ZONING, PLATTING & ADVISORY COMMITTEE (ZPAC)
September 13, 2022 – Approved Meeting Minutes

PBZ Chairman Scott Gengler called the meeting to order at 9:03 a.m.

Present:
Matt Asselmeier – PBZ Department
Scott Gengler – PBZ Committee Chair
David Guritz – Forest Preserve
Brian Holdiman – PBZ Department
Alyse Olson – Soil and Water Conservation District
Aaron Rybski – Health Department

Absent:
Meagan Briganti – GIS Department
Greg Chismark – WBK Engineering, LLC
Fran Klaas – Highway Department
Commander Jason Langston – Sheriff's Department

Audience:
Jairo Ortega

AGENDA

Mr. Guritz made a motion, seconded by Mr. Rybski, to approve the agenda as presented.

With a voice vote of six (6) ayes, the motion carried.

MINUTES

Mr. Rybski made a motion, seconded by Mr. Guritz, to approve the August 2, 2022, meeting minutes and the September 6, 2022, gathering minutes.

With a voice vote of six (6) ayes, the motion carried.

PETITIONS

Petition 22-19 Jairo Ortega
Mr. Asselmeier summarized the request.

In February 2022, the Petitioner and his wife purchased the property across from 2735 Route 52 from Tri-Star Development, Inc. Prior to the sale, on September 21, 2021, through Ordinance 2021-18, the County Board rezoned a majority of the property to R-1. A portion of the Petitioner's property was not included in the 2021 rezoning and the Petitioner would like to rezone the remainder (approximately 0.785 acres) to R-1 in order for the property to have one (1) zoning classification. The Petitioner wishes to construct a house on the property.

The application materials and plat of survey for the entire property were provided.

The property is just over three (3) acres in size and the area to be rezoned consists of approximately zero point seven-eight-five (0.785) acres.

The Current Land Use is Agricultural/Wooded.

The Future Land Use Map calls for the property to be Rural Residential (Max 0.65 DU/Acre).

U.S. 52 is a State Maintained Arterial.

Joliet has trails planned along Route 52.

There are no floodplains or wetlands on the area proposed for rezoning.

The adjacent land uses are Agricultural, Wooded, Single-Family Residential, and a Special Use for Sale of Products Not Grown on the premises.

The adjacent properties are zoned A-1, A-1 SU, and R-1.

The Future Land Use Map calls for the area to be Rural Residential (Max 0.65 DU/Acre).

Nearby properties are zoned A-1, A-1 SU, and R-1.

The A-1 special use permit to the north is for the sale of products not grown on the premises.

The Baker Woods Forest Preserve is located within one half (1/2) mile of the subject property.

EcoCAT Report submitted and noted the presence of the following protected resources in the vicinity:

Aux Sable Creek INAI Site
Greater Redhorse (Moxostoma valenciennesi)

The results of the consultation were not available.

The application for NRI was submitted on August 1, 2022. The LESA Score was 181 indicating a low level of protection. The NRI report was provided.

Petition information was sent to Seward Township on August 8, 2022. No comments received.

Petition information was sent to the Village of Shorewood on August 8, 2022. No comments received.

Petition information was sent to the City of Joliet on August 8, 2022. No comments received.

Petition information was sent to the Minooka Fire Protection District on August 8, 2022. No comments received.

The Petitioner desires to rezone the subject property in order to build one (1) house on the subject property and to have consistent zoning throughout the property.

Any new homes or accessory structures would be required to meet applicable building codes.

No public or private utilities are onsite.

The property fronts Route 52. Staff has no concerns regarding the ability of Route 52 to support the proposed map amendment.

Any new driveways constructed would be for residential purposes. Any new driveways would have to meet applicable regulations and secure proper permits.

No new odors are foreseen.

Any new lighting would be for residential use only.

Any fencing, landscaping, or screening would be for residential purposes.

Any signage would be residential in nature.

No noise was anticipated.

Any new homes would have to be constructed per Kendall County's Stormwater Management Ordinance.

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 or larger lot single-family residential uses. A forest preserve is located in the vicinity.

The Zoning classification of property within the general area of the property in question. The surrounding properties are zoned A-1 and R-1. The A-1 property to north has a special use permit for sale of products not grown on the premises.

The suitability of the property in question for the uses permitted under the existing zoning classification. The property is presently split zoned A-1 and R-1. The property is presently heavily wooded and having a single zoning classification for the property is desirable.

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 and single-family residential uses found in rural settings.

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 classifies this property as Rural Residential. The R-1 One Family Residential District is consistent with the Rural Residential classification.

Staff recommended approval of the proposed map amendment because the proposal is consistent with the Land Resource Management Plan.

Mr. Guritz asked about driveway access. Mr. Asselmeier responded that the Petitioner would have to get an access permit from the State and a driveway permit from the County. Jairo Ortega, Petitioner, said that he would like a driveway near the center of the property.

It was noted that the Conservation Foundation recently purchased the property and the Kendall County Forest Preserve District was exploring using that property for forest preserve purposes.

Discussion occurred regarding the drainage culvert located to the west of the property.

Mr. Rybski noted that the property was wooded and placing a septic system on the property could create challenges.

Chairman Gengler made a motion, seconded by Mr. Holdiman, to recommend approval of the map amendment.

With a voice vote of six (6) ayes, the motion carried.

The proposal goes to the Kendall County Regional Planning Commission on September 28, 2022.

REVIEW OF PETITIONS THAT WENT TO COUNTY BOARD

Mr. Asselmeier reported that Petition 22-12, pertaining to tower lighting requirements, was approved by the County Board.

OLD BUSINESS/NEW BUSINESS

None

CORRESPONDENCE

None

PUBLIC COMMENT

None

ADJOURNMENT

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

With a voice vote of six (6) ayes, the motion carried.

The ZPAC, at 9:12 a.m., adjourned.

Respectfully Submitted,
Matthew H. Asselmeier, AICP, CFM
Senior Planner

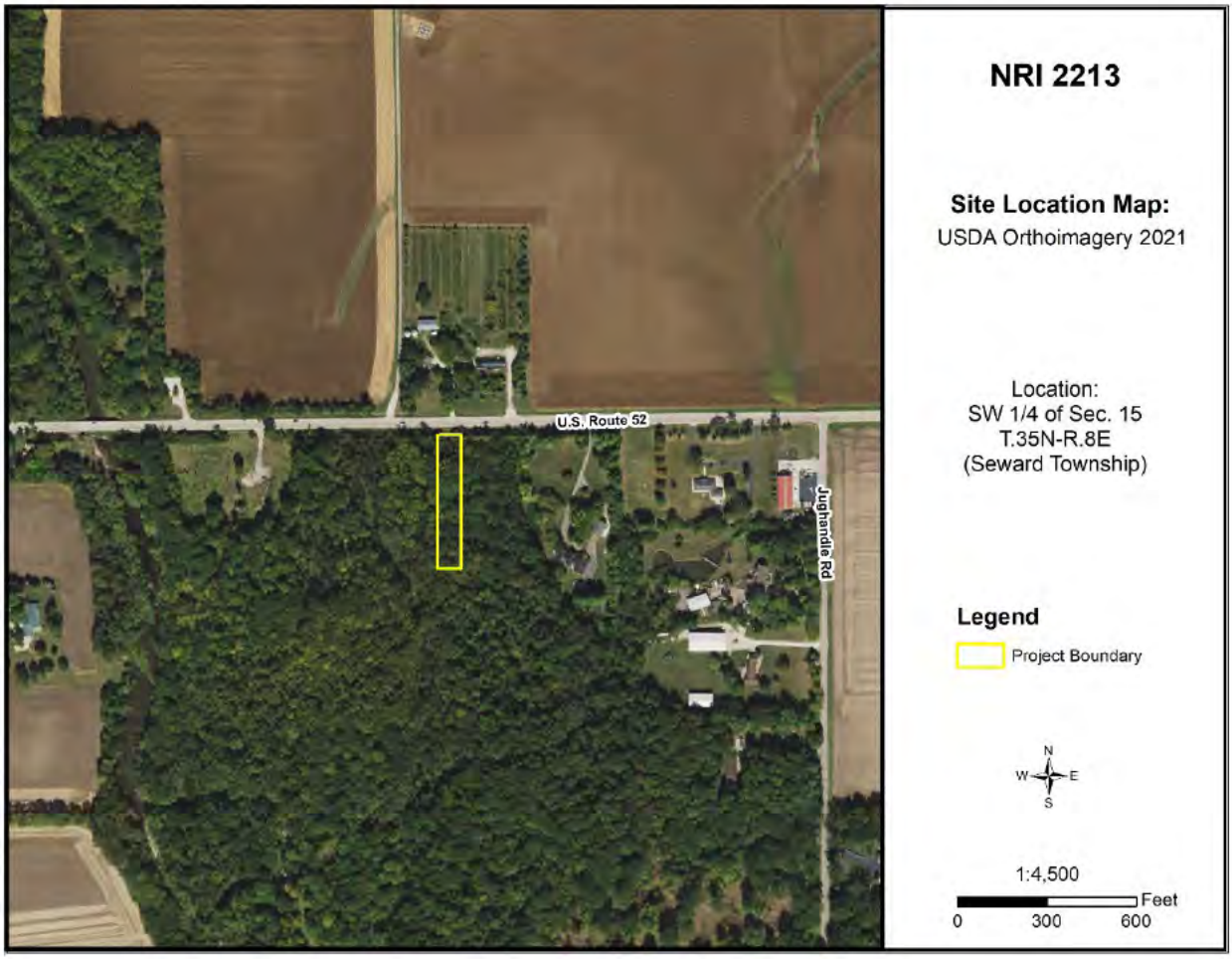
Kendall County Soil & Water Conservation District

August 8, 2022

Jairo and Rebecca Ortega
[redacted]

Dear Mr. & Mrs. Ortega,

The Kendall County Soil & Water Conservation District (SWCD) received a Natural Resources Information Report (NRI) application for the proposed rezoning of a portion of one parcel (Parcel Index Number 09-15-300-024) from A-1 Agricultural to R-1 Single Family Residential. This request is being filed with Kendall County. If the zoning request is approved, the entire parcel will be zoned as R-1 Single Family Residential. The proposed project is located in the southwest corner of Section 15 of Seward Township (T.35N-R.8E of the 3rd Principal Meridian) in Kendall County, Illinois. After reviewing the project, it was determined that a *full NRI Report is not necessary at this time* for the proposed rezoning. An NRI Report was previously prepared in July 2021 that included this parcel within that project boundary (please see NRI Report 2110). A copy of this report is included with the letter and can be referenced for additional natural resources information.



The Kendall County SWCD has reviewed the 0.785-acre project site and would like to note the following natural resource considerations:

- The site, as submitted for review, is currently vacant, forested land with a proposed use as a residential parcel with the potential addition of a small shed and septic system.

- Soils information comes from the 2008 Soil Survey for Kendall County prepared by the United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS). The soil map units for the proposed project site are shown below.

Soil Map Unit	Acreage	Percent of Parcel
69A Milford silty clay loam, 0-2% slopes	0.2	31.5%
189A Martinton silt loam, 0-2% slopes	0.5	68.5%

  - Soil survey interpretations are predictions of soil behavior for specified land uses and specified management practices. 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. They are based on the soil properties that directly influence the specified use of the soil. Each soil map unit has limitations for a variety of land uses such as buildings with basements, buildings without basements, small commercial buildings, shallow excavations, onsite sewage disposal, and lawns/landscaping. 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. Applicable land uses for this project are described in more detail below.
    - Small Commercial Buildings: Ratings are for structures that are less than three stories high and do not have basements. The foundation is assumed to be spread footings of reinforced concrete built on disturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs.
    - Onsite Sewage Disposal: The factors considered are the characteristics and qualities of the soil that affect the limitations for absorbing waste from domestic sewage disposal systems. The major features considered are soil permeability, percolation rate, groundwater level, depth to bedrock, flooding hazards, and slope. The table below indicates soils that are deemed unsuitable per the Kendall County Subdivision Control Ordinance. Installation of an on-site sewage disposal system in soils designated as unsuitable may necessitate the installation of a non-conventional onsite sewage disposal system. For more information please contact the Kendall County Health Department – Environmental Health at (630) 553-9100 x8026.
    - 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.

  - The limitation categories (not limited, somewhat limited, and 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. A very limited soil indicates that the proposed activity

will be more difficult and costly to do on that soil type than on a soil type that is classified as somewhat limited or not limited.

- The table below provides ratings for proposed uses in terms of limitations.

Soil Map Unit	Small Commercial Buildings	Onsite Conventional Septic Systems	Shallow Excavations	Lawns & Landscaping
69A	Very Limited	Unsuitable/ Very Limited	Very Limited	Very Limited
189A	Very Limited	Suitable/ Not Limited	Very Limited	Somewhat Limited

- The information provided in the table below provides further detail regarding the following:
  - Drainage Class: Refers to the frequency and duration of wet periods under similar conditions to those under which the soil formed.
  - 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. Group A soils have a high infiltration rate, low runoff potential and high rate of water transmission. Group B soils have a moderate infiltration rate and rate of water transmission. Group C soils have a slow infiltration rate and rate of water transmission. Group D soils have a very slow infiltration rate, high runoff potential and 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.
  - Prime Farmland: 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.

Map Unit	Drainage Class	Hydrologic Group	Hydric Designation	Farmland Designation
69A	Poorly Drained	C/D	Hydric	Prime Farmland if drained
189A	Somewhat Poorly Drained	C/D	Non-Hydric Hydric Inclusions Likely	Prime Farmland

- To ensure proper consideration of the current site conditions for suitable development including excavation, structures, septic systems, and landscaping, we recommend site specific soil testing to ensure any limitations associated with the current soil material onsite will support associated uses.

- This site is located on slopes of approximately 0-2%. The site lies within the Illinois River Watershed (Minooka Branch Aux Sable Creek sub watershed). Topographic maps indicate that the parcel drains primarily to the west.

- Based on an in-office review of the Federal Emergency Management Agency's (FEMA) Digital Flood Insurance Rate Map (DFIRM) for Kendall County, Community Panel No. 17093C0145H (effective date January 8, 2014), it appears that the parcel is located just outside of the Zone AE 100-year floodplain and floodway. A portion of the project area's northwest corner appears to be located within the Zone X 100 to 500-year floodplain (moderate flood hazard area). Floodplains are regulated by the Illinois Department of Natural Resources – Office of Water Resources (IDNR-OWR).

- Based upon review of the U.S. Fish & Wildlife Service's National Wetland Inventory Map, wetlands do not appear to be identified on the project site. However, a Palustrine, forested, shrub wetland is mapped to the west and

southwest of the project site. Wetlands and Waters of the U.S. are regulated by the U.S. Army Corps of Engineers, Rock Island District. It should also be noted that other ecologically sensitive areas are located near the project site. A Kendall County Forest Preserve is located approximately 250 feet to the west and the Aux Sable Creek is located approximately 1,000 feet to the west.

- If construction is to occur, a soil erosion and sediment control plan should be prepared and implemented onsite in accordance with both Kendall County and Illinois EPA requirements. The Illinois Urban Manual can be used as a reference for proper selection and implementation of onsite soil erosion and sediment control practices to ensure that soil is properly maintained onsite from project initiation to completion.

- The Land Evaluation Site Assessment (LESA) system, a land use planning tool, assists decision-makers in Kendall County in determining the suitability of a land use change and/or a zoning request. Specifically, the LESA system is designed to facilitate decision making by providing a rational process for assisting local officials in making farmland conversion decisions through the local land use process. It provides a technical framework to numerically rank land parcels based on local resource evaluation and site considerations. 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) and Site Assessment (SA). The Land Evaluation is based on soils of a given area that are rated and placed in groups ranging from the best to worst suited for a stated agriculture use such as cropland and forestland. The best group is assigned a value of 100 and all other groups are assigned lower values (94, 87, 79, etc.). The Land Evaluation is based on data from the USDA Kendall County Soil Survey. The Site Assessment 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 overall score is based on a 300-point rating scale. 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 Evaluation Computation

Soil Type	Value Group	Relative Value	Acres	Product (Relative Value x Acres)
69A	3	87	0.2	17.4
189A	2	94	0.5	47.0
Totals			**0.7**	**64.4**
LE Calculation			(Product of relative value / Total Acres) 64.4 / 0.7 = 92	
LE Score			**LE = 92**	

The Land Evaluation score for this site is 92, indicating that this site contains soils that are well-suited for agricultural uses.

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)	15
	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)	10
	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)	7
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)	10
	Site Assessment Score:	**89**

The Site Assessment score for this site is 89. The Land Evaluation value (92) is added to the Site Assessment value (89) to obtain a LESA Score of 181. The table below shows the level of protection for the proposed project site based on the LESA Score.

LESA Score Summary

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

The overall LESA Score for this site is 181 indicating a low level of protection for the proposed project site. Note: 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.

If you have any questions, please contact our office at (630) 553-5821 extension 3.

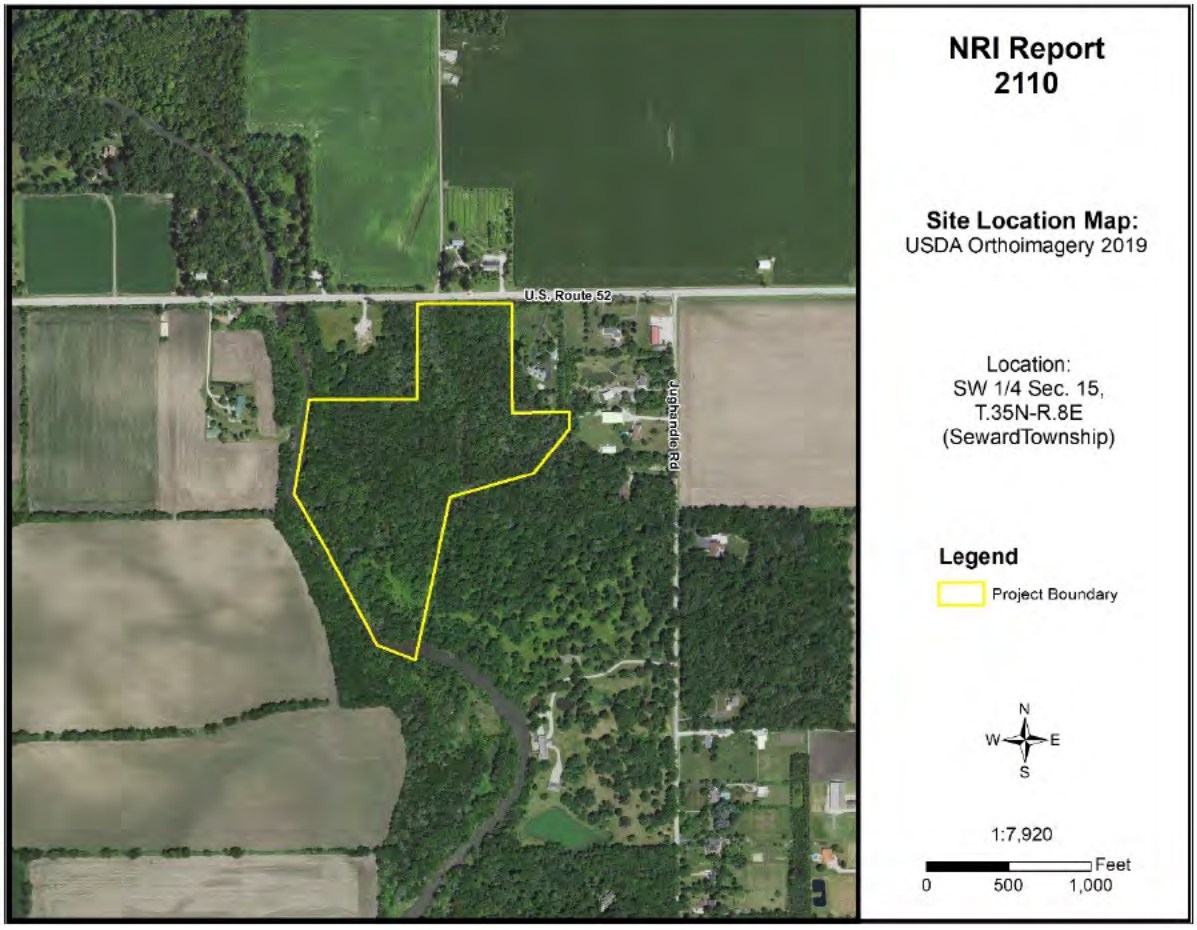
Sincerely,

[redacted]

Alyse Olson
Resource Conservationist

Enclosure

NATURAL RESOURCE INFORMATION (NRI) REPORT: #2110



July 2021

Petitioner: Tri-Star Development, Inc.
Contact: Attorney Daniel J. Kramer

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

KENDALL COUNTY SOIL AND WATER CONSERVATION DISTRICT NATURAL RESOURCE INFORMATION (NRI) REPORT

Natural Resource Information Report Number	2110
Date District Board Reviews Application	July 2021
Applicant's Name	Tri-Star Development, Inc.
Size of Parcel	(+/-) 40.065 acres
Current Zoning & Use	A-1 Agricultural; Vacant Forested Land
Proposed Zoning & Use	R-1 Residential; One Single-Family Home
Parcel Index Number(s)	09-15-300-020
Contact Person	Attorney Daniel J. Kramer

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

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

Natural Resource Information Report Number	#2110
Petitioner	Tri-Star Development, Inc.
Contact Person	Attorney Daniel J. Kramer
County or Municipality the Petition is Filed With	Kendall County
Location of Parcel	SW ¼ of Section 15, Township 35 North, Range 8 East (Seward Township) of the 3rd Principal Meridian
Project or Subdivision Name	Tri-Star Development
Existing Zoning & Land Use	A-1 Agricultural; Vacant Forested Land
Proposed Zoning & Land Use	R-1 Residential; One Single-Family Home
Proposed Water Source	Well
Proposed Type of Sewage Disposal System	Septic
Proposed Type of Storm Water Management	N/A
Size of Site	(+/-) 40.065 acres
Land Evaluation Site Assessment Score	189 (Land Evaluation: 88; Site Assessment: 101)

NATURAL RESOURCE CONSIDERATIONS

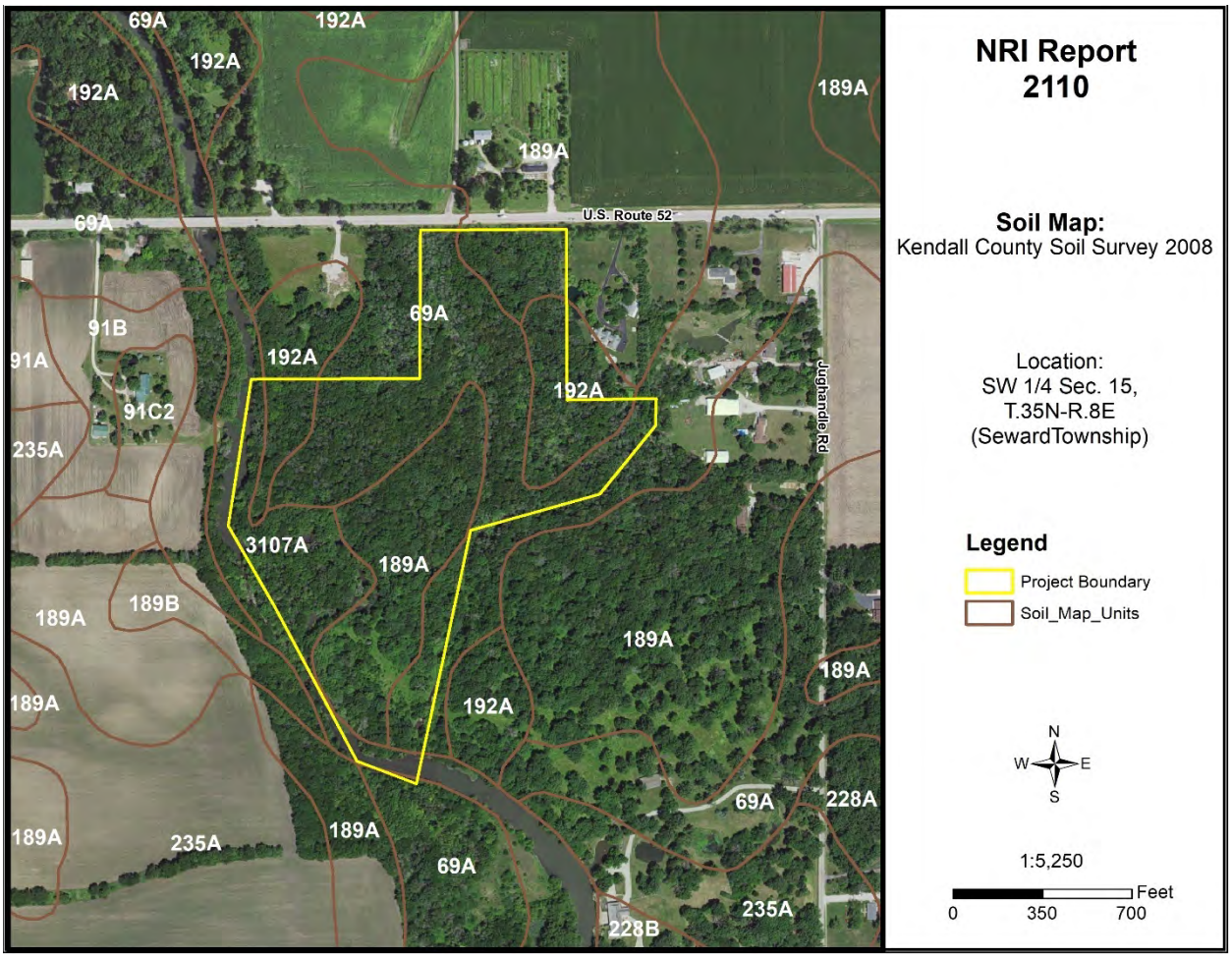


Figure 1: Soil Map

SOIL INFORMATION

Based on information from the United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) 2008 Kendall County Soil Survey, this parcel is shown to contain the following soil types (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):

Table 1: Soils Information

Map Unit	Soil Name	Drainage Class	Hydrologic Group	Hydric Designation	Farmland Designation
69A	Milford silty clay loam, 0-2% slopes	Poorly Drained	C/D	Hydric	Prime Farmland if drained
189A	Martinton silt loam, 0-2% slopes	Somewhat Poorly Drained	C/D	Non-Hydric	Prime Farmland
189B	Martinton silt loam, 2-4% slopes	Somewhat Poorly Drained	C/D	Non-Hydric	Prime Farmland
192A	Del Rey silt loam, 0-2% slopes	Somewhat Poorly Drained	C/D	Non-Hydric	Prime Farmland if drained

3107A	Sawmill silty clay loam, heavy till plain, 0-2% slopes, frequently flooded	Poorly Drained	B/D	Hydric	Prime Farmland if drained & either protected from flooding or not frequently flooded during growing season

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 soils (69A Milford silty clay loam and 3107A Sawmill silty clay loam), and the remaining three are classified as non-hydric soils that likely contain hydric inclusions (189A Martinton silt loam, 189B Martinton silt loam, and 192A Del Rey 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, two are designated as prime farmland (189A Martinton silt loam and 189B Martinton silt loam), and the remaining soils are designated as prime farmland if drained (69A Milford silty clay loam, 192A Del Rey silt loam, and 3107A Sawmill silty clay loam).

Soil Limitations – The USDA-NRCS Web Soil Survey rates the limitations of soils for dwellings with basements, dwellings without basements, small commercial buildings, shallow excavations, lawns/landscaping, and local roads and streets. 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	Dwellings with Basements	Dwellings without Basements	Shallow Excavations	Lawns/ Landscaping	Conventional Septic Systems
69A	Very Limited	Very Limited	Very Limited	Very Limited	Unsuitable/ Very Limited
189A	Very Limited	Very Limited	Very Limited	Somewhat Limited	Suitable/Not Limited
189B	Verm Limited	Very Limited	Very Limited	Somewhat Limited	Suitable/Not Limited
192A	Very Limited	Very Limited	Very Limited	Somewhat Limited	Suitable/Not Limited
3107A	Very Limited	Very Limited	Very Limited	Very Limited	Unsuitable/ Very Limited

Septic Systems – The factors considered for determining suitability are the characteristics and qualities of the soil that affect the limitations for absorbing waste from domestic sewage disposal systems. The major features considered are soil permeability, percolation rate, groundwater level, depth to bedrock, flooding hazards, and slope. Soils are deemed unsuitable per the Kendall County Subdivision Control Ordinance. Installation of an on-site sewage disposal system in soils designated as unsuitable may necessitate the installation of a non-conventional onsite sewage disposal system. For more information please contact the Kendall County Health Department (811 W. John Street, Yorkville, IL; (630) 553-9100 ext. 8026).

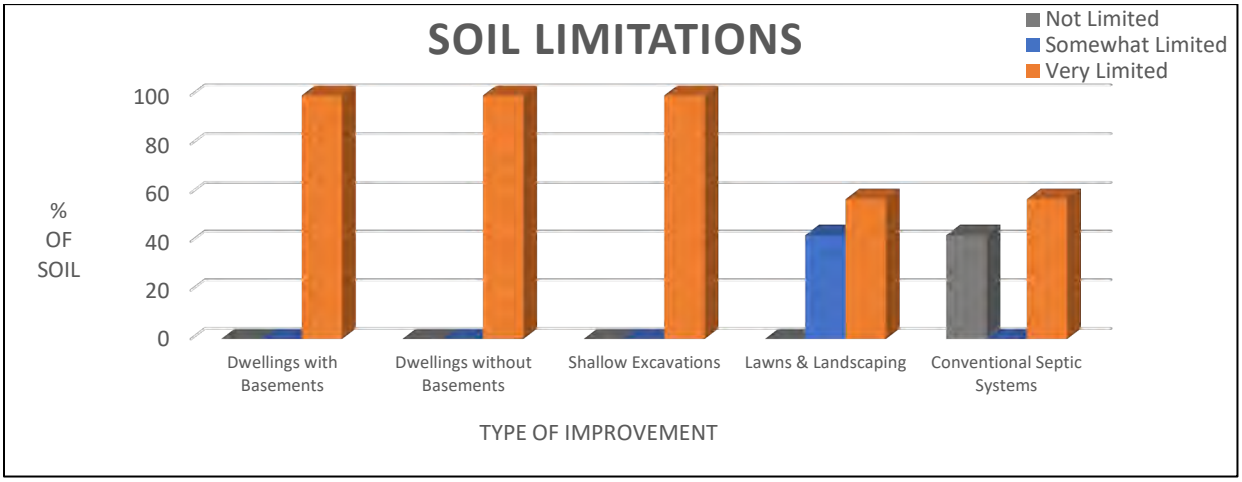


Figure 2: Soil Limitations

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 **88**, indicating that this site is **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 **101**.

The **LESA Score for this site is 189 out of a possible 300, which indicates a low level of protection** for the proposed project site. Note: 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. If the project is agricultural in nature, however, a higher score may provide an indication of the suitability of the project as it relates to the compatibility with existing agricultural land use.

WETLANDS

The U.S. Fish & Wildlife Service's National Wetland Inventory map **indicates the presence** of a wetland(s) 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. 17093C0145H (effective date January 8, 2014) was reviewed to determine the presence of floodplain and floodway areas within the project site. According to the map, the parcel **is located within** the floodplain and 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 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.

LAND USE FINDINGS:

The Kendall County Soil and Water Conservation District (SWCD) Board has reviewed the proposed development plans for Petitioner Tri-Star Development, Inc. for the proposed change in zoning to construct one single-family home on the parcel within Seward Township of Kendall County located in the SW ¼ of Section 15, Township 35N, and Range 8E 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 should be preserved whenever feasible. Of the soils found onsite, 100% are classified 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 88 out of a possible 100 points indicating that the soils are well suited for agricultural uses. The total LESA Score for this site is 189 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. If the project is agricultural in nature, however, a higher score may provide an indication of the suitability of the project as it relates to the compatibility with existing agricultural land use.

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, 100% are very limited for dwellings with basements, dwellings without basements, and shallow excavations and 57% are very limited for lawns/landscaping. The remaining 43% are considered somewhat limited for lawns/landscaping. Additionally, 57% of the soils are considered unsuitable for conventional septic systems. 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 Minooka Branch Aux Sable Creek sub watershed. This development should include a soil erosion and sediment control plan to be implemented during construction. 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 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

07/12/2021
Date

PARCEL LOCATION

Location Map for Natural Resources Information Report #2110

SW ¼ of Section 15, Township 35 North, Range 8 East (Seward Township) on 40.065 acres. This parcel is located on the west side of Jughandle Road, east of O Brien Road, south of U.S. Route 52, and north of Bell Road in Minooka, IL. The parcel is part of unincorporated Kendall County.

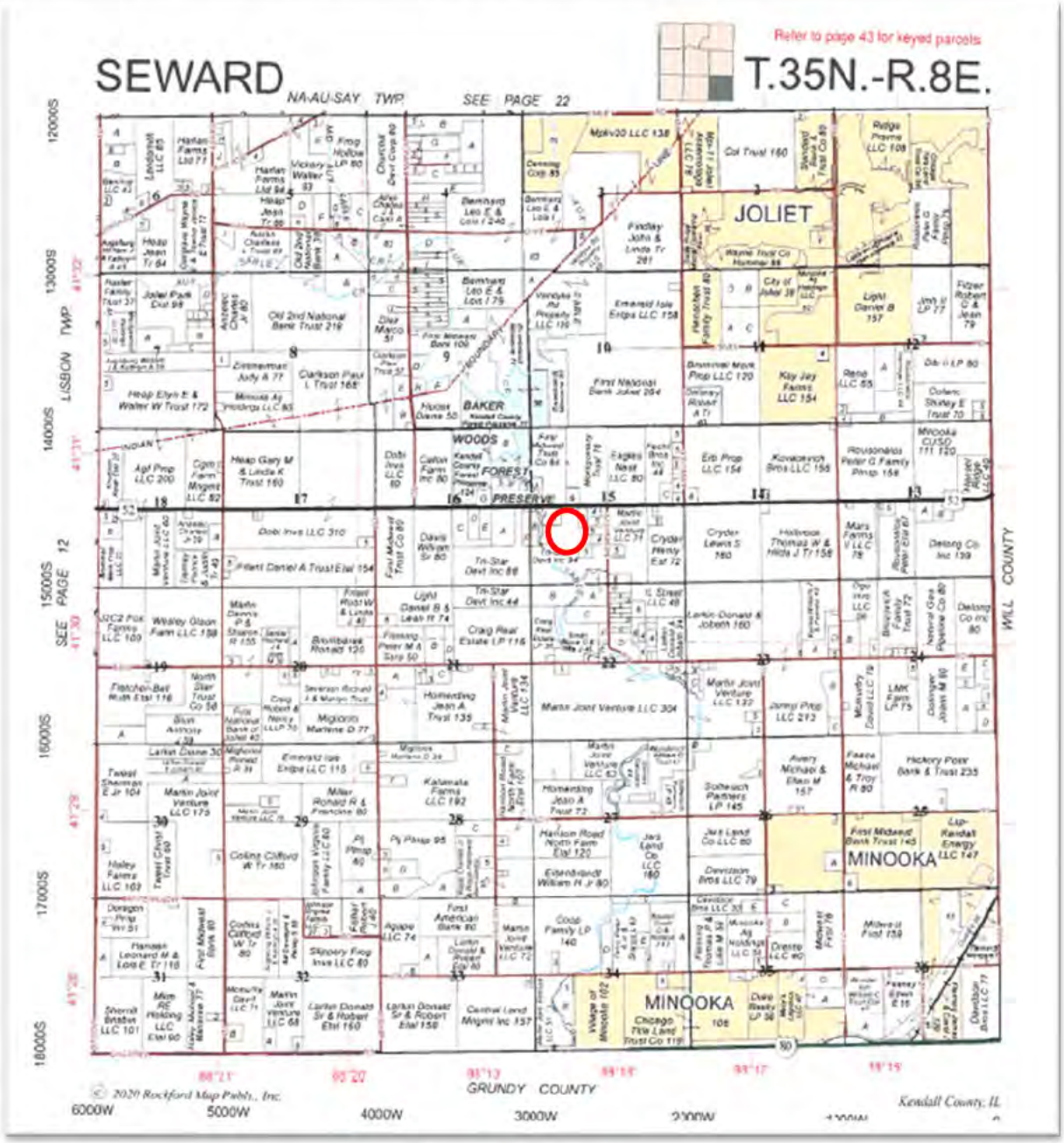


Figure 3: 2021 Plat Map

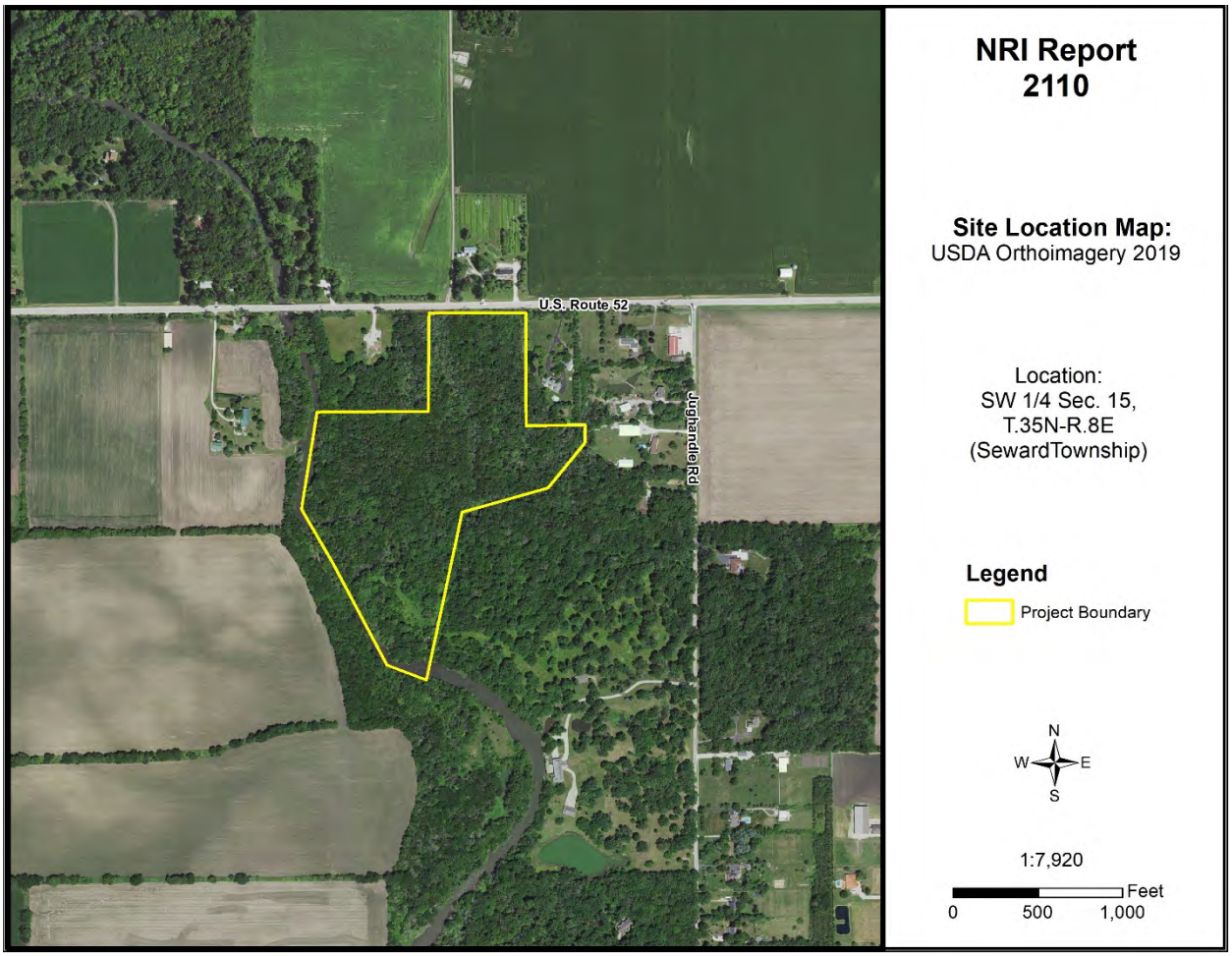


Figure 4: 2019 Aerial Map with NRI Site Boundary

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 Historic Preservation Agency has not been notified of the proposed land use change by the Kendall County SWCD. The applicant may need to contact the IHPA 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) <u>are</u> located near the parcel in question (PIQ). Aux Sable Creek runs through the PIQ along the west and southwest boundaries. The National Wetland Inventory identifies wetlands within the parcel boundary, and the Zone AE (100-year flood) floodway and floodplain are also within the parcel boundary according to the FEMA flood map. Additionally, Baker Woods Forest Preserve is located immediately adjacent to the PIQ on the northwest side.

[1]Taken from *<u>The Conservation of Biological Diversity</u> <u>in the Great Lakes Ecosystem: Issues and</u> <u>Opportunities</u>*, 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.

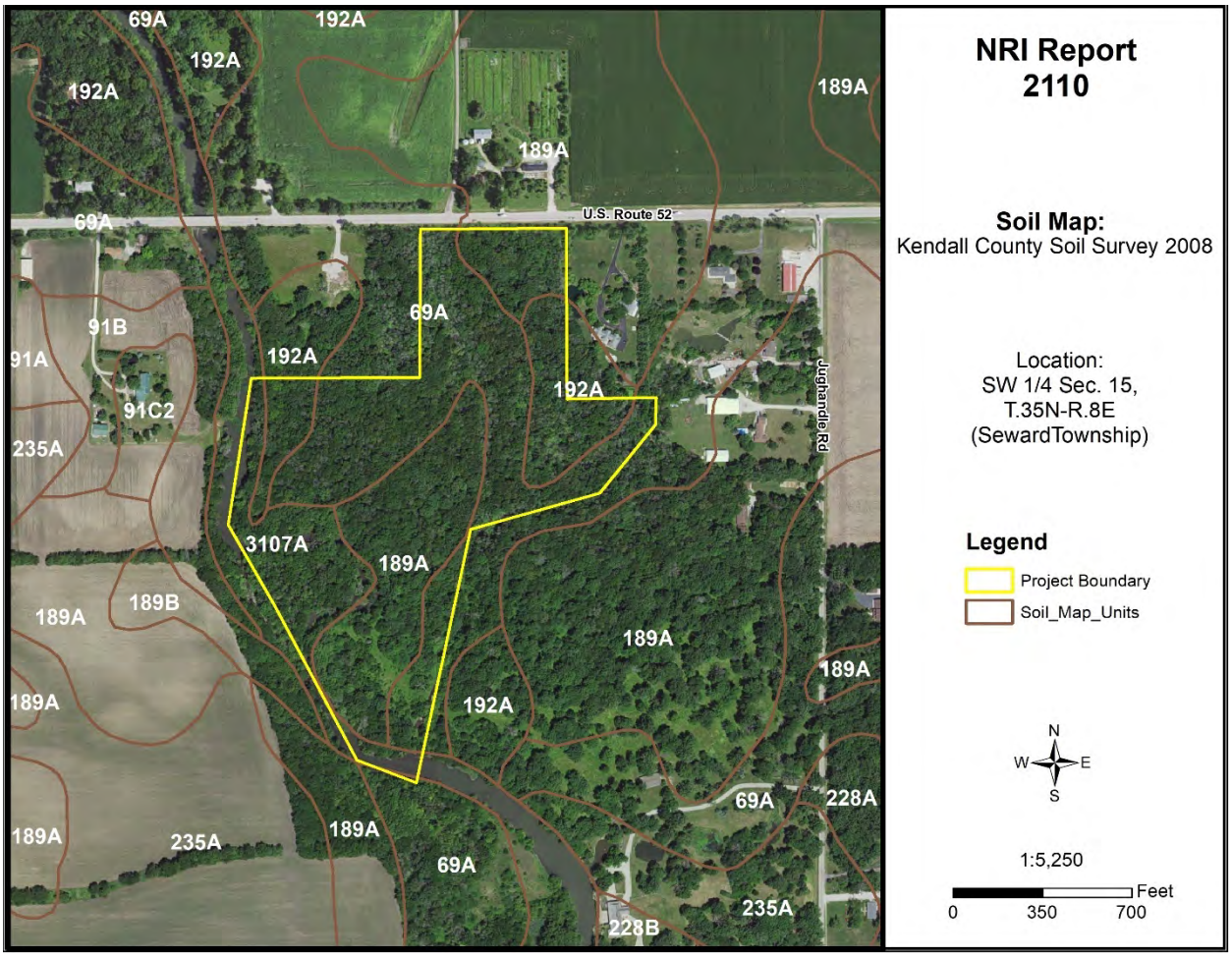


Figure 5: Soil Map

Table 3: Soil Map Unit Descriptions

Symbol	Descriptions	Acres	Percent
69A	Milford silty clay loam, 0-2% slopes	15.6	39.0%
189A	Martinton silt loam, 0-2% slopes	12.1	30.3%
189B	Martinton silt loam, 2-4% slopes	0.0	0.1%
192A	Del Rey silt loam, 0-2% slopes	4.9	12.3%
3107A	Sawmill silty clay loam, heavy till plain, 0-2% slopes, frequently flooded	7.4	18.4%

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.

Dwellings with Basements – Ratings are for undisturbed soil for a building structure of less than 3 stories with a basement. The foundation is assumed to be spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs.

Dwellings without Basements – Ratings are for undisturbed soil for a house of three stories or less than 3 stories without a basement. The foundation is assumed to be spread footings of reinforced concrete at a depth of 2 feet or the depth of maximum frost penetration, whichever is deeper. The ratings for dwellings are based on soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs.

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.

Onsite Sewage Disposal – The factors considered are the characteristics and qualities of the soil that affect the limitations for absorbing waste from domestic sewage disposal systems. The major features considered are soil permeability, percolation rate, groundwater level, depth to bedrock, flooding hazards, and slope. The table below indicates soils that are deemed unsuitable per the Kendall County Subdivision Control Ordinance. Installation of an on-site sewage disposal system in soils designated as unsuitable may necessitate the installation of a non-conventional onsite sewage disposal system. For more information please contact the Kendall County Health Department – Environmental Health at (630) 553-9100 x8026.

Table 4: Building Limitations

Soil Type	Dwellings with Basements	Dwellings without Basements	Shallow Excavations	Lawns & Landscaping	Onsite Conventional Sewage Systems	Acres	%
69A	**Very Limited:** Ponding; Depth to saturated zone; Shrink-swell	**Very Limited:** Ponding; Depth to saturated zone; Shrink-swell	**Very Limited**: Ponding; Depth to saturated zone; Unstable excavation walls; Dusty; Too clayey	**Very Limited:** Ponding; Depth to saturated zone; Dusty	**Unsuitable:** Wet	15.6	39.0%
189A	**Very Limited:** Depth to saturated zone; Shrink-swell	**Very Limited:** Shrink-swell; Depth to saturated zone	**Very Limited:** Depth to saturated zone; Dusty; Unstable excavation walls	**Somewhat Limited:** Depth to saturated zone; Dusty	**Suitable**	12.1	30.3%
189B	**Very Limited:** Depth to saturated zone; Shrink-swell	**Very Limited:** Shrink-swell; Depth to saturated zone	**Very Limited:** Depth to saturated zone; Dusty; Unstable excavation walls	**Somewhat Limited:** Depth to saturated zone; Dusty	**Suitable**	0.0	0.1%
192A	**Very Limited:** Depth to saturated zone; Shrink-swell	**Very Limited:** Depth to saturated zone; Shrink-swell	**Very Limited:** Depth to saturated zone; Dusty; Unstable excavation walls; Too clayey	**Somewhat Limited:** Depth to saturated zone; Dusty	**Suitable**	4.9	12.3%
3107A	**Very Limited:** Ponding; Flooding; Depth to saturated zone; Shrink-swell	**Very Limited:** Ponding; Flooding; Depth to saturated zone; Shrink-swell	**Very Limited:** Ponding; Depth to saturated zone; Flooding; Dusty; Unstable excavation walls	**Very Limited:** Ponding; Flooding; Depth to saturated zone; Dusty	**Unsuitable:** Frequently flooded	7.4	18.4%
% Very Limited	**100%**	**100%**	**100%**	**57.4%**	**57.4%**		

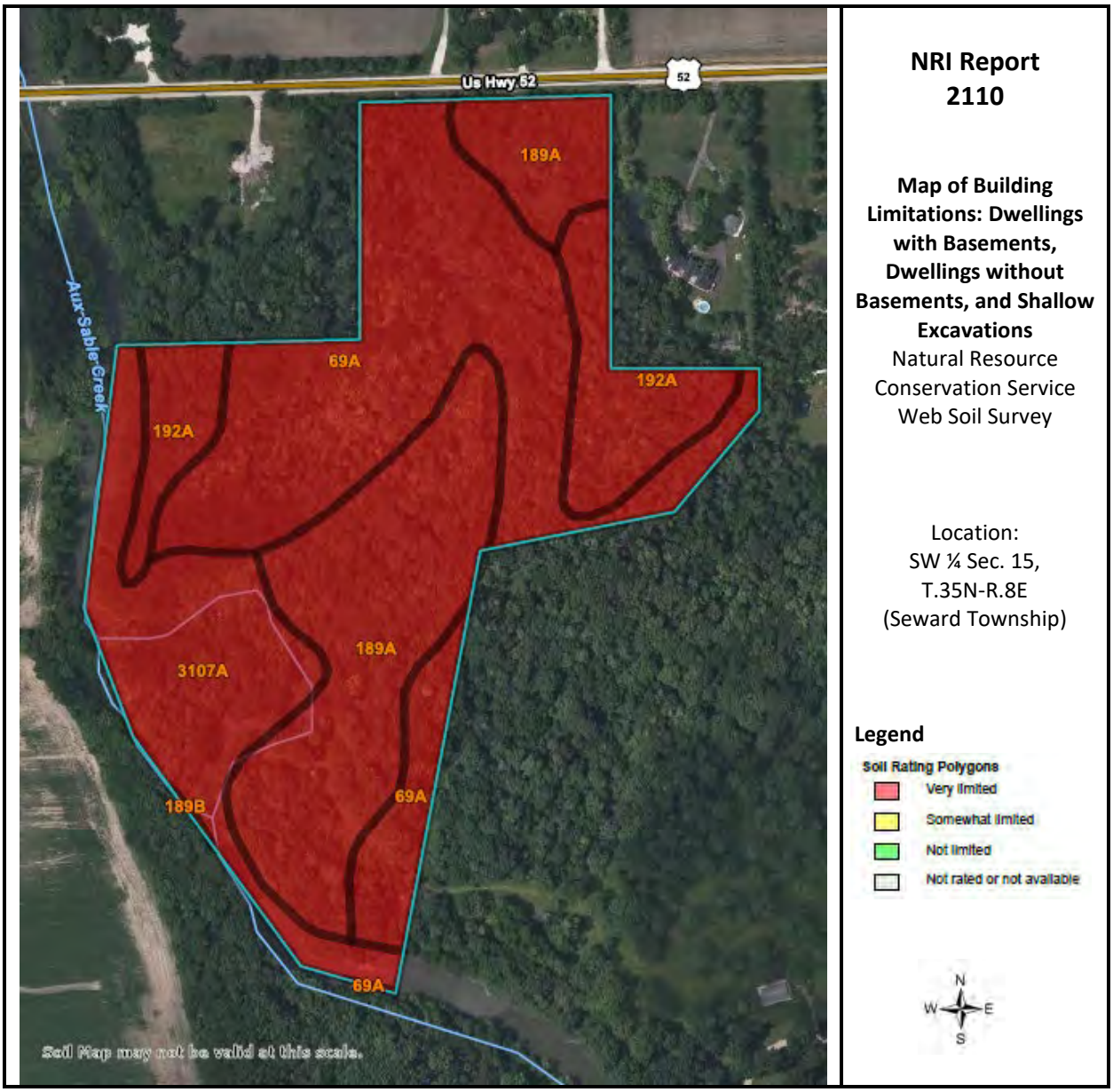


Figure 6A: Map of Building Limitations – Dwellings with Basements, Dwellings without Basements, and Shallow Excavations

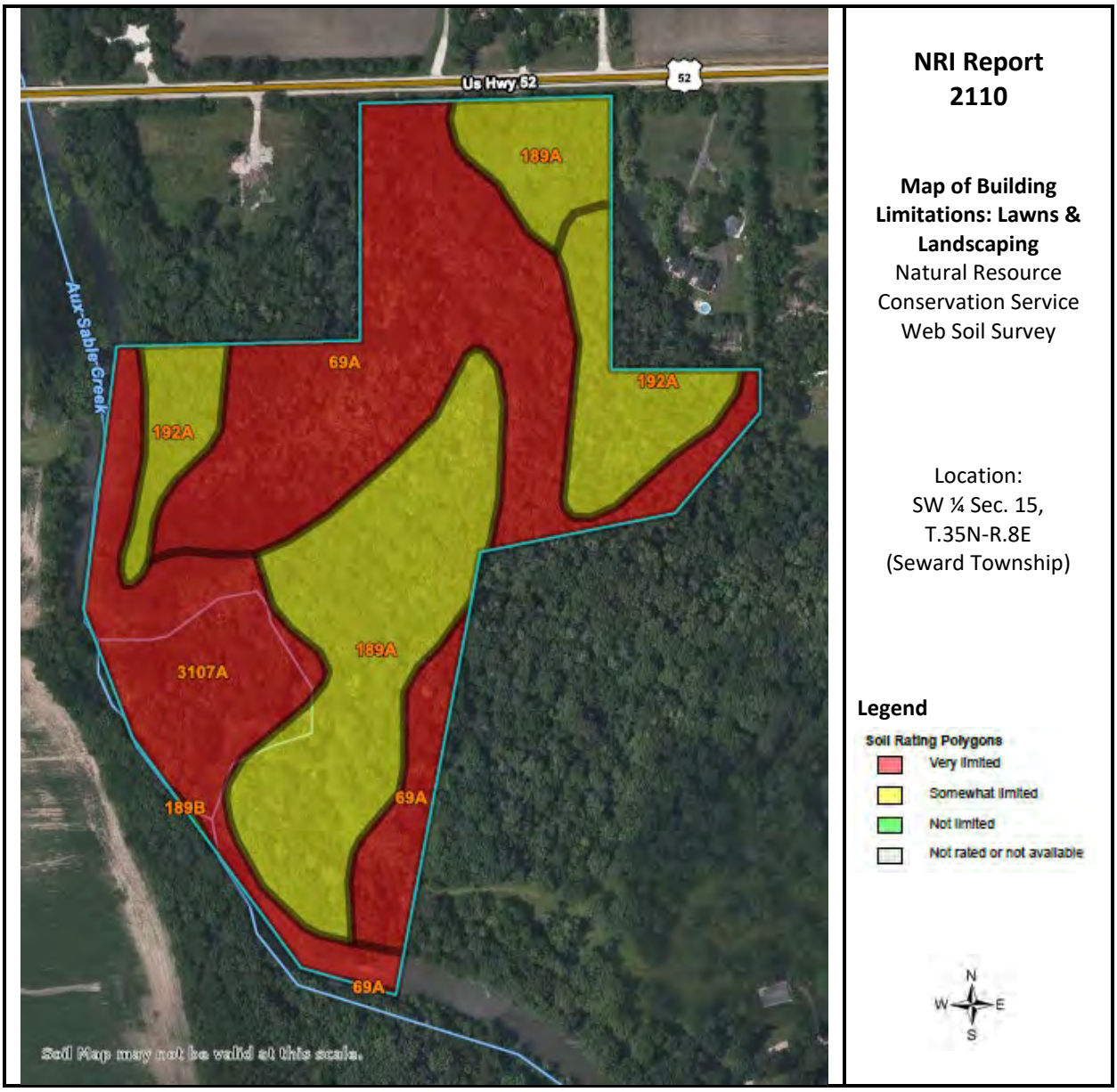


Figure 6B: Map of Building Limitations – Lawns & Landscaping

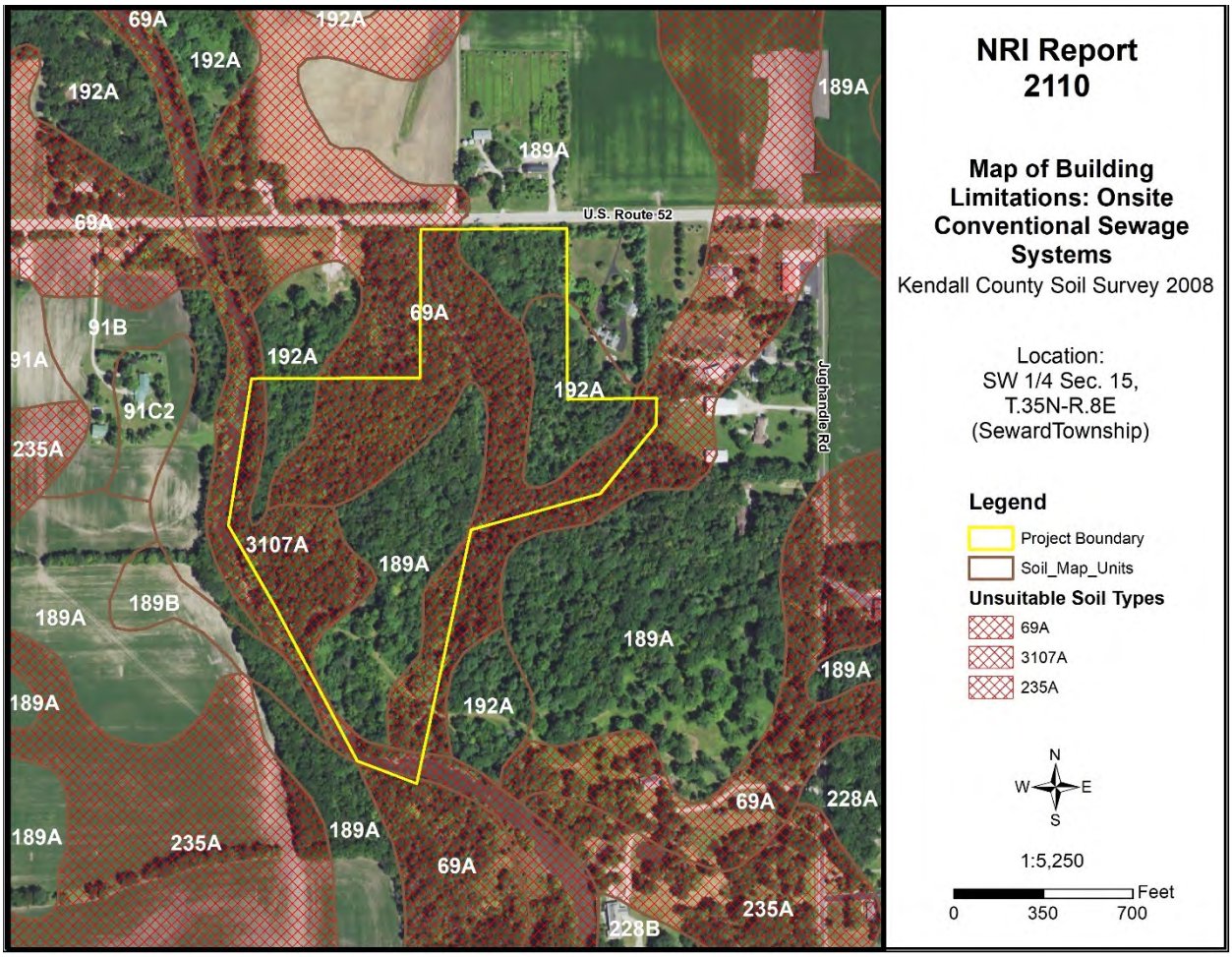


Figure 6C: Map of Building Limitations – Onsite Conventional Sewage System

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

Map Unit	Hydrologic Group	Surface Runoff	Water Table	Ponding	Flooding
69A	C/D	Negligible	January – May **Upper Limit:** 0.0’-1.0’ **Lower Limit:** 6.0’ June – December **Upper/Lower Limit**: --	January – May **Surface Water Depth:** 0.0’-0.5’ **Duration:** Brief (2 to 7 days) **Frequency:** Frequent June – December **Surface Water Depth**: -- **Duration**: -- **Frequency**: None	January – December **Duration**: -- **Frequency**: None
189A	C/D	Low	January – May **Upper Limit:** 1.0’-2.0’ **Lower Limit:** 6.0’ June – December **Upper/Lower Limit**: --	January – December **Surface Water Depth**: -- **Duration**: -- **Frequency**: None	January – December **Duration**: -- **Frequency**: None
189B	C/D	Medium	January – May **Upper Limit:** 1.0’-2.0’ **Lower Limit:** 6.0’ June – December **Upper/Lower Limit**: --	January – December **Surface Water Depth**: -- **Duration**: -- **Frequency**: None	January – December **Duration**: -- **Frequency**: None
192A	C/D	Medium	January – May **Upper Limit:** 0.5’-2.0’ **Lower Limit:** 2.0’-4.5’ June – December **Upper/Lower Limit**: --	January – December **Surface Water Depth**: -- **Duration**: -- **Frequency**: None	January – December **Duration**: -- **Frequency**: None
3107A	B/D	Negligible	January – May **Upper Limit:** 0.0’-1.0’ **Lower Limit:** 6.0’ June – December **Upper/Lower Limit**: --	January – May **Surface Water Depth:** 0.0’-0.5’ **Duration:** Brief (2 to 7 days) **Frequency:** Frequent June – December **Surface Water Depth**: -- **Duration**: -- **Frequency**: None	January – June **Duration**: Brief (2 to 7 days) **Frequency**: Frequent July – October **Duration**: -- **Frequency**: None November – December **Duration**: Brief (2 to 7 days) **Frequency**: Frequent

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 or 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.

The SWCD recommends an erosion and sediment control plan for all building sites, especially if there is a wetland or stream nearby.

Table 6: Soil Erosion Potential

Soil Type	Slope	Rating	Acreage	Percent of Parcel
69A	0-2%	Slight	15.6	39.0%
189A	0-2%	Slight	12.1	30.3%
189B	2-4%	Slight	0.0	0.1%
192A	0-2%	Slight	4.9	12.3%
3107A	0-2%	Slight	7.4	18.4%

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 soils 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 Types	Prime Designation	Acreage	Percent
69A	Prime Farmland if drained	15.6	39.0%
189A	Prime Farmland	12.1	30.3%
189B	Prime Farmland	0.0	0.1%
192A	Prime Farmland if drained	4.9	12.3%
3107A	Prime Farmland if drained	7.4	18.4%
% Prime Farmland	**100%**		

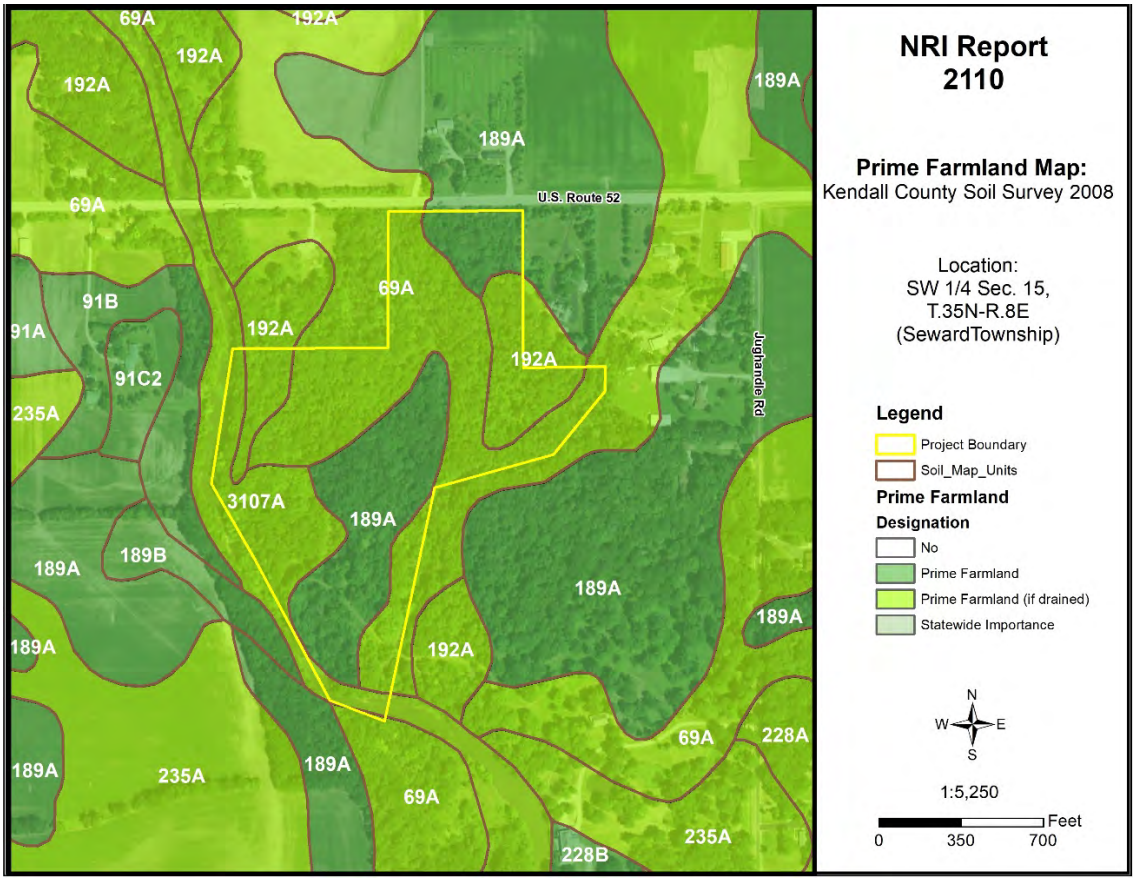


Figure 7: Map of Prime Farmland Soils

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)
69A	3	87	15.6	1357.2
189A	2	94	12.1	1137.4
189B	3	87	0.0	0.0
192A	4	79	4.9	387.1
3107A	3	87	7.4	643.8
Totals			**40.1**	**3525.5**
LE Calculation			(Product of relative value / Total Acres) 3525.5 / 40.1 = 87.92	
LE Score			**LE = 88**	

The Land Evaluation score for this site is 88, indicating that this site is designated as prime farmland 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)	0
	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)	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)	0
	3. Compatibility of agricultural and non-agricultural uses. (15-7-0)	15
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)	15
	4. Distance from fire protection service. (10-8-6-2-0)	10
	Site Assessment Score:	**101**

The Site Assessment score for this site is 101. The Land Evaluation value (88) is added to the Site Assessment value (101) to obtain a LESA Score of 189. The table below shows the level of protection for the proposed project site based on the LESA Score.

Table 9: LESA Score Summary

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

Land Evaluation Value: 88 + **Site Assessment Value:** 101 = **LESA Score: 189**

The LESA Score for this site is 189 which indicates a low level of protection for the proposed project site. Note: 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. If the project is agricultural in nature, however, a higher score may provide an indication of the suitability of the project as it relates to the compatibility with existing agricultural land use.

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 the Kendall County Planning, Building & Zoning for information regarding the County's 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.

FIRM is the acronym for the Flood Insurance Rate Map, produced by the Federal Emergency Management Agency (FEMA). 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 floodplain location.) The FIRM map has three (3) zones. Zone A includes the 100-year flood, Zone B or Zone X (shaded) is the 100 to 500-year flood, and Zone C or Zone X (unshaded) is outside the floodplain.

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 IDOT-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 drainageways, 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 is located on gradual topography (slopes 0 to 4%) with an elevation of approximately 570' above sea level. According to the FIRM map, the parcel in question contains Zone AE (100-year flood) floodway and floodplain. The parcel drains south/southwest towards Aux Sable Creek.

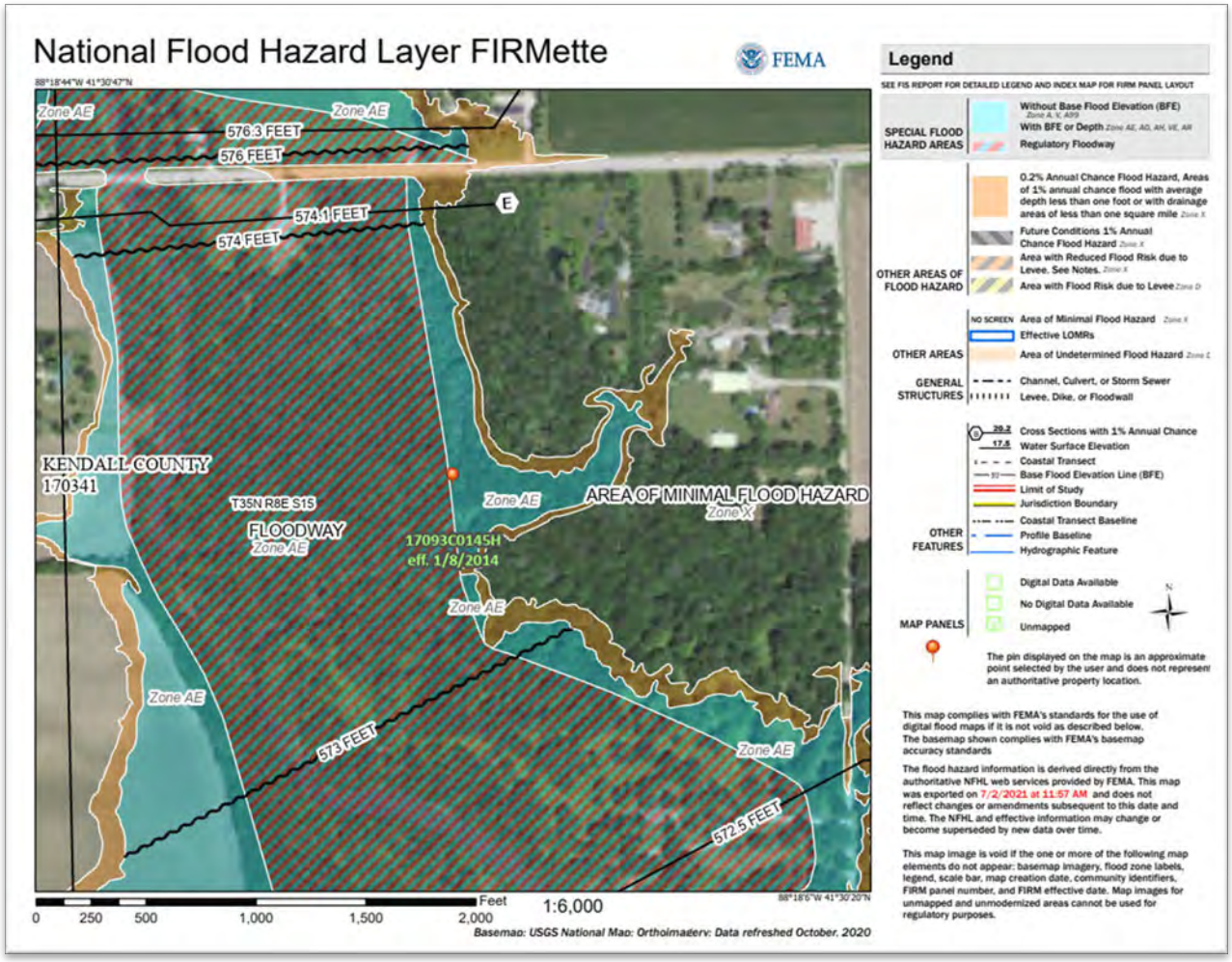


Figure 8: FEMA Floodplain Map

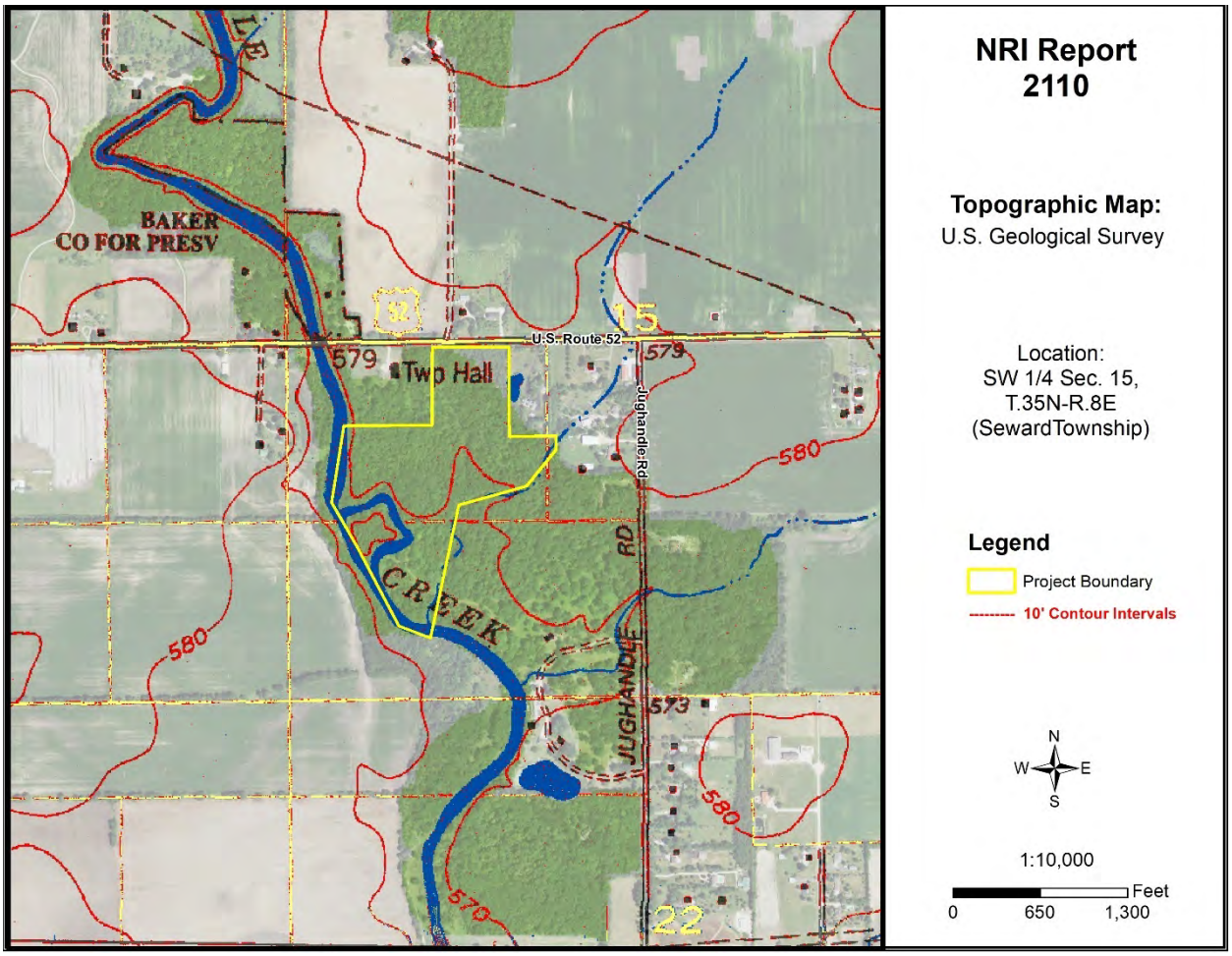


Figure 9: USGS Topographic Map

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 Upper Illinois River Watershed and the Minooka Branch Aux Sable Creek Sub Watershed.

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 NRCS (Natural Resources Conservation Service) Wetlands Inventory, which is the most comprehensive inventory to date. The NRCS 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 NRCS 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.*

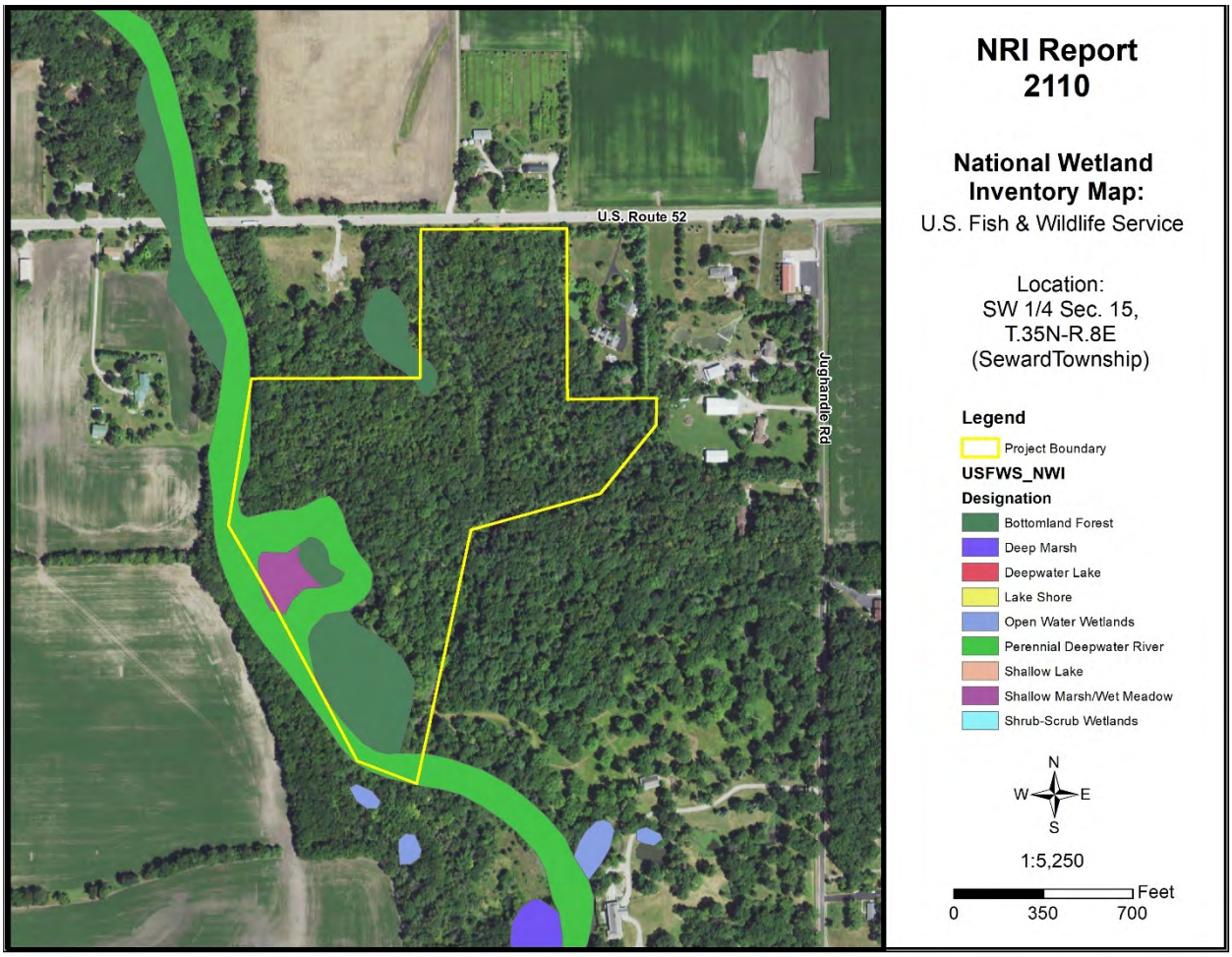


Figure 10: Wetland Map – USFWS National Wetland Inventory

Office maps indicate that mapped wetlands are present on the parcel in question (PIQ). The PIQ contains Bottomland Forest Wetlands, a Shallow Marsh/Wet Meadow, and a Perennial Deepwater River (Aux Sable Creek) according to the National Wetland Inventory Map.

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, such as a subdivision, 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	Acreage	Percent
69A	Poorly Drained	Hydric	No	15.6	39.0%
189A	Somewhat Poorly Drained	Non-Hydric	Yes	12.1	30.3%
189B	Somewhat Poorly Drained	Non-Hydric	Yes	0.0	0.1%
192A	Somewhat Poorly Drained	Non-Hydric	Yes	4.9	12.3%
3107A	Poorly Drained	Hydric	No	7.4	18.4%

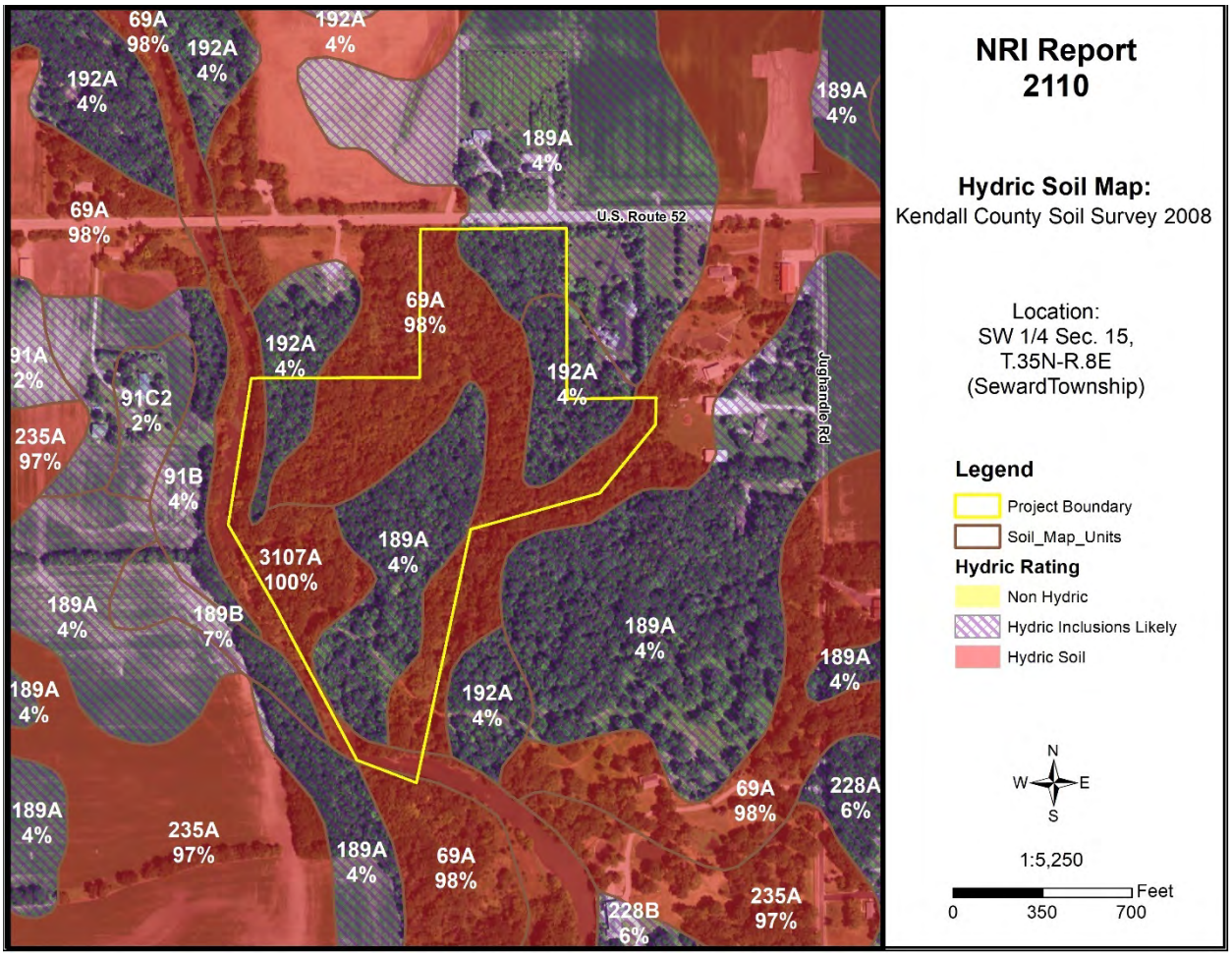


Figure 11: Hydric Soil Map

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, Rock Island District, Clock Tower Building, Rock Island, IL
- **Floodplains**: Illinois Department of Natural Resources/Office of Water Resources, Natural Resources Way, Springfield, IL 62702-1270.
- **Water Quality/Erosion Control**: Illinois Environmental Protection Agency, Springfield, IL

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 Harbor Act of 1899 or Section 404 of the Federal Water Pollution Control Act are subject to fines ranging up to $27,500 per day of violation and imprisonment for up to one year or both.

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.

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 WATERTABLE - A seasonal high watertable 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.

- **Watertable, 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.
- **Watertable, 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.
- **Watertable, 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 freshwater 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 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).

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 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.

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 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

Hydric Soils of the United States. USDA Natural Resources Conservation Service, 2007.

DFIRM – Digital Flood Insurance Rate Maps for Kendall County. Prepared by FEMA – Federal Emergency Management Agency.

Hydrologic Unit Map for Kendall County. Natural Resources Conservation Service, United States Department of Agriculture.

Land Evaluation and Site Assessment System. The Kendall County Department of Planning Building and Zoning, and The Kendall County Soil and Water Conservation District. In cooperation with: USDA, Natural Resources Conservation Service.

Soil Survey of Kendall County. United States Department of Agriculture 2008, Natural Resources Conservation Service.

Illinois Urban Manual. Association of Illinois Soil & Water Conservation Districts, 2020.

Kendall County Land Atlas and Plat Book. 21st Edition, 2021.

Potential For Contamination of Shallow Aquifers from Land Burial of Municipal Wastes. Illinois State Geological Survey.

Natural Resources Conservation Service National Wetland Inventory Map. United States Department of Agriculture.

Geologic Road Map of Illinois. Department of Natural Resources, Illinois State Geological Survey, Natural Resources Building, 615 East Peabody, Champaign IL 61820-6964.

Wetlands - The Corps of Engineers' Administration of the Section 404 Program (GAO/RCED-88-110).

Soil Erosion by Water - United States Department of Agriculture Natural Resources Conservation Service. Agriculture Information Bulletin 513.

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.