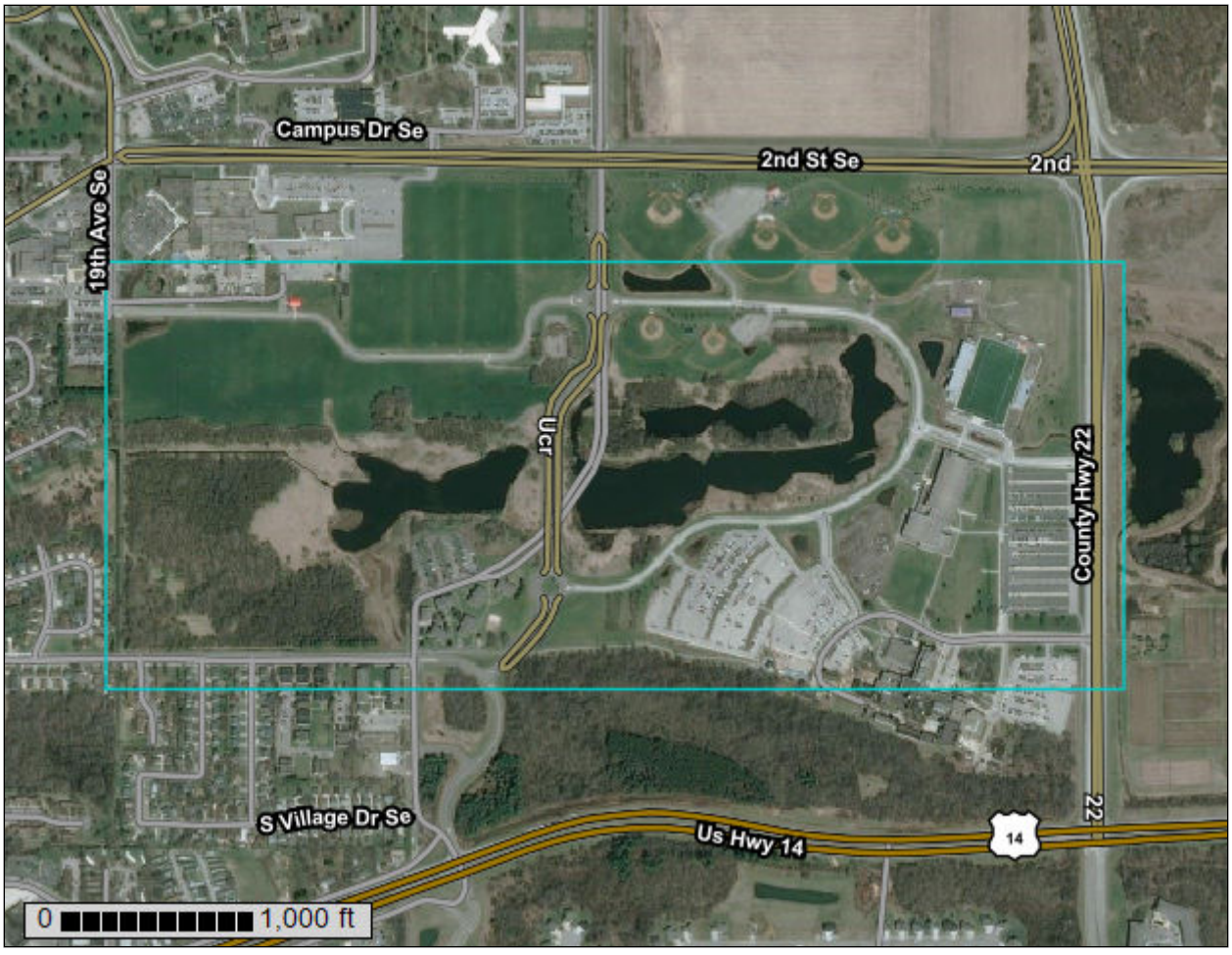
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Olmsted County, Minnesota



July 1, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:8,860 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
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Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Olmsted County, Minnesota
Survey Area Data: Version 15, Jun 5, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 23, 2019—May 25, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
27B	Dickinson sandy loam, 2 to 6 percent slopes	2.1	0.8%
27C	Dickinson sandy loam, 6 to 12 percent slopes	6.7	2.5%
252	Marshan silt loam	115.0	42.6%
340B	Whalan loam, 1 to 6 percent slopes	0.6	0.2%
473F	Dorerton loam, 25 to 40 percent slopes	2.5	0.9%
483A	Waukee loam, 0 to 2 percent slopes	28.1	10.4%
483B	Waukee loam, 2 to 5 percent slopes	21.4	7.9%
485	Lawler loam	15.1	5.6%
486	Marshan silt loam, depressional	75.0	27.8%
487	Hoopeston sandy loam	2.0	0.8%
898F	Brodale-Bellechester complex, 25 to 60 percent slopes	0.2	0.1%
W	Water	1.2	0.4%
Totals for Area of Interest		**269.9**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties

and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Olmsted County, Minnesota

27B—Dickinson sandy loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: fg00
Elevation: 800 to 1,500 feet
Mean annual precipitation: 30 to 38 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 145 to 205 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Dickinson and similar soils: 95 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dickinson

Setting

Landform: Stream terraces
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy eolian deposits

Typical profile

Ap,A - 0 to 9 inches: sandy loam
Bw1,Bw2 - 9 to 25 inches: sandy loam
BC,C - 25 to 60 inches: sand

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Forage suitability group: Sloping Upland, Low AWC, Neutral (G104XS004MN)
Other vegetative classification: Sloping Upland, Low AWC, Neutral (G104XS004MN)
Hydric soil rating: No

27C—Dickinson sandy loam, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: fg01
Elevation: 800 to 1,500 feet
Mean annual precipitation: 30 to 38 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 145 to 205 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Dickinson and similar soils: 95 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dickinson

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy eolian deposits

Typical profile

Ap,A - 0 to 20 inches: sandy loam
Bw1,Bw2 - 20 to 36 inches: sandy loam
BC,C - 36 to 60 inches: sand

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Forage suitability group: Sloping Upland, Low AWC, Neutral (G104XS004MN)
Other vegetative classification: Sloping Upland, Low AWC, Neutral (G104XS004MN)
Hydric soil rating: No

252—Marshan silt loam

Map Unit Setting

National map unit symbol: ffzy
Elevation: 1,000 to 1,330 feet
Mean annual precipitation: 30 to 38 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 145 to 205 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Marshan, frequently flooded, frequently ponded, and similar soils: 95 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marshan, Frequently Flooded, Frequently Ponded

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy sediments over sandy and gravelly outwash

Typical profile

Ap,A1 - 0 to 14 inches: silt loam
A2,Bg1 - 14 to 23 inches: silt loam
Bg2 - 23 to 30 inches: loam
2C1,2C2 - 30 to 60 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Very rareFrequentRareOccasional
Frequency of ponding: Frequent
Available water capacity: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Forage suitability group: Level Swale, Neutral (G104XS001MN)
Other vegetative classification: Level Swale, Neutral (G104XS001MN)
Hydric soil rating: Yes

340B—Whalan loam, 1 to 6 percent slopes

Map Unit Setting

National map unit symbol: fg0x
Elevation: 970 to 1,340 feet
Mean annual precipitation: 30 to 38 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 145 to 205 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Whalan and similar soils: 95 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Whalan

Setting

Landform: Hills
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy till over clayey residuum

Typical profile

A,E,E&B - 0 to 17 inches: loam
Bt1 - 17 to 22 inches: loam
2Bt2 - 22 to 27 inches: clay loam
2R - 27 to 31 inches: weathered bedrock

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Forage suitability group: Sloping Upland, Low AWC, Acid (G105XS008MN)
Other vegetative classification: Sloping Upland, Low AWC, Acid (G105XS008MN)
Hydric soil rating: No

473F—Dorerton loam, 25 to 40 percent slopes

Map Unit Setting

National map unit symbol: fg1k
Elevation: 800 to 1,400 feet
Mean annual precipitation: 30 to 38 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 145 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Dorerton and similar soils: 90 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dorerton

Setting

Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy loess over colluvium

Typical profile

A,E1,E2 - 0 to 10 inches: loam
Bt1,Bt2 - 10 to 18 inches: loam
2Bt3 - 18 to 30 inches: channery clay loam
2C - 30 to 60 inches: very flaggy loamy sand

Properties and qualities

Slope: 25 to 40 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Forage suitability group: Not Suited (G105XS024MN)
Other vegetative classification: Not Suited (G105XS024MN)
Hydric soil rating: No

Minor Components

Root

Percent of map unit: 5 percent

Landform: Flood plains
Hydric soil rating: Yes

483A—Waukee loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2tgs6
Elevation: 590 to 1,290 feet
Mean annual precipitation: 34 to 39 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 161 to 202 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Waukee and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Waukee

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium over sandy and gravelly alluvium

Typical profile

Ap - 0 to 8 inches: loam
A - 8 to 18 inches: loam
Bw1 - 18 to 24 inches: loam
Bw2 - 24 to 33 inches: loam
2C1 - 33 to 48 inches: loamy sand
2C2 - 48 to 79 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Ecological site: R104XY015IA - Terrace Savanna Quercus macrocarpa-Fraxinus pennsylvanica/Elymus virginicus-Andropogon gerardii (Bur Oak-Green Ash/ Virginia Wildrye-Big Bluestem)
Hydric soil rating: No

Minor Components

Saude
Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R104XY010IA - Sandy Upland Prairie Schizachyrium scoparium-Euphorbia corollata (Little Bluestem-Flowering Spurge)
Hydric soil rating: No

Lawler, rarely flooded
Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R104XY015IA - Terrace Savanna Quercus macrocarpa-Fraxinus pennsylvanica/Elymus virginicus-Andropogon gerardii (Bur Oak-Green Ash/ Virginia Wildrye-Big Bluestem)
Hydric soil rating: No

483B—Waukee loam, 2 to 5 percent slopes

Map Unit Setting
National map unit symbol: 2tgs8
Elevation: 580 to 1,310 feet
Mean annual precipitation: 34 to 39 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 161 to 196 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Waukee and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Waukee

Setting
Landform: Stream terraces
Landform position (three-dimensional): Tread

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium over sandy and gravelly alluvium

Typical profile

Ap - 0 to 8 inches: loam
A - 8 to 18 inches: loam
Bw1 - 18 to 24 inches: loam
Bw2 - 24 to 33 inches: loam
2C1 - 33 to 48 inches: loamy sand
2C2 - 48 to 79 inches: sand

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: 20 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Ecological site: R104XY015IA - Terrace Savanna Quercus macrocarpa-Fraxinus pennsylvanica/Elymus virginicus-Andropogon gerardii (Bur Oak-Green Ash/ Virginia Wildrye-Big Bluestem)
Hydric soil rating: No

Minor Components

Saude

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R104XY010IA - Sandy Upland Prairie Schizachyrium scoparium-Euphorbia corollata (Little Bluestem-Flowering Spurge)
Hydric soil rating: No

485—Lawler loam

Map Unit Setting

National map unit symbol: fg1z

Elevation: 700 to 1,300 feet
Mean annual precipitation: 30 to 38 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 145 to 205 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Lawler and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lawler

Setting

Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy sediments over sandy and gravelly outwash

Typical profile

Ap,A - 0 to 16 inches: loam
Bw1,Bw2,Bw3 - 16 to 33 inches: loam
2Bw4,2C1,2C2 - 33 to 60 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B/D
Forage suitability group: Sloping Upland, Neutral (G105XS002MN)
Other vegetative classification: Sloping Upland, Neutral (G105XS002MN)
Hydric soil rating: No

Minor Components

Marshan

Percent of map unit: 5 percent
Landform: Drainageways
Hydric soil rating: Yes

486—Marshan silt loam, depressional

Map Unit Setting

National map unit symbol: fg20
Elevation: 970 to 1,300 feet
Mean annual precipitation: 30 to 38 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 145 to 205 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Marshan, depressional, and similar soils: 95 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marshan, Depressional

Setting

Landform: Stream terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy sediments over sandy and gravelly outwash

Typical profile

Ap,A1 - 0 to 14 inches: silt loam
A2,Bg1 - 14 to 23 inches: silty clay loam
Bg2 - 23 to 30 inches: loam
2C1,2C2 - 30 to 60 inches: gravelly coarse sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Very rareFrequentRareOccasional
Frequency of ponding: Frequent
Available water capacity: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Forage suitability group: Ponded If Not Drained (G104XS013MN)
Other vegetative classification: Ponded If Not Drained (G104XS013MN)
Hydric soil rating: Yes

487—Hoopeston sandy loam

Map Unit Setting

National map unit symbol: fg21
Elevation: 400 to 1,400 feet
Mean annual precipitation: 30 to 38 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 145 to 205 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Hoopeston and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hoopeston

Setting

Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium over sandy outwash

Typical profile

Ap - 0 to 10 inches: sandy loam
A,Bw1,Bw2 - 10 to 32 inches: sandy loam
C1,C2 - 32 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Available water capacity: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A/D
Forage suitability group: Level Swale, Acid (G105XS005MN)
Other vegetative classification: Level Swale, Acid (G105XS005MN)
Hydric soil rating: No

Minor Components

Poorly drained soils

Percent of map unit: 10 percent

Landform: Drainageways
Hydric soil rating: Yes

898F—Brodale-Bellechester complex, 25 to 60 percent slopes

Map Unit Setting

National map unit symbol: fg2n
Elevation: 900 to 1,400 feet
Mean annual precipitation: 30 to 38 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 145 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Brodale and similar soils: 55 percent
Bellechester and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brodale

Setting

Landform: Bluffs
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy colluvium and/or residuum

Typical profile

A - 0 to 8 inches: flaggy sandy loam
Bw,C - 8 to 60 inches: flaggy loamy sand
R - 60 to 64 inches: unweathered bedrock

Properties and qualities

Slope: 40 to 60 percent
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: R105XY001WI - Dolomite Colluvium Bluff Prairie
Forage suitability group: Not Suited (G105XS024MN)
Other vegetative classification: Not Suited (G105XS024MN)
Hydric soil rating: No

Description of Bellechester

Setting

Landform: Bluffs
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy colluvium and/or residuum

Typical profile

A1,A2,AB - 0 to 16 inches: loamy sand
Bw,BC,C - 16 to 42 inches: sand
Cr - 42 to 60 inches: weathered bedrock

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 40 to 70 inches to paralithic bedrock
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: R105XY002WI - Sandstone Colluvium Bluff Prairie
Forage suitability group: Not Suited (G105XS024MN)
Other vegetative classification: Not Suited (G105XS024MN)
Hydric soil rating: No

W—Water

Map Unit Setting

National map unit symbol: fg2t
Mean annual precipitation: 30 to 38 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 145 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

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