction with the county's land-use plan, zoning ordinances, and other policies being used to decide land-use changes.

The Champaign County Land Evaluation and Site Assessment system (LESA) is a tool designed to provide Officials with a systematic and objective means to numerically rate a site or a parcel in terms of its agricultural importance.

The LESA is intended for the following applications with in Champaign County:

To assist Officials to evaluate the proposed conversion of farmland on a parcel of site in rezoning cases that include farmland conversion to a non-agricultural land use.

To assist in the review state and federal projects for compliance with the Illinois Farmland Preservation Act and the Federal Farmland Protection Policy Act in terms of their impact on Important Farmland.

The land Evaluation (LE) portion of LESA is additionally intended as a means to determine the 'Best Prime Farmland' designation of a particular site or parcel.

Best Prime Farmland Soils are those identified in the Champaign County Land Evaluation and Site Assessment (LESA) System that under optimum management have 91% to 100% of the highest soil productivities in Champaign County, on average, as reported in the Bulletin 811 Optimum Crop Productivity ratings for Illinois Soils, Best Prime farmland consists of the following:

- a) Soils identified as agriculture Value Groups 1, 2, 3 and /or 4 in the Champaign County LESA system.
- b) Soils that, in combination on a subject site, have an average LE of 91 or higher, as determined by the Champaign County LESA system.
- c) Any development site that includes a significant amount (10% or more of the area proposed to be developed) of agriculture Value Groups 1,2,3 and/or 4 soils as determined by the Champaign County LESA system.

The LESA is one of several tools intended to assist in making land use decisions; it should be used in conjunction with the Champaign County Land Resource Management Plan, and Land use regulations including Zoning Ordinances, Subdivision Regulations and Stormwater management Policies.

LAND EVALUATION WORKSHEET

| Soil Type | Soil Name | Ag Group | Relative | | Land Evaluation |
|-----------|-----------|----------|----------|-------|-----------------|
| | | | Value | Acres | Score |
| 152A | Drummer | 2 | 100 | 939.5 | 93950.0 |
| 154A | Flanagan | 1 | 100 | 580.4 | 58040.0 |
| 67A | Harpster | 4 | 91 | 70.4 | 6406.4 |
| 56B | Dana | 4 | 91 | 67.2 | 6115.2 |
| 171B | Catlin | 3 | 94 | 36.7 | 3449.8 |
| 153A | Pella | 3 | 94 | 10.6 | 996.4 |
| 481A | Raub | 3 | 94 | 7.9 | 742.6 |
| 234A | Sunbury | 4 | 91 | 2.5 | 227.5 |

acreage for calculation slightly larger than tract acreage due to rounding of soils program

Total LE Weighted Factor= 169928

Acreage= 1715.2

Land Evaluation Factor For Site= 99

Note: A Soil Classifier could be hired for additional accuracy if desired

Data Source: Champaign County Digital Soil Survey

Cultural and Animal Resources

a) Cultural:

The Illinois Historic Preservation Agency may require a Phase 1 Archeological Review to identify any cultural resources that may be on the site.

b) Illinois Endangered Species Protection Act & Illinois Natural Areas Preservation Act:

State agencies or units of local government must consult the Department about proposed actions that they will authorize, fund or perform. Private parties do not have to consult, but they are liable for prohibited taking of state-listed plants or animals or for adversely modifying a Nature Preserve or a Land and Water Reserve.

Home rule governments may delegate this responsibility, through duly enacted ordinances, to the parties seeking authorization or funding of the action.



Applicant: Champaign County Soil & Water Conservation District **IDNR Project Number:** 1903788
Contact: Jonathon Manuel **Date:** 10/09/2018
Address: 2110 West Park Court
 Suite C
 Champaign, IL 61821

Project: BayWare Solar Project
Address: 2110 West Park Court, Suite C, Champaign

Description: new solar farm

Natural Resource Review Results

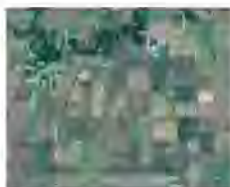
This project was submitted for information only. It is not a consultation under Part 1075.

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

Bigeye Chub (*Hybopsis amblops*)

Location

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



County: Champaign

Township, Range, Section:

18N, 10E, 10
 18N, 10E, 11
 18N, 10E, 12
 18N, 10E, 13
 18N, 10E, 14
 18N, 10E, 15
 18N, 10E, 16
 18N, 10E, 21
 18N, 10E, 22
 18N, 10E, 23
 18N, 10E, 24
 18N, 10E, 25
 18N, 10E, 26
 18N, 10E, 27
 18N, 10E, 28

IL Department of Natural Resources

Contact

Impact Assessment Section
 217-785-5500
 Division of Ecosystems & Environment

IDNR Project Number: 1903788

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

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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.

Flood Insurance Rate Maps

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 that affect upstream and down stream 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 map can help developers and future homeowners to “sidestep” potential flooding or ponding problems. FIRM is the acronym for the Flood Insurance Rate Map, produced by the Federal Emergency Management Agency. These maps 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 flood plain location.) The FIRM map has three (3) zones. A is the zone of 100-year flood, zone B is the 100 to 500 year flood, and zone C is outside the flood plain.

Prairie Solar One - 2

Date: 10/1/2018

Field Office: CHAMPAIGN SERVICE CENTER

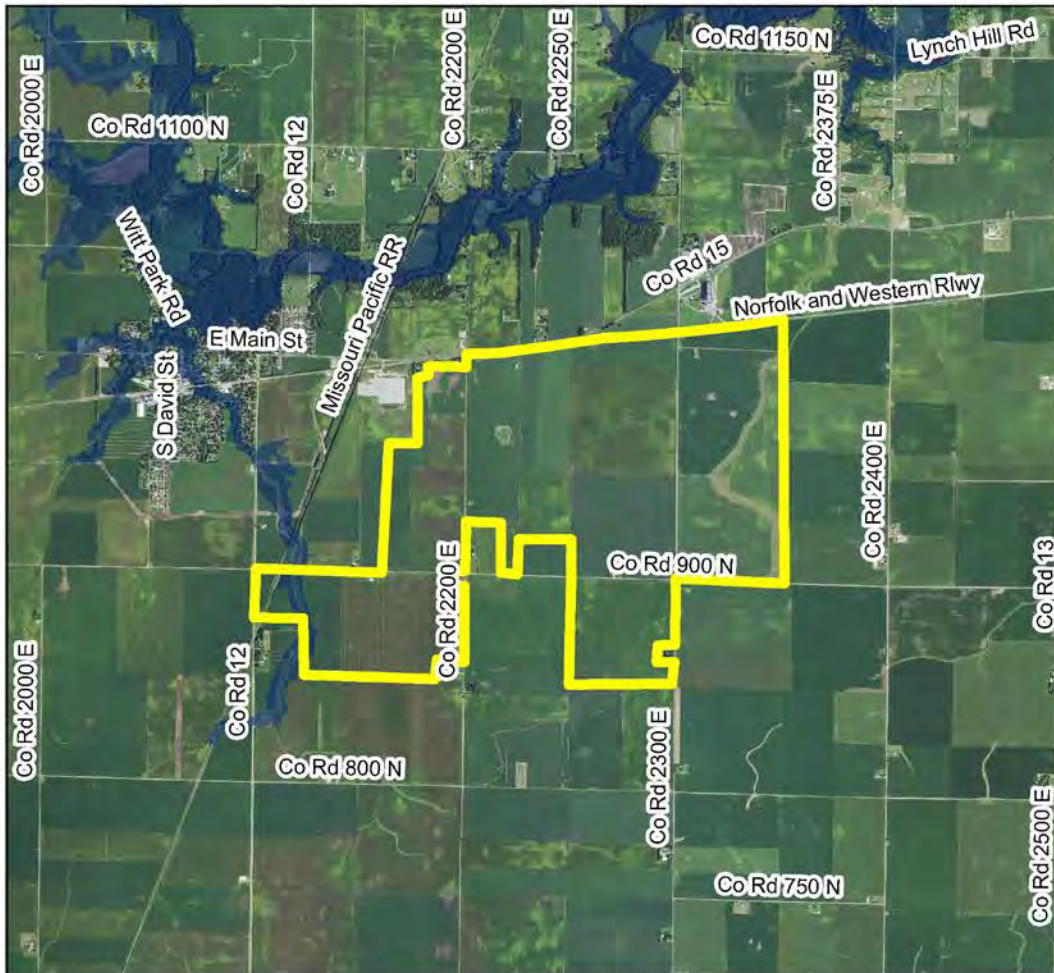
District: CHAMPAIGN COUNTY SOIL & WATER CONSERVATION DISTRICT

Assisted By: JONATHON MANUEL

Aerial 2015

State and County: IL, Champaign County, Illinois




Legal Description: Sections 11, 14, 15, 22 T.18 N., R. 10 E.



Prepared with assistance from USDA-Natural Resources Conservation Service



Legend

-  Prairie Solar One 2
-  fe_2007_17019_edges
-  fema_a_i019



100 Year Flood Plain Map

Topographic Maps

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 parcel in question, 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 point that we use on these reports is usually the point where water exits the parcel. Using regional storm event information, site specific soils and land use information, the peak storm water flow through the point water exits the parcel 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 pre-construction Q value after construction by the installation of storm water management systems, the streams, wetlands and lakes will not suffer damage from excessive urban storm water.

Prairie Solar One - 2

Date: 10/1/2018

Field Office: CHAMPAIGN SERVICE CENTER

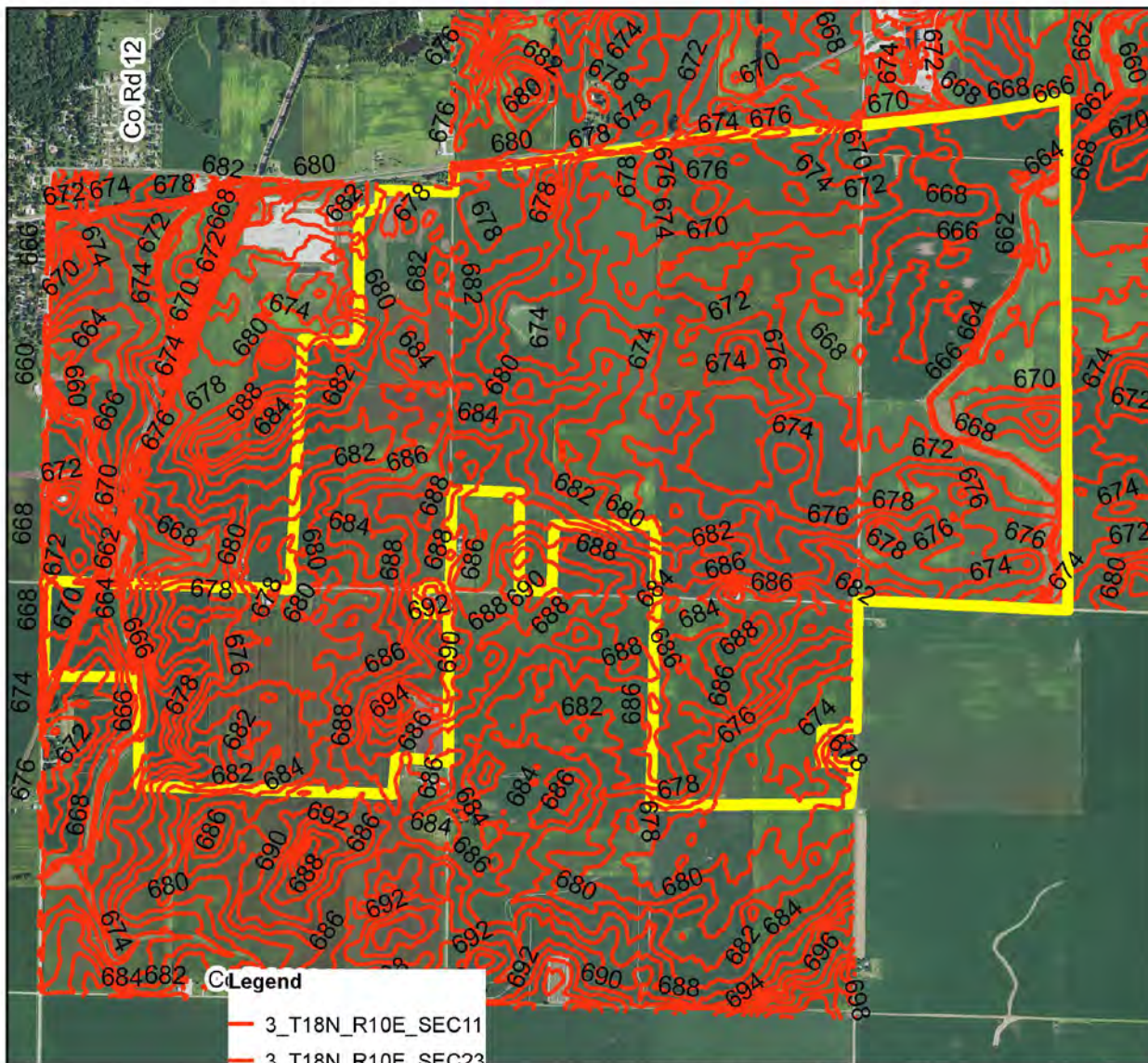
District: CHAMPAIGN COUNTY SOIL & WATER CONSERVATION DISTRICT

Assisted By: JONATHON MANUEL

Aerial 2015

State and County: IL, Champaign County, Illinois

Legal Description: Sections 11, 14, 15, 22 T.18 N., R. 10 E.



- Legend**
- 3_T18N_R10E_SEC11
 - 3_T18N_R10E_SEC23
 - 3_T18N_R10E_SEC22
 - 3_T18N_R10E_SEC14
 - 3_T18N_R10E_SEC15
 - ▭ Prairie Solar One 2
 - 3_T18N_R10E_SEC13
 - 3_T18N_R10E_SEC12
 - fe_2007_17019_edges

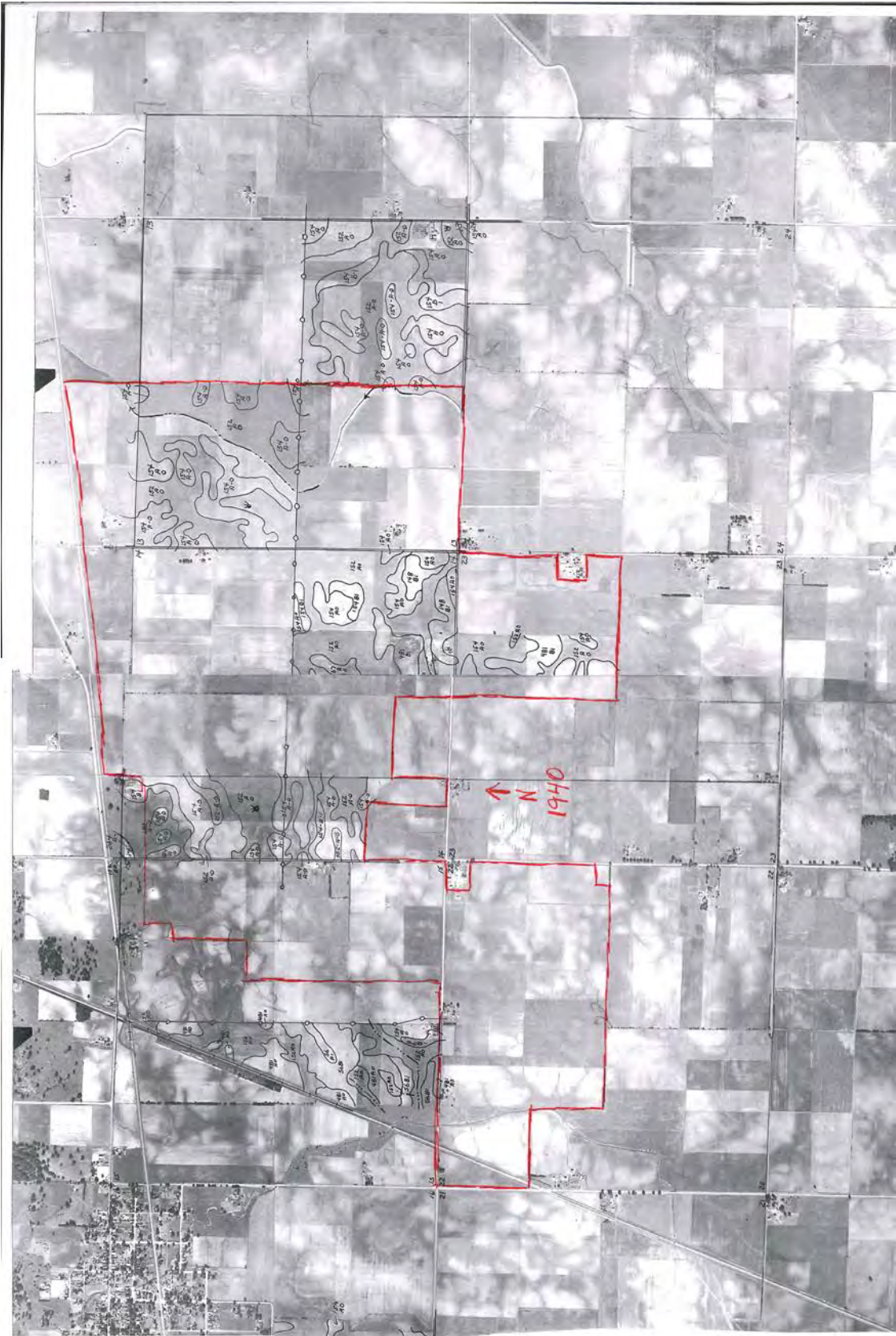


Prepared with assistance from USDA-Natural Resources Conservation Service

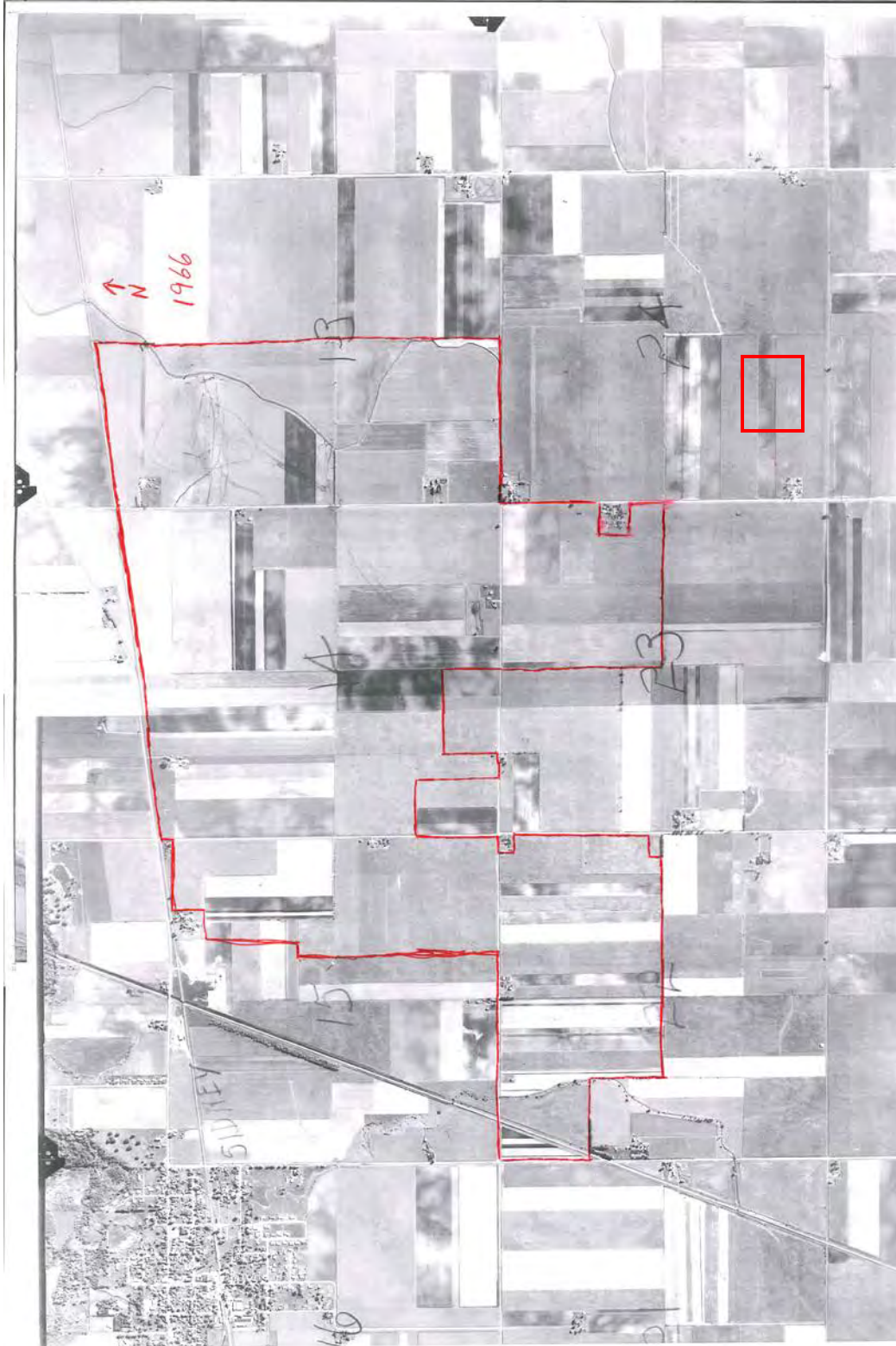


Historical Aerial Photos

1940



1966



1976



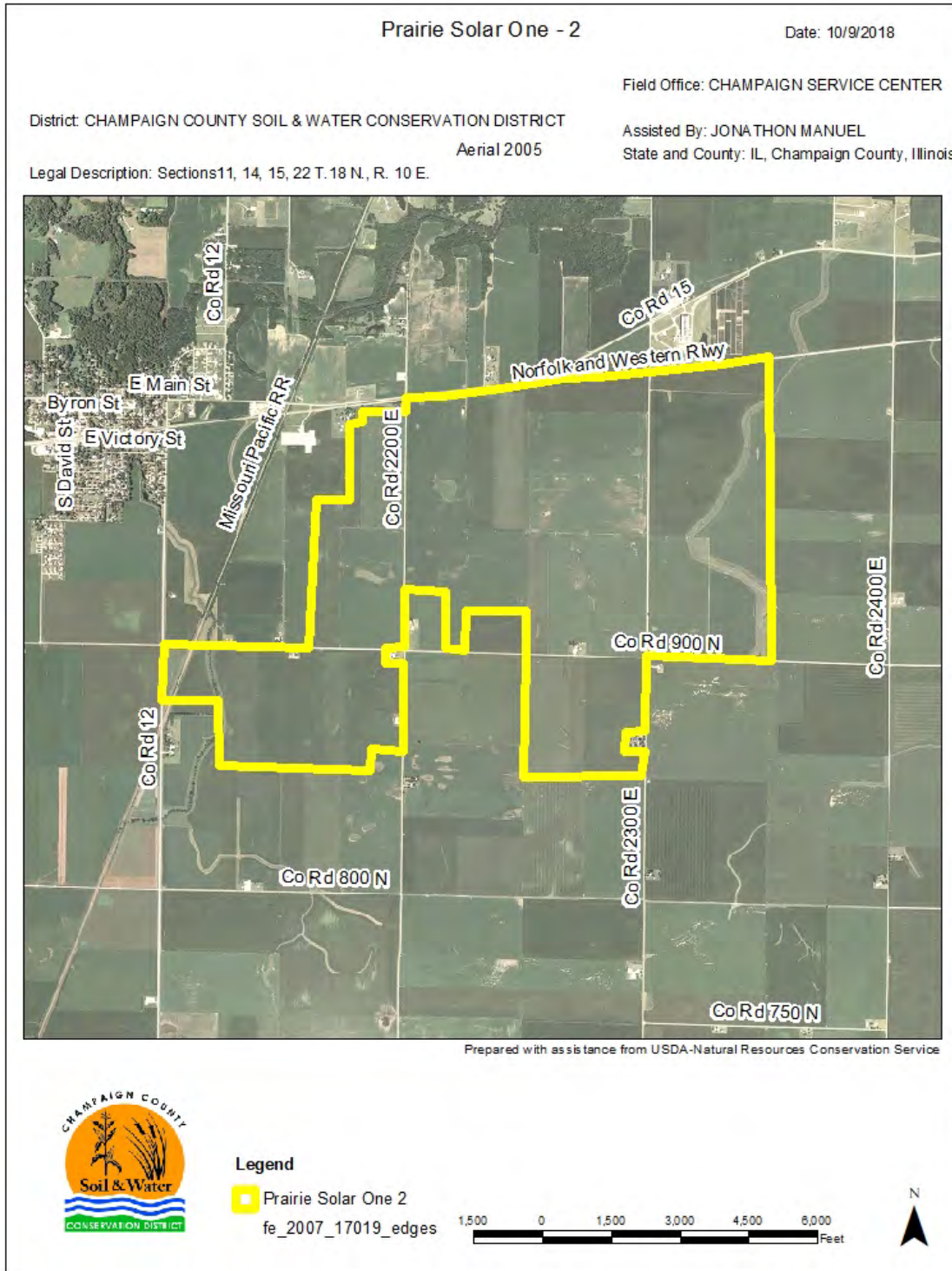
1990



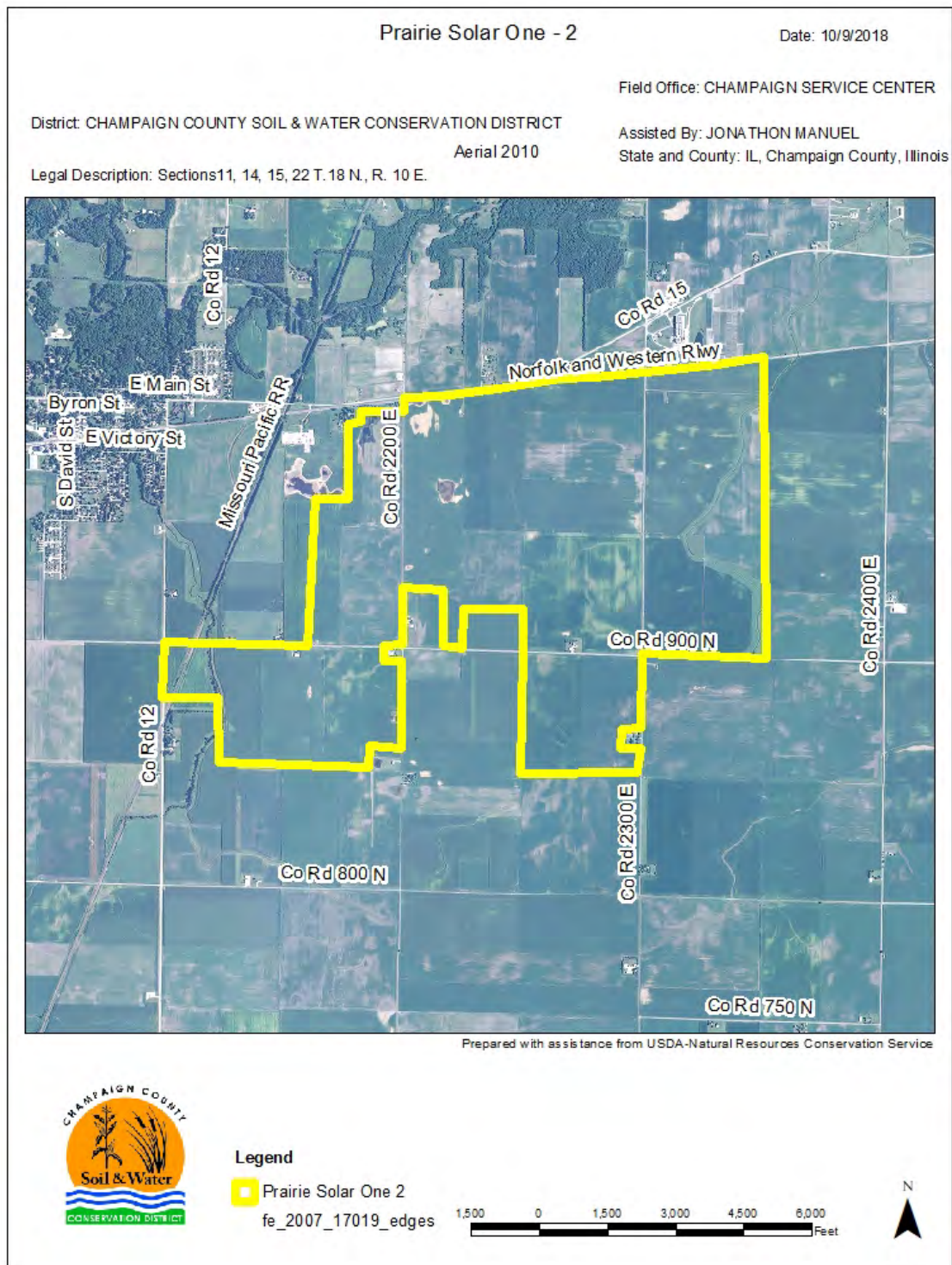




2005



2010



2015

Prairie Solar One - 2

Date: 10/9/2018

Field Office: CHAMPAIGN SERVICE CENTER

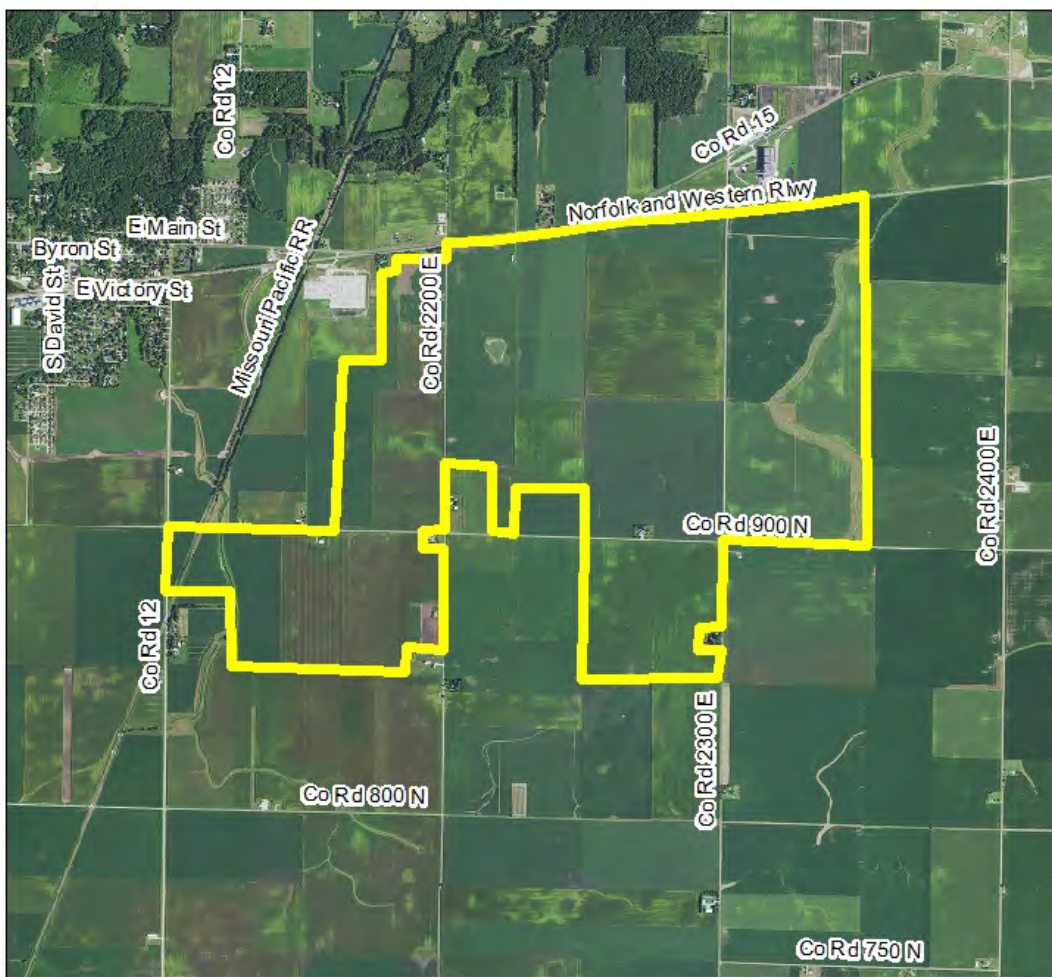
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Legend

-  Prairie Solar One 2
- fe_2007_17019_edges



Site Pictures





Glossary

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.

ADT – the average daily traffic that a local road normally receives; based upon records by the County Superintendent of Highways.

B.G. - Below Grade. Under the surface of the Earth.

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 LEVEL MANAGEMENT - The application of effective practices adapted to different crops, soils, and climatic conditions. Such practices include providing for adequate soil drainage, protection from flooding, erosion and runoff control, near optimum tillage, and planting the correct kind and amount of high quality seed. Weeds, diseases, and harmful insects are controlled. Favorable soil reaction and near optimum levels of available nitrogen, phosphorus, and potassium for individual crops are maintained. Efficient use is made of available crop residues, barnyard manure, and/or green manure crops. All operations, when combined efficiently and timely, can create favorable growing conditions and reduce harvesting losses -- within limits imposed by weather.

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 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.

PALUSTRINE - Name given to inland fresh water wetlands

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 for 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. (Source USDA Natural Resources Conservation Service)000

PRODUCTIVITY INDEXES - Productivity indexes for grain crops express the estimated yields of the major grain crops grown in Illinois as a single percentage of the average yields obtained under basic management from several of the more productive soils in the state. This group of soils is composed of the Muscatine, Ipava, Sable, Lisbon, Drummer, Flanagan, Littleton, Elburn and Joy soils. Each of the 425 soils found in Illinois are found in Circular 1156 from the Illinois Cooperative Extension 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 and 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 tax and in terms of ranges of tax adjuncts 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, mineralogical and chemical composition.

SUBSIDENCE - Applies mainly to organic soils after drainage. Soil material subsides due to shrinkage and oxidation.

TERRAIN - The area or surface over which a particular rock or group of rocks is prevalent.

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 are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances does support, a prevalence of hydrophilic vegetation typically adapted for life in saturated soil conditions.

References

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Land Evaluation and Site Assessment System, Champaign County