Examples of Supporting Documentation for Natural Resource Inventory Stormwater Management Plan (SWMP)

The following documents are examples of information that could be collected as part of preparing a Natural Resource Inventory, the completion of which is part of a Better Site Design process.

Information of this type can be collected from various GIS databases and other Internet resources.

The goal of the Natural Resource Inventory is to do a rapid assessment of conditions early in the design process, so these conditions can be considered before most design work has been started.

In this way, this information can be used to influence the design process.

Exhibits of this type could be used to share information between design team members, for discussion at pre-application conferences or submitted as part of a Stormwater Management Plan (SWMP) or a Stormwater Pollution Prevention Plan (SWPPP), as applicable.

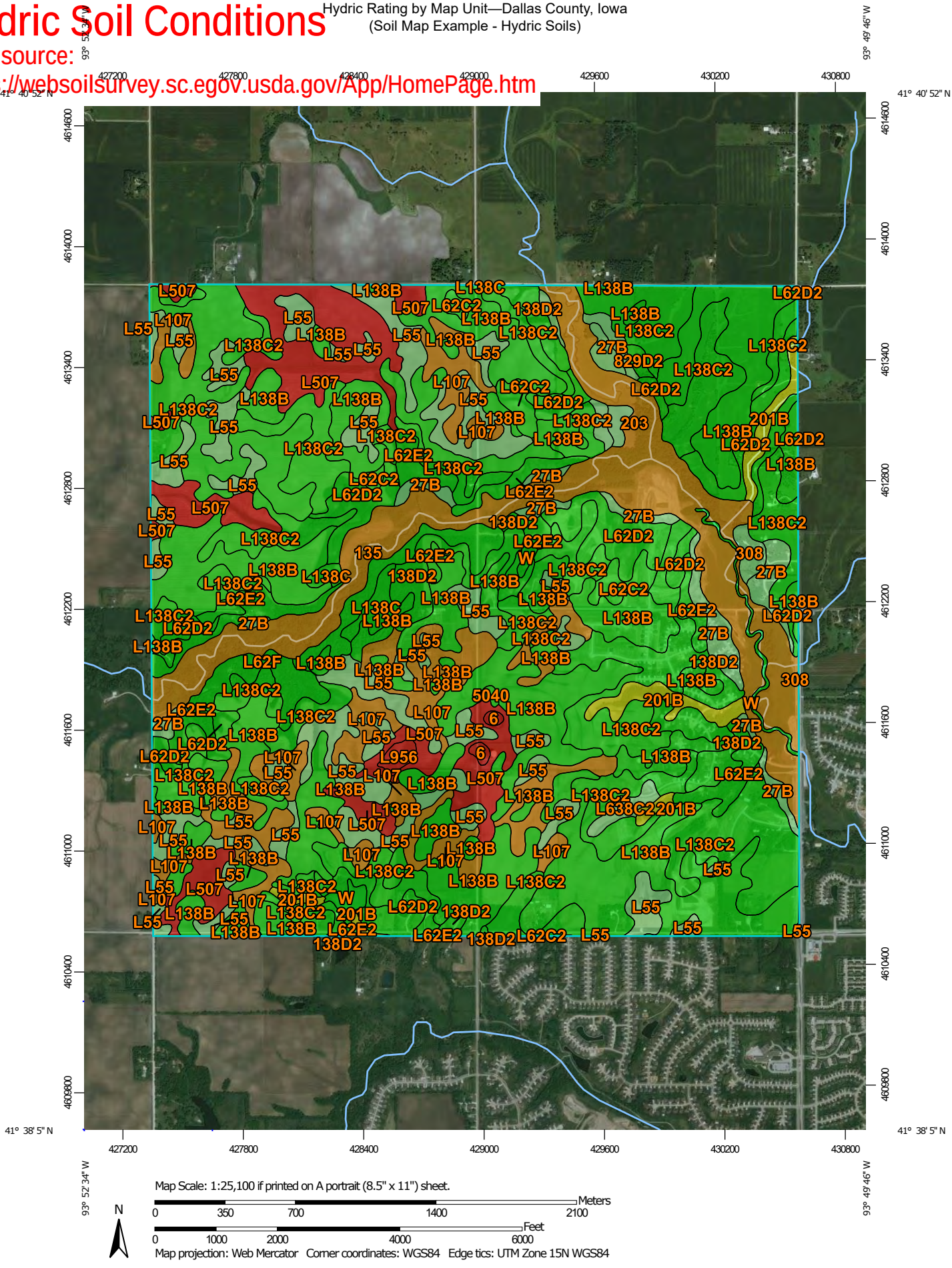
Each example includes notes about the included information and the source of the data shown.

Examples

Soil Maps
Hydric Soil Conditions

Example - Documentation of Hydric Soil Conditions

Data source: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

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: Dallas County, Iowa
Survey Area Data: Version 26, Jun 10, 2020

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

Date(s) aerial images were photographed: Jul 26, 2012—Sep 28, 2017

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.

Hydric Rating by Map Unit

These ratings indicate the potential presence of hydric soils within a given soil map unit. See following pages for more information.

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
6	Okoboji silty clay loam, 0 to 1 percent slopes	100	3.3	0.1%
27B	Terril loam, 2 to 6 percent slopes	8	63.6	2.5%
135	Coland clay loam, 0 to 2 percent slopes, occasionally flooded	90	249.6	9.7%
138D2	Clarion loam, 9 to 14 percent slopes, moderately eroded	0	63.9	2.5%
201B	Coland-Terril complex, 2 to 5 percent slopes	60	35.6	1.4%
203	Cylinder loam, 0 to 2 percent slopes	15	10.1	0.4%
308	Wadena loam, 0 to 2 percent slopes	1	7.5	0.3%
829D2	Zenor-Storden complex, 9 to 14 percent slopes, moderately eroded	0	3.1	0.1%
5040	Orthents, loamy	0	1.4	0.1%
L55	Nicollet loam, 1 to 3 percent slopes	5	249.7	9.7%
L62C2	Storden loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	0	24.1	0.9%
L62D2	Storden loam, Bemis moraine, 10 to 16 percent slopes, moderately eroded	0	124.9	4.8%
L62E2	Storden loam, Bemis moraine, 10 to 22 percent slopes, moderately eroded	0	99.1	3.8%
L62F	Belview loam, Bemis moraine, 16 to 30 percent slopes	0	24.7	1.0%
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	95	175.8	6.8%
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	0	763.0	29.5%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
L138C	Clarion loam, Bemis moraine, 6 to 10 percent slopes	0	14.6	0.6%
L138C2	Clarion loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	0	484.7	18.8%
L507	Canisteo clay loam, Bemis moraine, 0 to 2 percent slopes	100	159.4	6.2%
L638C2	Clarion-Storden complex, Bemis moraine, 6 to 10 percent slopes, moderately eroded	5	8.1	0.3%
L956	Harps-Okoboji complex, Bemis moraine, 0 to 2 percent slopes	100	5.0	0.2%
W	Water	0	13.2	0.5%
Totals for Area of Interest			**2,584.3**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

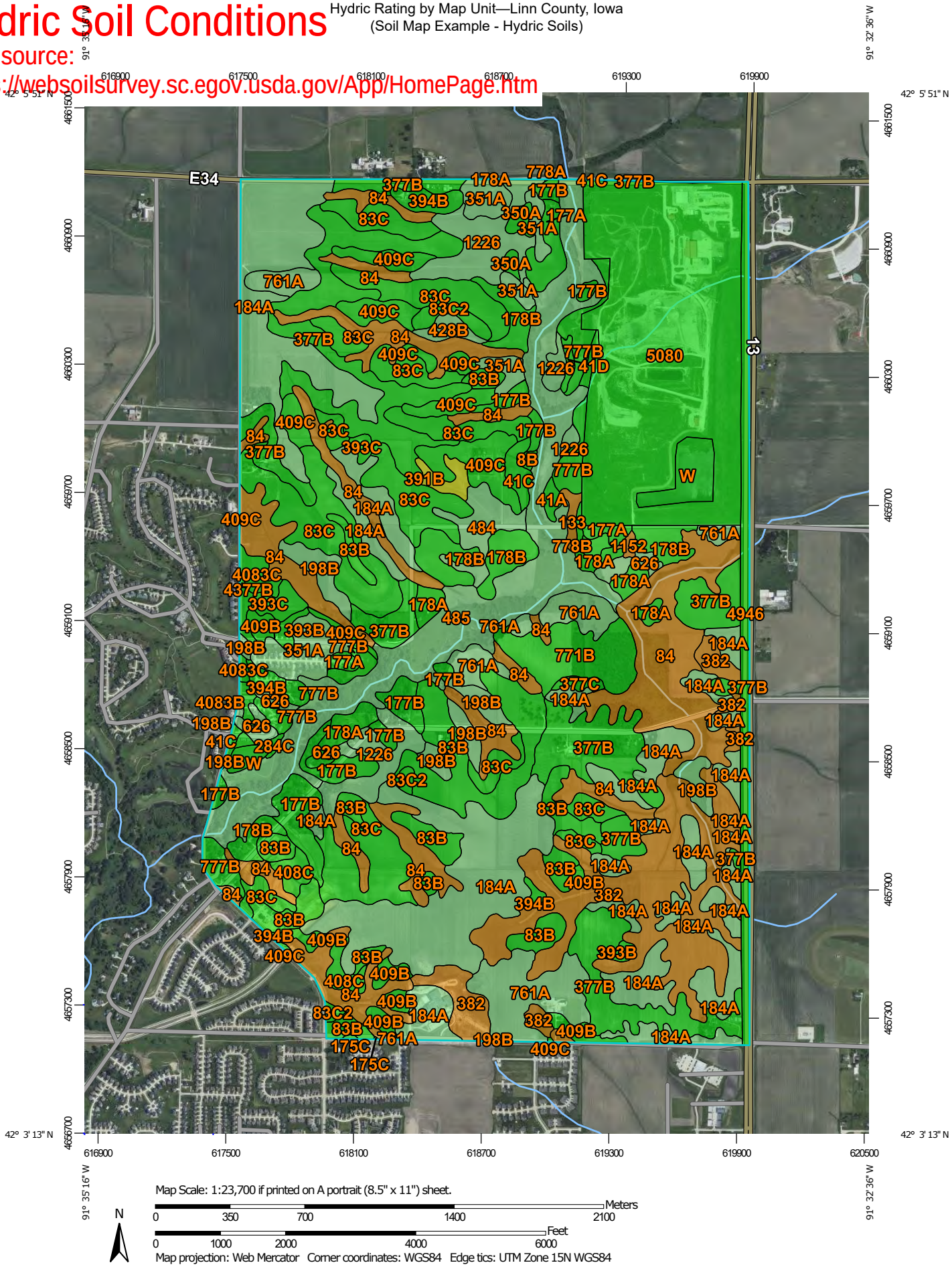
Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Example - Documentation of Hydric Soil Conditions

Data source: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm



MAP LEGEND

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

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

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: Linn County, Iowa
Survey Area Data: Version 27, Jun 10, 2020

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

Date(s) aerial images were photographed: Jul 1, 2020—Nov 18, 2020

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.

Hydric Rating by Map Unit

These ratings indicate the potential presence of hydric soils within a given soil map unit. See following pages for more information.

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
8B	Judson silty clay loam, 2 to 5 percent slopes	0	1.5	0.1%
41A	Sparta loamy fine sand, 0 to 2 percent slopes	0	2.8	0.1%
41C	Sparta loamy fine sand, 5 to 9 percent slopes	0	7.7	0.3%
41D	Sparta loamy fine sand, 9 to 18 percent slopes	0	2.4	0.1%
83B	Kenyon loam, 2 to 5 percent slopes	0	115.6	4.9%
83C	Kenyon loam, 5 to 9 percent slopes	0	194.1	8.2%
83C2	Kenyon loam, 5 to 9 percent slopes, eroded	0	9.8	0.4%
84	Clyde silty clay loam, 0 to 3 percent slopes	95	233.4	9.8%
133	Colo silty clay loam, 0 to 2 percent slopes, occasionally flooded	95	3.5	0.1%
175C	Dickinson fine sandy loam, 5 to 9 percent slopes	0	0.3	0.0%
177A	Saude loam, 0 to 2 percent slopes	0	17.0	0.7%
177B	Saude loam, 2 to 5 percent slopes	0	47.8	2.0%
177C	Saude loam, 5 to 9 percent slopes	0	2.3	0.1%
178A	Waukee loam, 0 to 2 percent slopes	0	24.3	1.0%
178B	Waukee loam, 2 to 5 percent slopes	0	49.7	2.1%
184A	Klinger silty clay loam, 1 to 4 percent slopes	5	332.8	14.0%
198B	Floyd loam, 1 to 4 percent slopes	5	34.2	1.4%
284C	Flagler sandy loam, 5 to 9 percent slopes	0	2.5	0.1%
350A	Waukegan silt loam, 0 to 2 percent slopes	0	5.5	0.2%
351A	Atterberry silt loam, sandy substratum, 0 to 2 percent slopes	5	43.5	1.8%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
377B	Dinsdale silty clay loam, 2 to 5 percent slopes	0	208.3	8.8%
377C	Dinsdale silty clay loam, 5 to 9 percent slopes	0	3.0	0.1%
382	Maxfield silty clay loam, 0 to 2 percent slopes	90	147.6	6.2%
391B	Clyde-Floyd complex, 1 to 4 percent slopes	60	6.9	0.3%
393B	Sparta loamy fine sand, loamy substratum, 2 to 5 percent slopes	0	5.7	0.2%
393C	Sparta loamy fine sand, loamy substratum, 5 to 9 percent slopes	0	13.3	0.6%
394B	Ostrander loam, 2 to 5 percent slopes	0	13.5	0.6%
408C	Olin fine sandy loam, 5 to 9 percent slopes	0	11.9	0.5%
409B	Dickinson fine sandy loam, loam substratum, 2 to 5 percent slopes	0	22.8	1.0%
409C	Dickinson fine sandy loam, loam substratum, 5 to 9 percent slopes	0	58.5	2.5%
428B	Ely silty clay loam, 2 to 5 percent slopes	5	5.9	0.2%
484	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded	5	18.4	0.8%
485	Spillville loam, 0 to 2 percent slopes, occasionally flooded	10	168.2	7.1%
626	Hayfield loam, 0 to 2 percent slopes, rarely flooded	10	14.8	0.6%
761A	Franklin silt loam, 0 to 2 percent slopes	5	73.3	3.1%
771B	Waubeek silt loam, 2 to 5 percent slopes	0	36.5	1.5%
777B	Wapsie loam, 2 to 5 percent slopes	0	35.9	1.5%
778A	Sattre loam, 0 to 2 percent slopes	0	0.0	0.0%
778B	Sattre loam, 2 to 5 percent slopes	0	2.7	0.1%
1152	Marshan clay loam, 0 to 2 percent slopes, rarely flooded	85	1.7	0.1%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1226	Lawler loam, 0 to 2 percent slopes, rarely flooded	10	57.3	2.4%
4083B	Kenyon-Urban land complex, 2 to 5 percent slopes	0	3.6	0.2%
4083C	Kenyon-Urban land complex, 5 to 9 percent slopes	0	7.6	0.3%
4377B	Dinsdale-Urban land complex, 2 to 5 percent slopes	0	0.2	0.0%
4946	Udorthents-Interstate highway complex, 0 to 5 percent slopes	0	39.4	1.7%
5080	Anthroportic Udorthents, sanitary landfill	0	269.1	11.3%
W	Water	0	20.4	0.9%
Totals for Area of Interest			**2,377.0**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Hydric Rating by Map Unit—Woodbury County, Iowa
((Soil Map Example))

Map Scale: 1:12,800 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 150 300 600 900

Feet
0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

Hydric (100%)
Hydric (66 to 99%)
Hydric (33 to 65%)
Hydric (1 to 32%)
Not Hydric (0%)
Not rated or not available

Soil Rating Lines

Hydric (100%)
Hydric (66 to 99%)
Hydric (33 to 65%)
Hydric (1 to 32%)
Not Hydric (0%)
Not rated or not available

Soil Rating Points

Hydric (100%)
Hydric (66 to 99%)
Hydric (33 to 65%)
Hydric (1 to 32%)
Not Hydric (0%)
Not rated or not available

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 1:12,000.

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: Woodbury County, Iowa
Survey Area Data: Version 30, Jun 10, 2020

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

Date(s) aerial images were photographed: Oct 4, 2014—Feb 16, 2017

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.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
137	Haynie silt loam, deep loess, 0 to 2 percent slopes, rarely flooded	0	205.6	32.9%
156	Albaton silty clay, 0 to 2 percent slopes, rarely flooded	90	95.2	15.2%
237B	Sarpy loamy fine sand, 2 to 5 percent slopes, rarely flooded	0	30.8	4.9%
518	Morconick fine sandy loam, 0 to 2 percent slopes, rarely flooded	0	44.9	7.2%
750	Ticonic very fine sandy loam, 0 to 2 percent slopes, rarely flooded	0	100.8	16.1%
945	Albaton silty clay, depressional, drained, 0 to 1 percent slopes, frequently flooded	100	9.3	1.5%
3146	Onawa-Albaton complex, 0 to 2 percent slopes, rarely flooded	25	74.3	11.9%
3513	Grable-Morconick complex, 0 to 2 percent slopes, rarely flooded	0	9.7	1.5%
3549	Modale complex, 0 to 2 percent slopes, rarely flooded	10	17.3	2.8%
5010	Pits, sand and gravel	0	1.6	0.3%
5044	Fluvaquents, 0 to 2 percent slopes, frequently flooded	75	35.3	5.6%
Totals for Area of Interest			**624.5**	**100.0%**

These ratings indicate the potential presence of hydric soils within a given soil map unit. See following pages for more information.

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

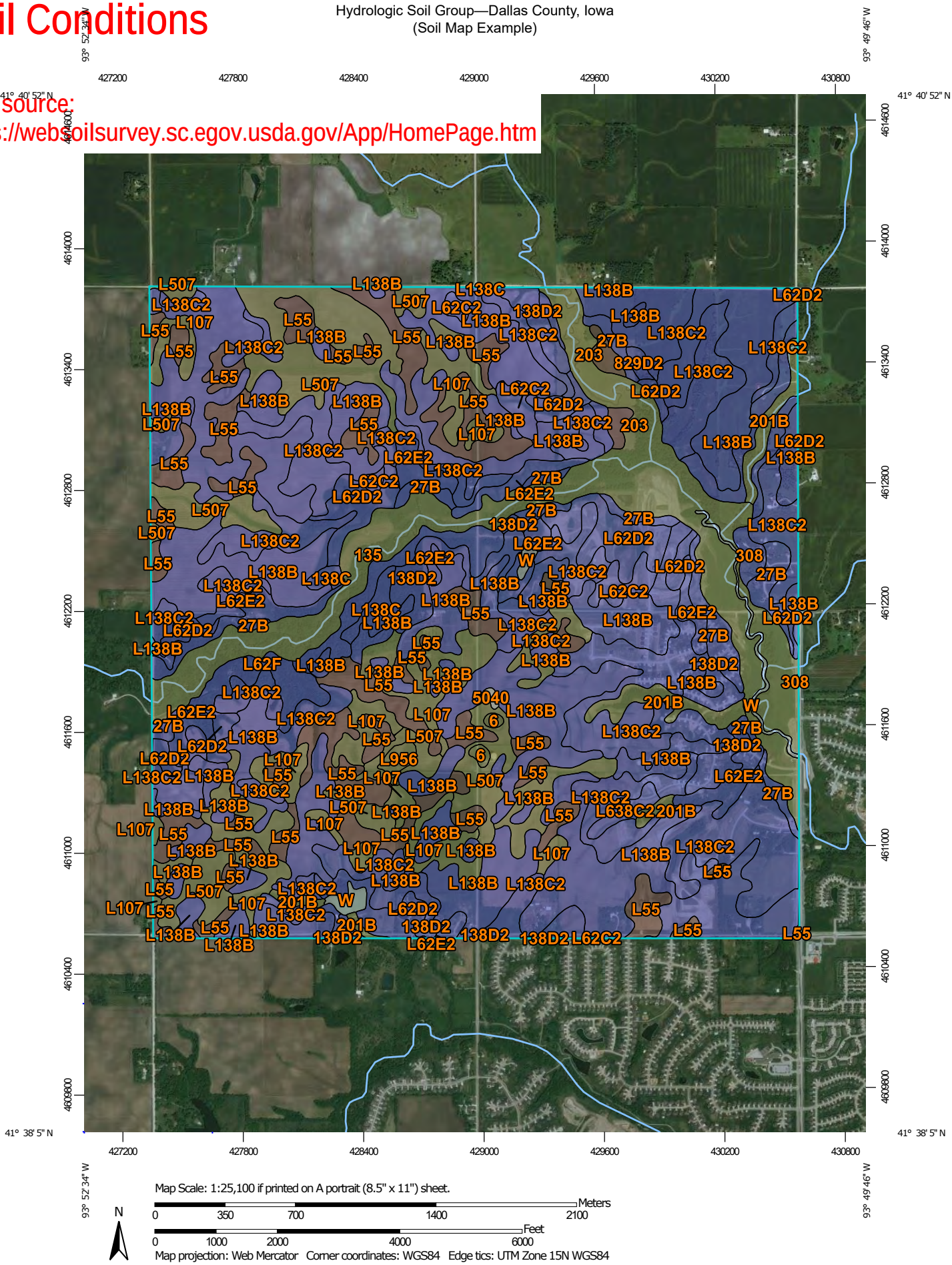
Examples

Soil Maps
Site Slopes and
Hydrologic Soil
Group (HSG)
Conditions

Example - Documentation of Site Soil Conditions

Hydrologic Soil Group—Dallas County, Iowa
(Soil Map Example)

Data source:
https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

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: Dallas County, Iowa
Survey Area Data: Version 26, Jun 10, 2020

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

Date(s) aerial images were photographed: Jul 26, 2012—Sep 28, 2017

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.

This output can be used to evaluate HSG categories at the subject site...

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
6	Okoboji silty clay loam, 0 to 1 percent slopes	C/D	3.3	0.1%
27B	Terril loam, 2 to 6 percent slopes	B	63.6	2.5%
135	Coland clay loam, 0 to 2 percent slopes, occasionally flooded	C/D	249.6	9.7%
138D2	Clarion loam, 9 to 14 percent slopes, moderately eroded	B	63.9	2.5%
201B	Coland-Terril complex, 2 to 5 percent slopes	C/D	35.6	1.4%
203	Cylinder loam, 0 to 2 percent slopes	B/D	10.1	0.4%
308	Wadena loam, 0 to 2 percent slopes	B	7.5	0.3%
829D2	Zenor-Storden complex, 9 to 14 percent slopes, moderately eroded	B	3.1	0.1%
5040	Orthents, loamy		1.4	0.1%
L55	Nicollet loam, 1 to 3 percent slopes	B/D	249.7	9.7%
L62C2	Storden loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	B	24.1	0.9%
L62D2	Storden loam, Bemis moraine, 10 to 16 percent slopes, moderately eroded	B	124.9	4.8%
L62E2	Storden loam, Bemis moraine, 10 to 22 percent slopes, moderately eroded	B	99.1	3.8%
L62F	Belview loam, Bemis moraine, 16 to 30 percent slopes	B	24.7	1.0%
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	C/D	175.8	6.8%
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	B	763.0	29.5%

...in addition a preliminary evaluation of steep slopes can be made from this information. Site topographic surveys could be used to evaluate site slopes in greater detail.

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
L138C	Clarion loam, Bemis moraine, 6 to 10 percent slopes	B	14.6	0.6%
L138C2	Clarion loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	B	484.7	18.8%
L507	Canisteo clay loam, Bemis moraine, 0 to 2 percent slopes	C/D	159.4	6.2%
L638C2	Clarion-Storden complex, Bemis moraine, 6 to 10 percent slopes, moderately eroded	B	8.1	0.3%
L956	Harps-Okoboji complex, Bemis moraine, 0 to 2 percent slopes	C/D	5.0	0.2%
W	Water		13.2	0.5%
Totals for Area of Interest			**2,584.3**	**100.0%**

Description

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The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

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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.

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. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

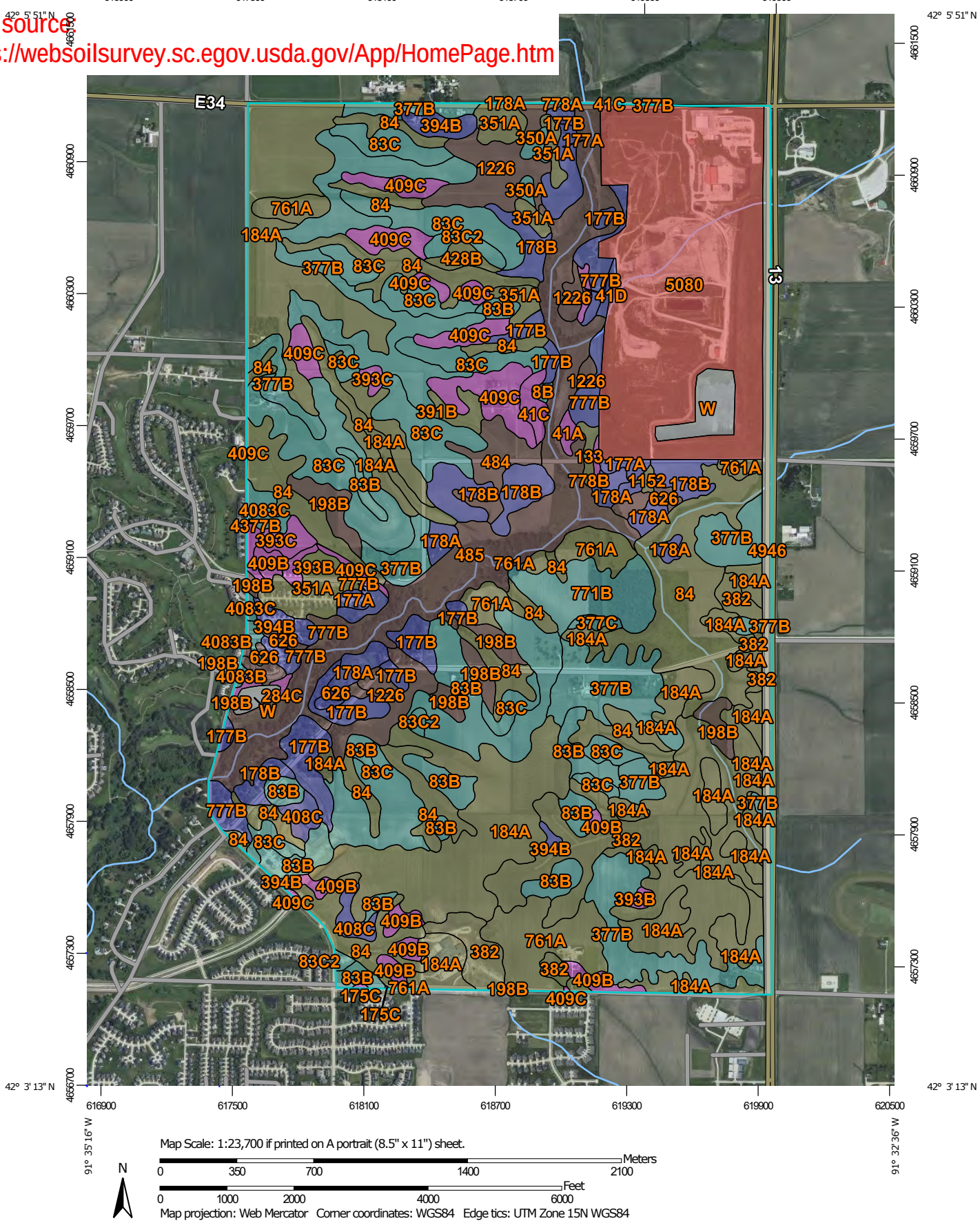
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Example - Documentation of Site Soil Conditions

Hydrologic Soil Group—Linn County, Iowa
(Soil Map Example)

Data source:
https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

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: Linn County, Iowa
Survey Area Data: Version 27, Jun 10, 2020

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

Date(s) aerial images were photographed: Jul 1, 2020—Nov 18, 2020

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.

This output can be used to evaluate HSG categories at the subject site...

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
8B	Judson silty clay loam, 2 to 5 percent slopes	C	1.5	0.1%
41A	Sparta loamy fine sand, 0 to 2 percent slopes	A	2.8	0.1%
41C	Sparta loamy fine sand, 5 to 9 percent slopes	A	7.7	0.3%
41D	Sparta loamy fine sand, 9 to 18 percent slopes	A	2.4	0.1%
83B	Kenyon loam, 2 to 5 percent slopes	C	115.6	4.9%
83C	Kenyon loam, 5 to 9 percent slopes	C	194.1	8.2%
83C2	Kenyon loam, 5 to 9 percent slopes, eroded	C	9.8	0.4%
84	Clyde silty clay loam, 0 to 3 percent slopes	C/D	233.4	9.8%
133	Colo silty clay loam, 0 to 2 percent slopes, occasionally flooded	C/D	3.5	0.1%
175C	Dickinson fine sandy loam, 5 to 9 percent slopes	A	0.3	0.0%
177A	Saude loam, 0 to 2 percent slopes	B	17.0	0.7%
177B	Saude loam, 2 to 5 percent slopes	B	47.8	2.0%
177C	Saude loam, 5 to 9 percent slopes	B	2.3	0.1%
178A	Waukee loam, 0 to 2 percent slopes	B	24.3	1.0%
178B	Waukee loam, 2 to 5 percent slopes	B	49.7	2.1%
184A	Klinger silty clay loam, 1 to 4 percent slopes	C/D	332.8	14.0%
198B	Floyd loam, 1 to 4 percent slopes	B/D	34.2	1.4%
284C	Flagler sandy loam, 5 to 9 percent slopes	A	2.5	0.1%
350A	Waukegan silt loam, 0 to 2 percent slopes	C	5.5	0.2%
351A	Atterberry silt loam, sandy substratum, 0 to 2 percent slopes	C/D	43.5	1.8%

...in addition a preliminary evaluation of steep slopes can be made from this information. Site topographic surveys could be used to evaluate site slopes in greater detail.

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
377B	Dinsdale silty clay loam, 2 to 5 percent slopes	C	208.3	8.8%
377C	Dinsdale silty clay loam, 5 to 9 percent slopes	C	3.0	0.1%
382	Maxfield silty clay loam, 0 to 2 percent slopes	C/D	147.6	6.2%
391B	Clyde-Floyd complex, 1 to 4 percent slopes	C/D	6.9	0.3%
393B	Sparta loamy fine sand, loamy substratum, 2 to 5 percent slopes	A	5.7	0.2%
393C	Sparta loamy fine sand, loamy substratum, 5 to 9 percent slopes	A	13.3	0.6%
394B	Ostrander loam, 2 to 5 percent slopes	B	13.5	0.6%
408C	Olin fine sandy loam, 5 to 9 percent slopes	B	11.9	0.5%
409B	Dickinson fine sandy loam, loam substratum, 2 to 5 percent slopes	A	22.8	1.0%
409C	Dickinson fine sandy loam, loam substratum, 5 to 9 percent slopes	A	58.5	2.5%
428B	Ely silty clay loam, 2 to 5 percent slopes	C/D	5.9	0.2%
484	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded	B/D	18.4	0.8%
485	Spillville loam, 0 to 2 percent slopes, occasionally flooded	B/D	168.2	7.1%
626	Hayfield loam, 0 to 2 percent slopes, rarely flooded	B/D	14.8	0.6%
761A	Franklin silt loam, 0 to 2 percent slopes	C/D	73.3	3.1%
771B	Waubeek silt loam, 2 to 5 percent slopes	C	36.5	1.5%
777B	Wapsie loam, 2 to 5 percent slopes	B	35.9	1.5%
778A	Sattre loam, 0 to 2 percent slopes	B	0.0	0.0%
778B	Sattre loam, 2 to 5 percent slopes	B	2.7	0.1%
1152	Marshan clay loam, 0 to 2 percent slopes, rarely flooded	C/D	1.7	0.1%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1226	Lawler loam, 0 to 2 percent slopes, rarely flooded	B/D	57.3	2.4%
4083B	Kenyon-Urban land complex, 2 to 5 percent slopes	C	3.6	0.2%
4083C	Kenyon-Urban land complex, 5 to 9 percent slopes	C	7.6	0.3%
4377B	Dinsdale-Urban land complex, 2 to 5 percent slopes	C	0.2	0.0%
4946	Udorthents-Interstate highway complex, 0 to 5 percent slopes		39.4	1.7%
5080	Anthroportic Udorthents, sanitary landfill	D	269.1	11.3%
W	Water		20.4	0.9%
Totals for Area of Interest			**2,377.0**	**100.0%**

Description

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Rating Options

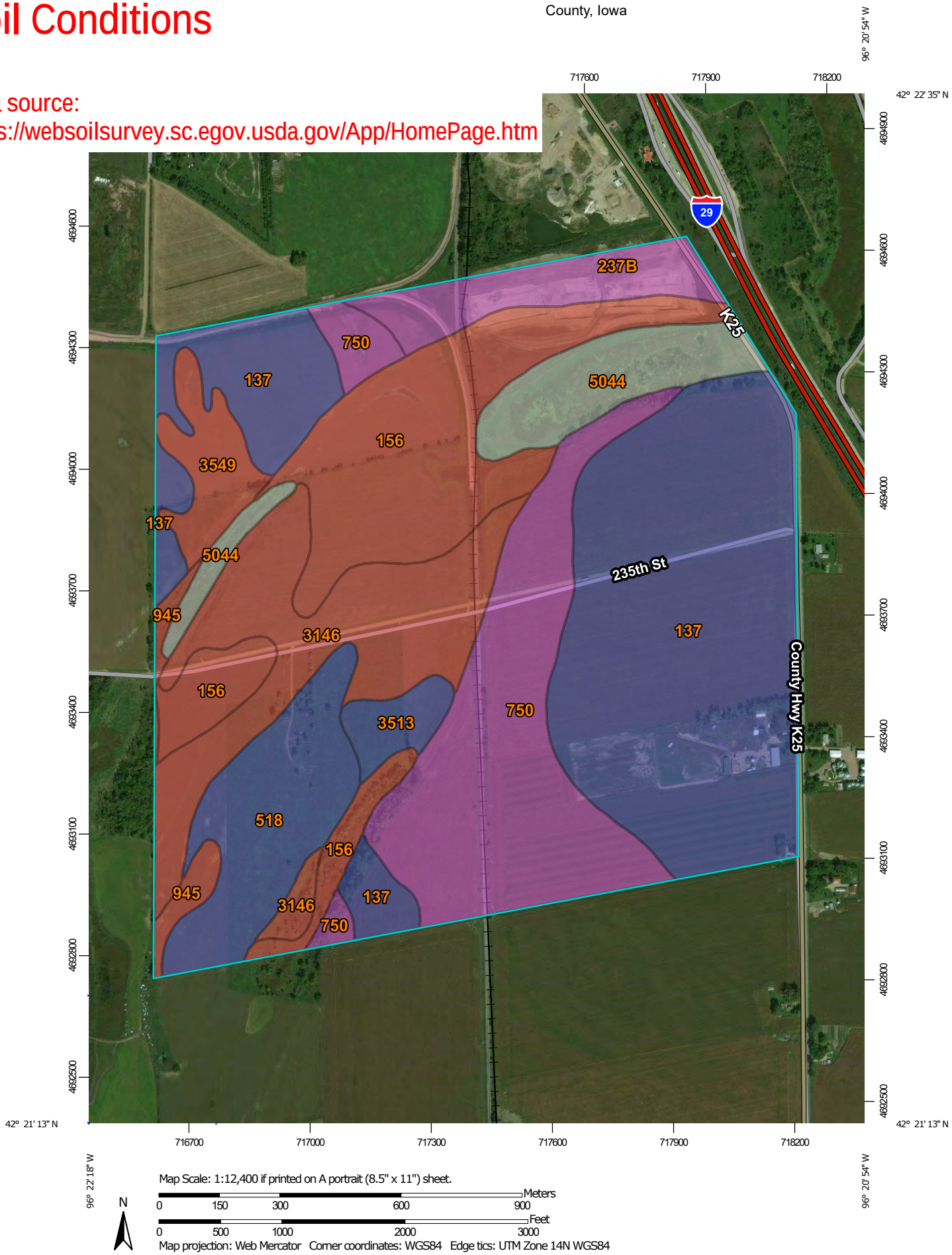
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Example - Documentation of Site Soil Conditions

Data source:
https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

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 1:12,000.

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)

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

Soil Survey Area: Woodbury County, Iowa
Survey Area Data: Version 30, Jun 10, 2020

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

Date(s) aerial images were photographed: Oct 4, 2014—Feb 16, 2017

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.

This output can be used to evaluate HSG categories at the subject site...

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
137	Haynie silt loam, deep loess, 0 to 2 percent slopes, rarely flooded	B	196.3	32.3%
156	Albaton silty clay, 0 to 2 percent slopes, rarely flooded	D	95.7	15.7%
237B	Sarpy loamy fine sand, 2 to 5 percent slopes, rarely flooded	A	25.6	4.2%
518	Morconick fine sandy loam, 0 to 2 percent slopes, rarely flooded	B	45.7	7.5%
750	Ticonic very fine sandy loam, 0 to 2 percent slopes, rarely flooded	A	102.1	16.8%
945	Albaton silty clay, depressional, drained, 0 to 1 percent slopes, frequently flooded	D	7.3	1.2%
3146	Onawa-Albaton complex, 0 to 2 percent slopes, rarely flooded	D	73.1	12.0%
3513	Grable-Morconick complex, 0 to 2 percent slopes, rarely flooded	B	9.7	1.6%
3549	Modale complex, 0 to 2 percent slopes, rarely flooded	D	17.3	2.8%
5044	Fluvaquents, 0 to 2 percent slopes, frequently flooded		35.2	5.8%
Totals for Area of Interest			**607.9**	**100.0%**

...in addition a preliminary evaluation of steep slopes can be made from this information. Site topographic surveys could be used to evaluate site slopes in greater detail.

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Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

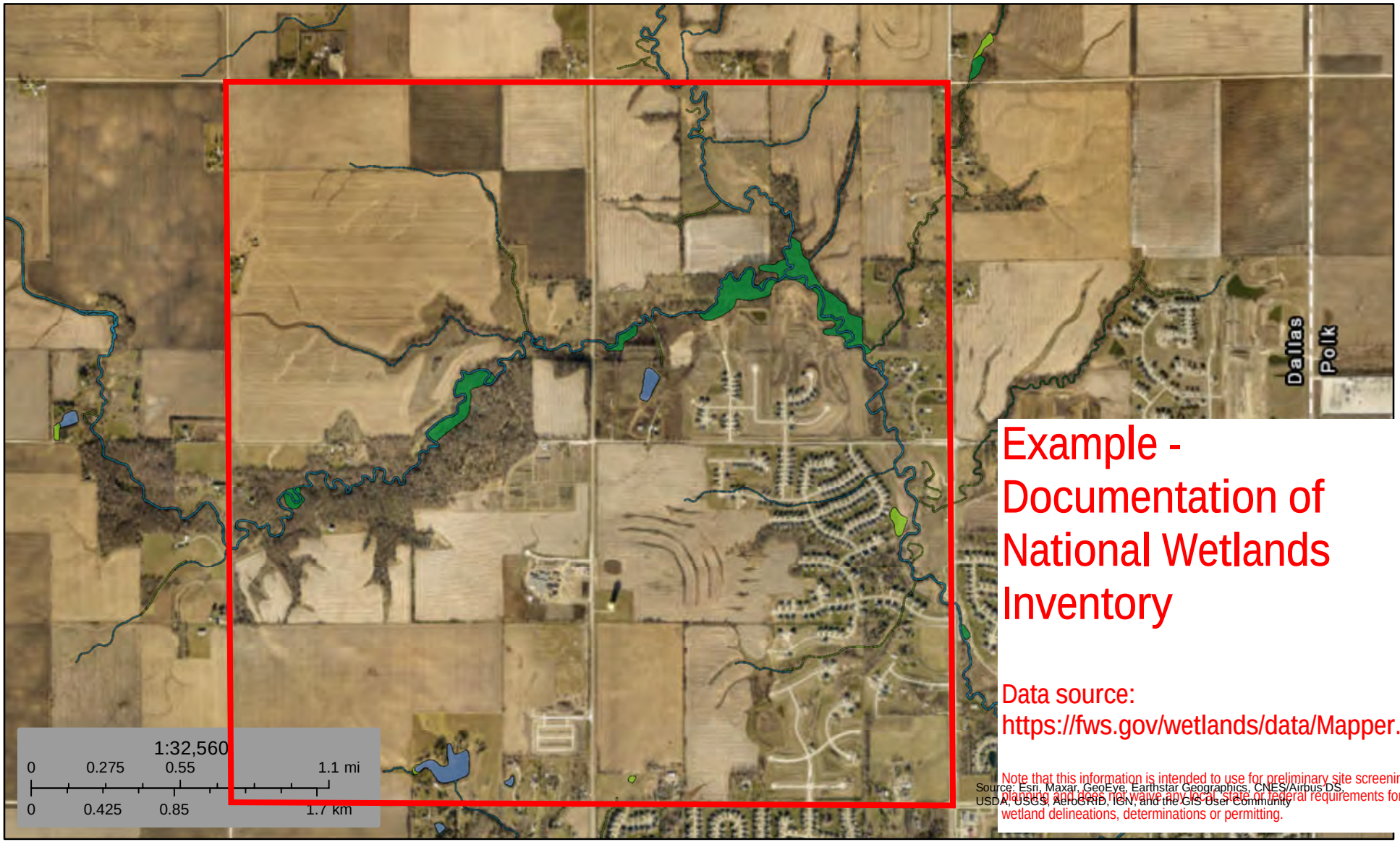
Tie-break Rule: Higher

Examples

National Wetland Inventory (NWI) Maps

U.S. Fish and Wildlife Service
National Wetlands Inventory

NWI Site Example



Example - Documentation of National Wetlands Inventory

Data source:
https://fws.gov/wetlands/data/Mapper.html

Note that this information is intended to use for preliminary site screening or planning and does not waive any local, state or federal requirements for wetland delineations, determinations or permitting.

February 23, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

U.S. Fish and Wildlife Service

National Wetlands Inventory

NWI Site Example

Example - Documentation of National Wetlands Inventory

Data source: https://fws.gov/wetlands/data/Mapper.html

Note that this information is intended to use for preliminary site screening or planning and does not waive any local, state or federal requirements for wetland delineations, determinations or permitting.

February 23, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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U.S. Fish and Wildlife Service
National Wetlands Inventory

NWI Site Example

November 12, 2020

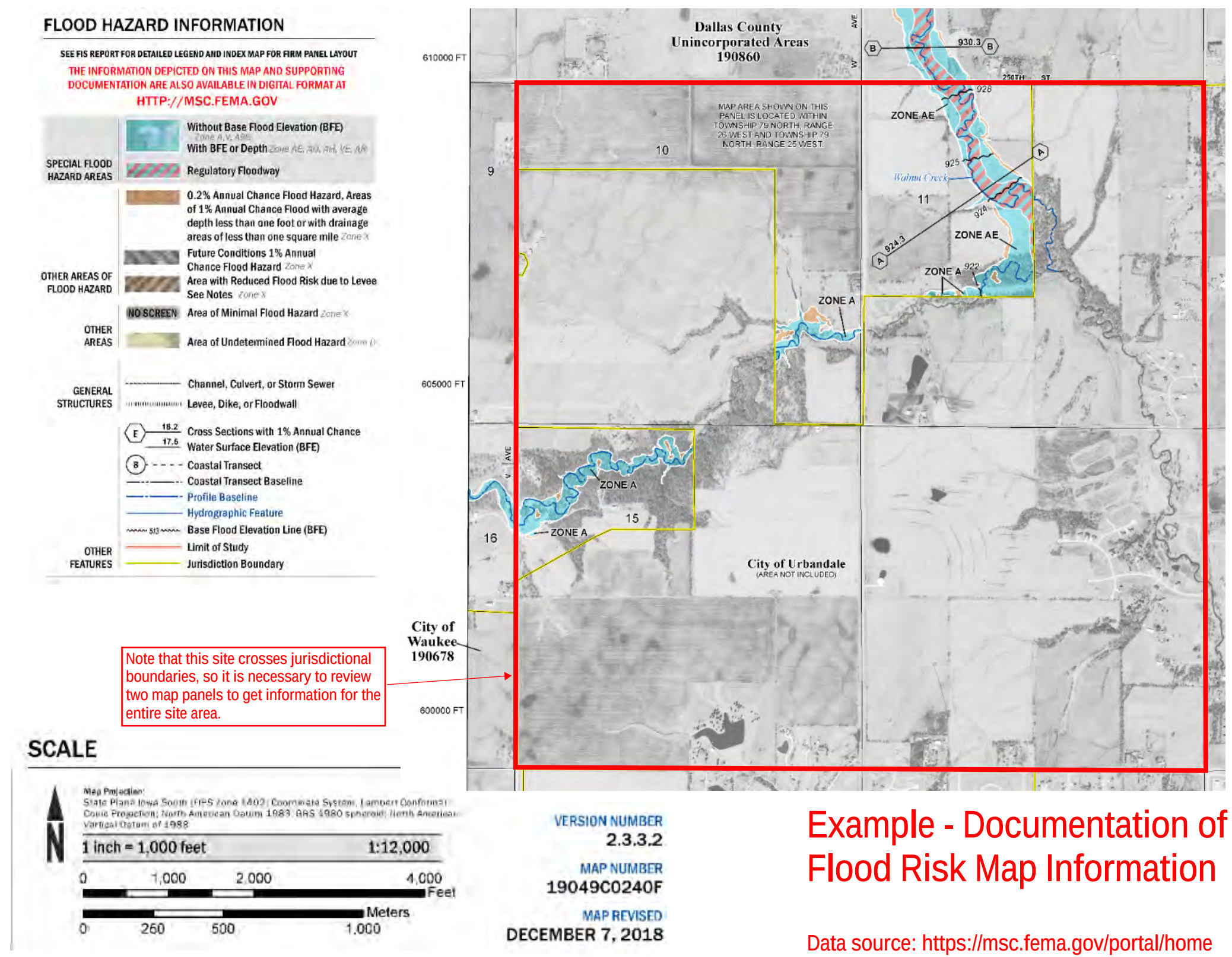
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Examples

FEMA Flood Insurance Rate Map (FIRM) Information



Example - Documentation of Flood Risk Map Information

Data source: https://msc.fema.gov/portal/home

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR ZONE DESCRIPTIONS AND INDEX MAP

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

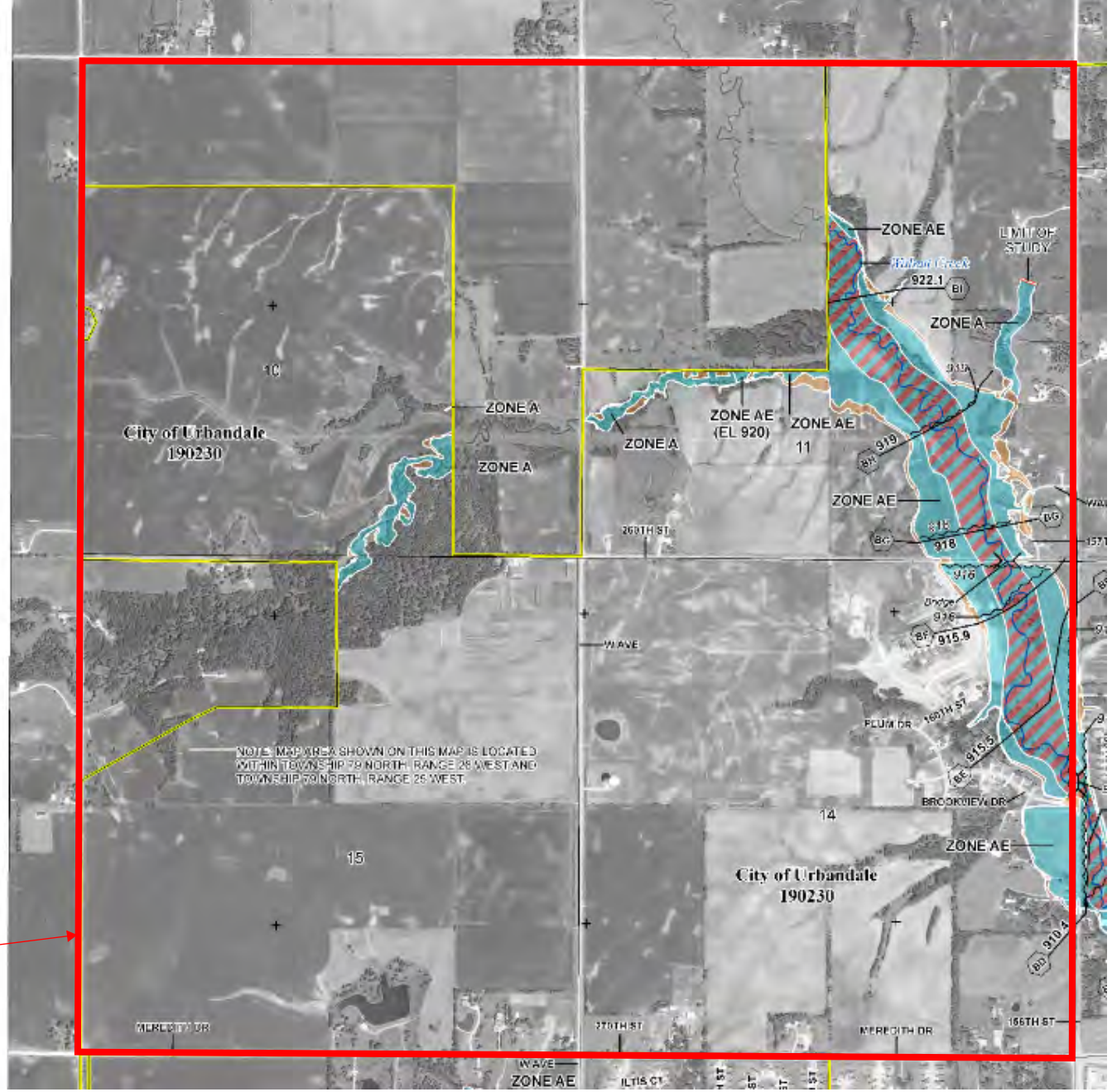
HTTPS://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A, V, A99 With BFE or Depth Zone AE, AO, AH, VE, AR Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Are of 1% annual chance flood with averag depth less than one foot or with draina areas of less than one square mile Zone Future Conditions 1% Annual Chance Flood Hazard Zone X Area with Reduced Flood Risk due to L See Notes. Zone X
OTHER AREAS	NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone Area of Undetermined Flood Hazard Zo
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer Accredited or Provisionally Accredited Levee, Dike, or Floodwall Non-accredited Levee, Dike, or Floodw
	E 18.2 / 17.6 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE) 8 Coastal Transect Coastal Transect Baseline Profile Baseline Hydrographic Feature 513 Base Flood Elevation Line (BFE)
OTHER FEATURES	Limit of Study Jurisdiction Boundary

610000 FT

605000 FT

600000 FT



Note that this site crosses jurisdictional boundaries, so it is necessary to review two map panels to get information for the entire site area.

SCALE

N

1 inch = 1,000 feet 1:12,000

0 1,000 2,000 4,000 Feet

0 250 500 1,000 Meters

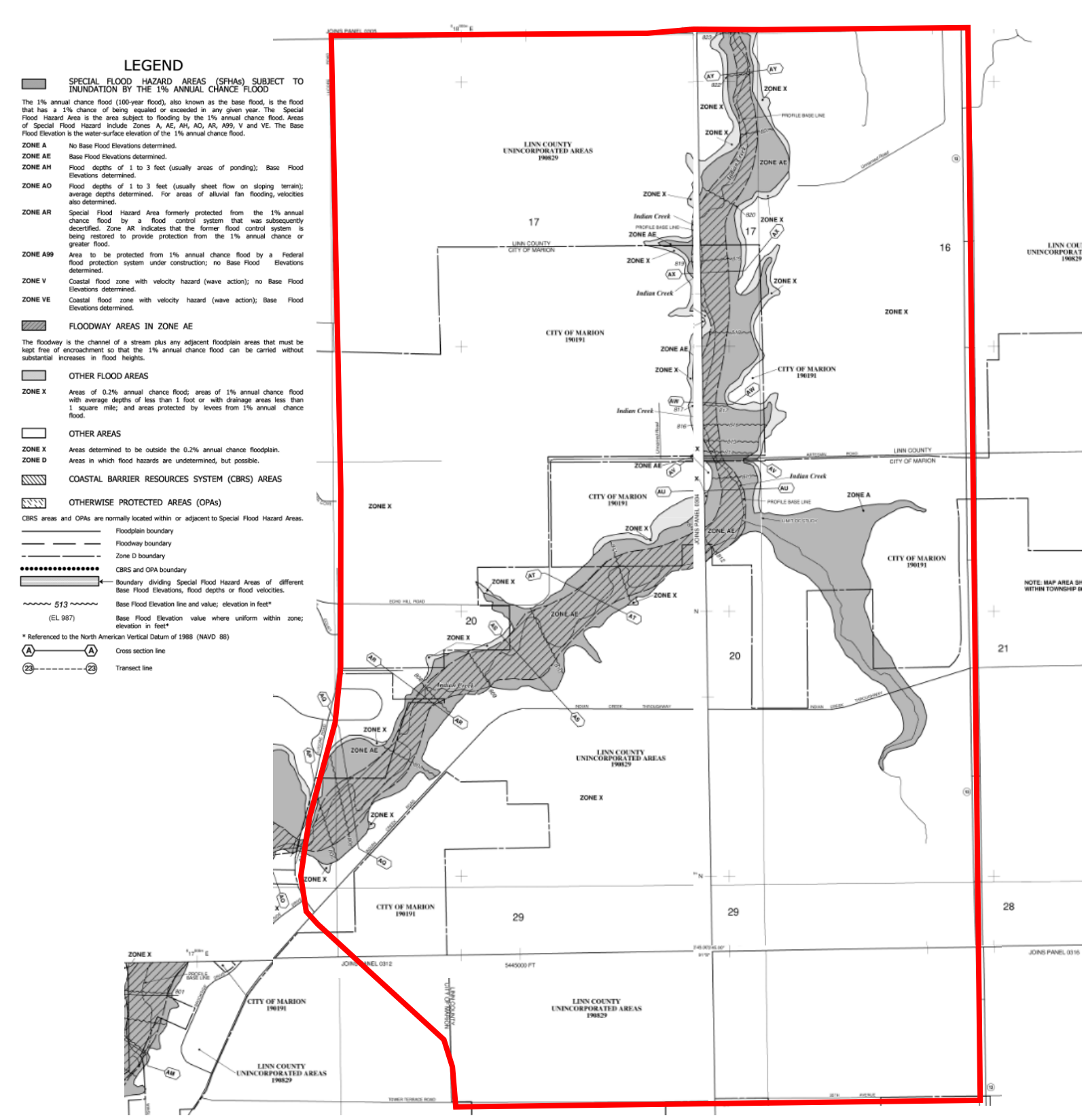
VERSION NUMBER
2.2.2.1

MAP NUMBER
19153C0165F

EFFECTIVE DATE
FEBRUARY 1, 2019

Example - Documentation of Flood Risk Map Information

Data source: https://msc.fema.gov/portal/home



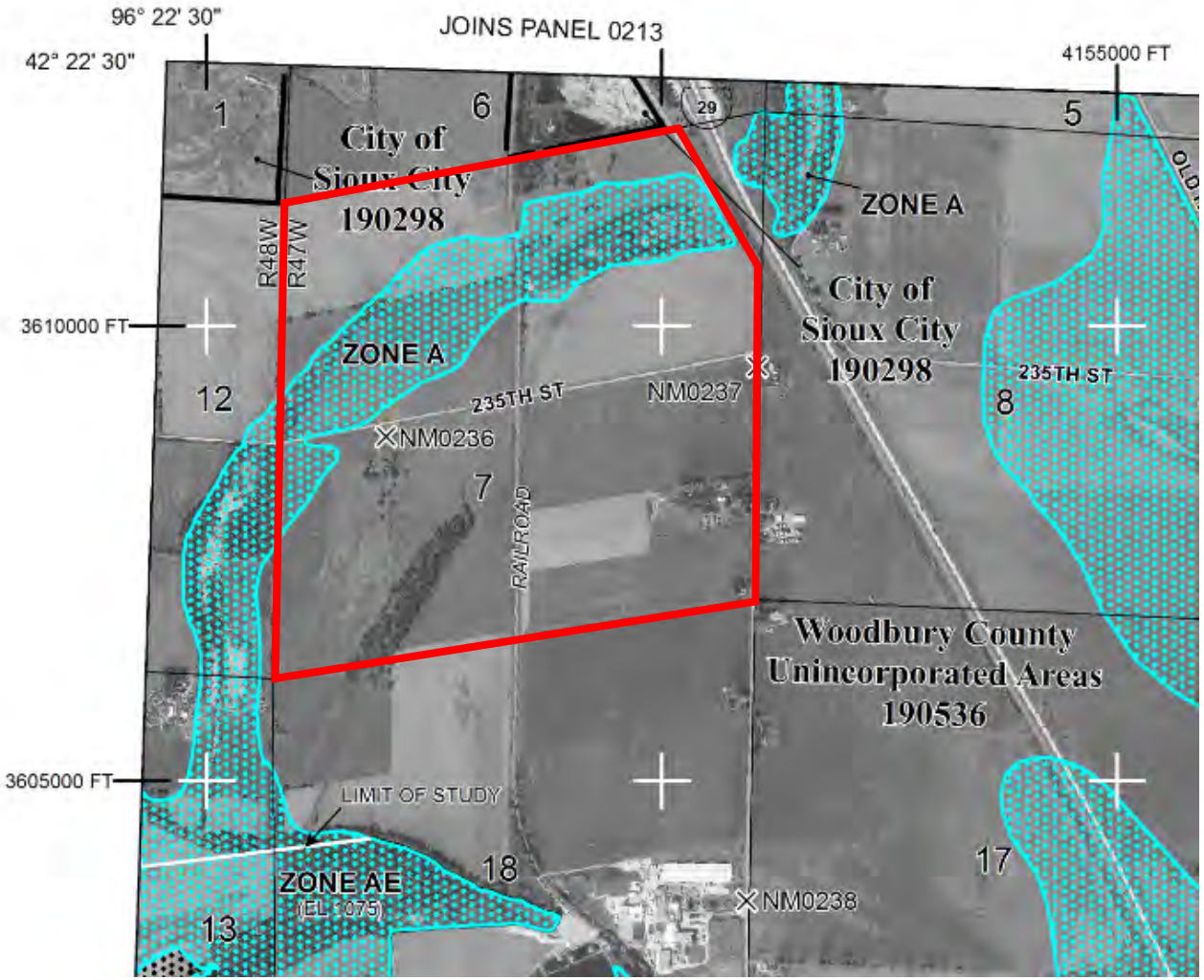
Note that this site crosses four map panels, so it is necessary to review all of these map panels to get information for the entire site area.

Example - Documentation of Flood Risk Map Information

MAP NUMBER	MAP NUMBER	MAP NUMBER	MAP NUMBER
19113C0304D	19113C0308D	19113C0312D	19113C0316D
EFFECTIVE DATE	EFFECTIVE DATE	EFFECTIVE DATE	EFFECTIVE DATE
APRIL 5, 2010	APRIL 5, 2010	APRIL 5, 2010	APRIL 5, 2010

Federal Emergency Management Agency

Data source: https://msc.fema.gov/portal/home



Example - Documentation of Flood Risk Map Information

Data source: https://msc.fema.gov/portal/home

MAP NUMBER
19193C0400D

EFFECTIVE DATE
SEPTEMBER 29, 2011

Federal Emergency Management Agency

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAS)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% annual chance floodplain boundary
	0.2% annual chance floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

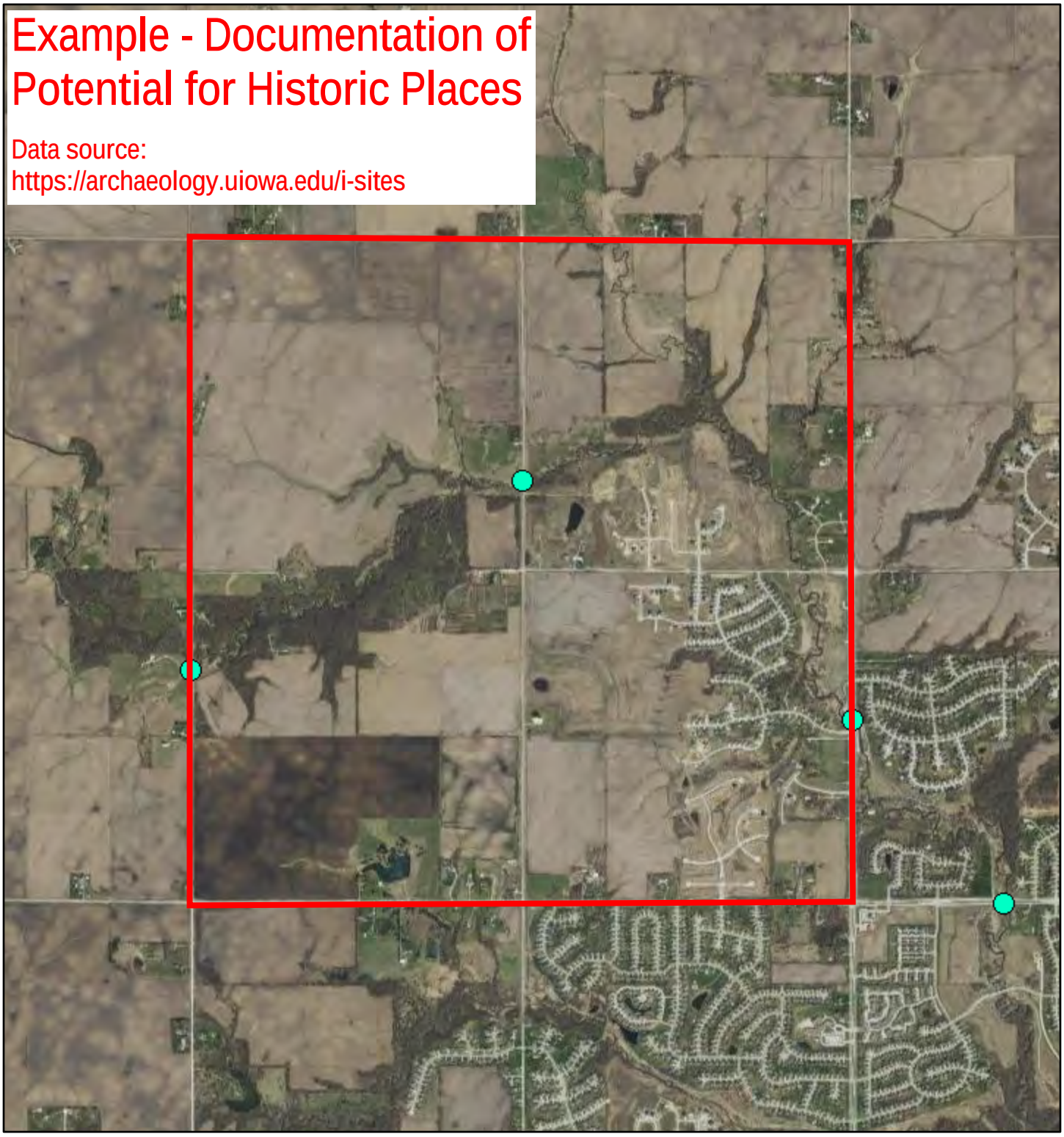
* Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
23 — 23	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000mE	1000-meter Universal Transverse Mercator grid values, zone 15
600000 FT	5000-foot grid ticks: Iowa State Plane coordinate system, north zone (FIPSZONE 1401), Transverse Mercator projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

Examples

Potential For Historic Places Maps

Historic Sites Example



February 23, 2021

Historic Structures Large Scale

National Register Historic

Cemeteries

Archeological Sites

Fewer than 4

4 - 20

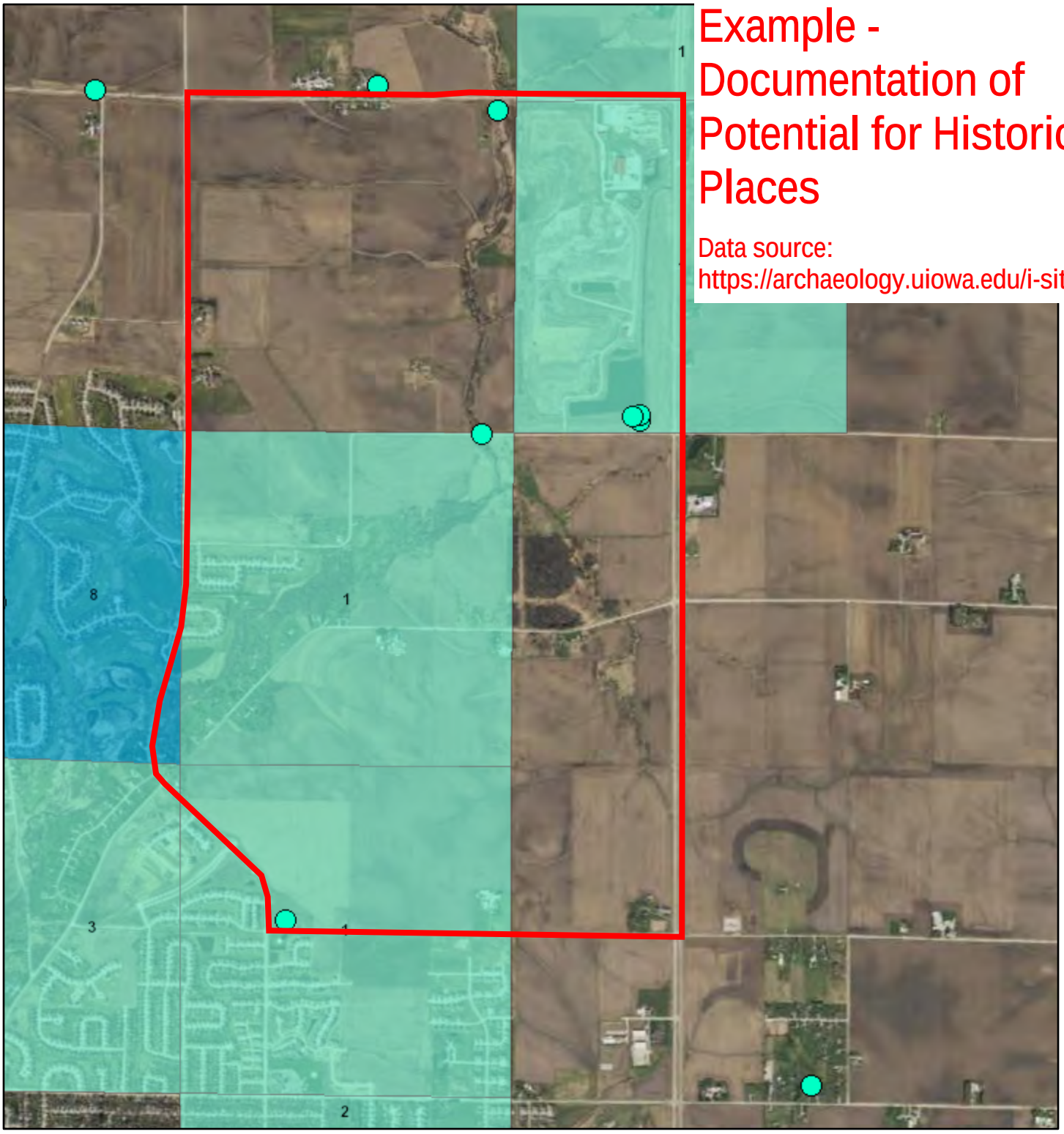
More than 20

1:36,112

0 0.23 0.45 0.9 mi

0 0.35 0.7 1.4 km

Historic Sites Sample Map



Example - Documentation of Potential for Historic Places

Data source: https://archaeology.uiowa.edu/i-sites

February 23, 2021

1:36,112

0 0.23 0.45 0.9 mi

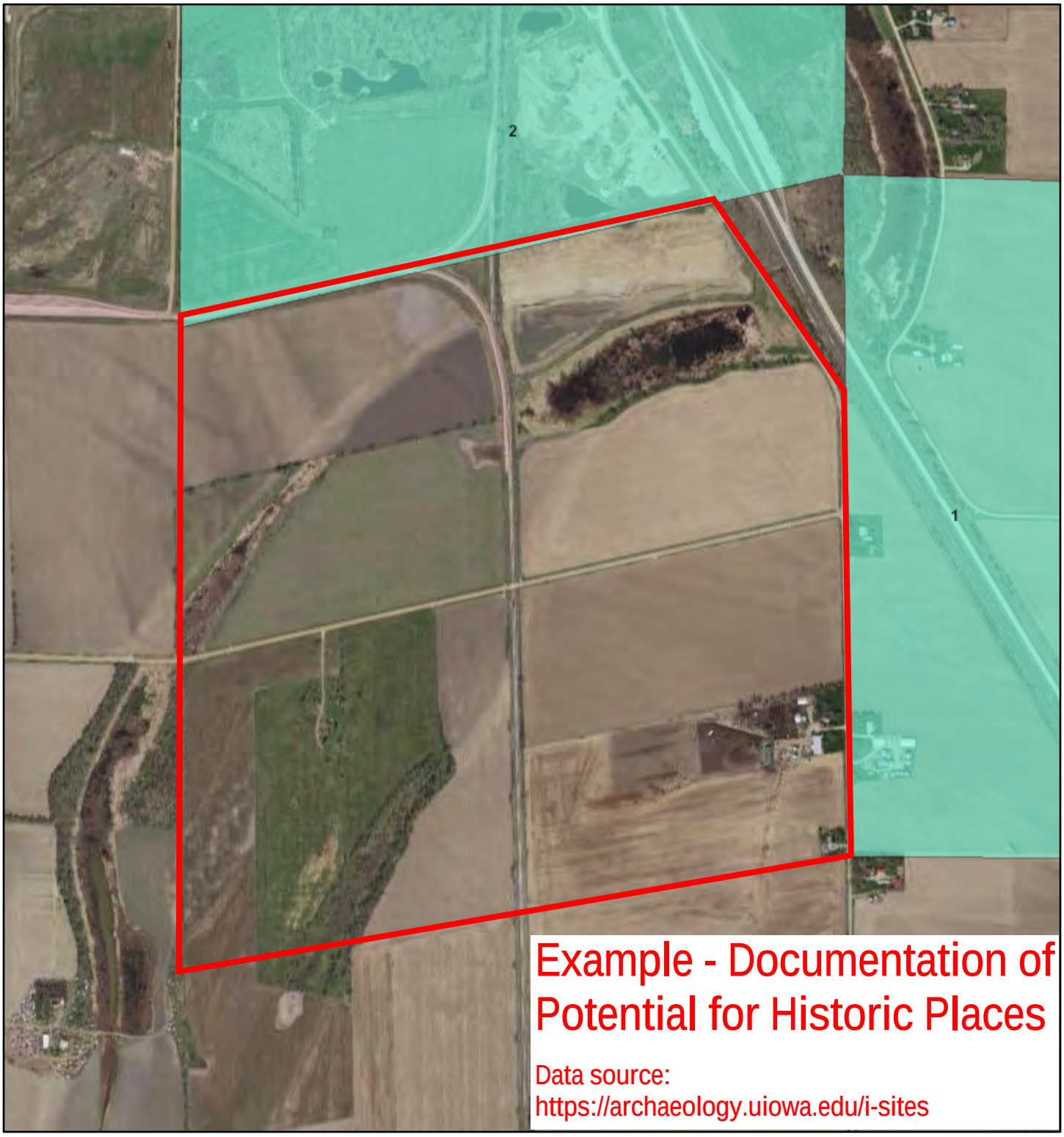
0 0.35 0.7 1.4 km

- Historic Structures Large Scale
- National Register Historic
- Cemeteries

Archeological Sites

- Fewer than 4
- 4 - 20
- More than 20

Sample Site



February 23, 2021

1:18,056

0 0.1 0.2 0.4 mi

0 0.17 0.35 0.7 km

Historic Structures Large Scale

National Register Historic

Cemeteries

Archeological Sites

Fewer than 4

4 - 20

More than 20

Examples

Potential for Natural Vegetation Maps

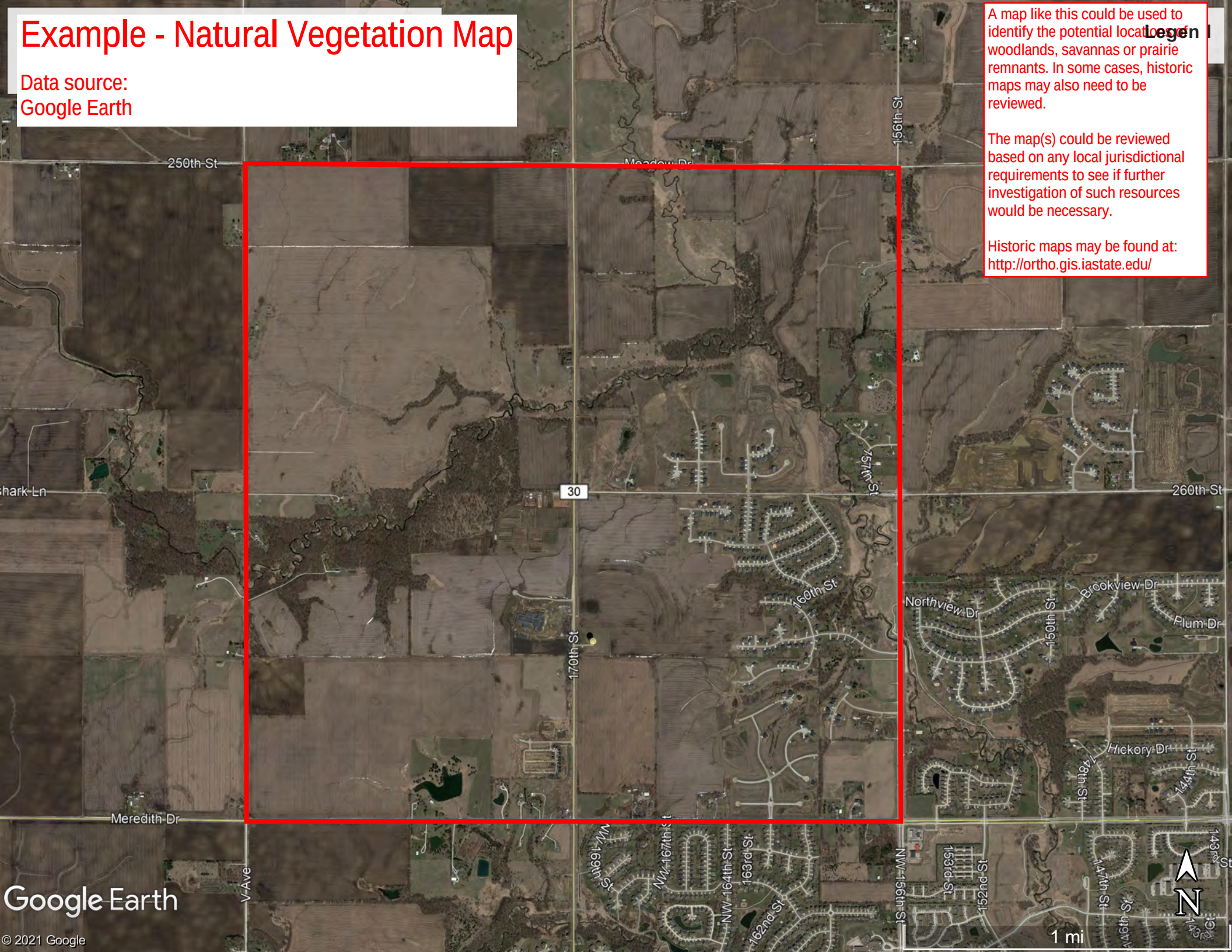
Example - Natural Vegetation Map

Data source:
Google Earth

A map like this could be used to identify the potential location of woodlands, savannas or prairie remnants. In some cases, historic maps may also need to be reviewed.

The map(s) could be reviewed based on any local jurisdictional requirements to see if further investigation of such resources would be necessary.

Historic maps may be found at:
http://ortho.gis.iastate.edu/



Example - Natural Vegetation Map

Data source:
Google Earth

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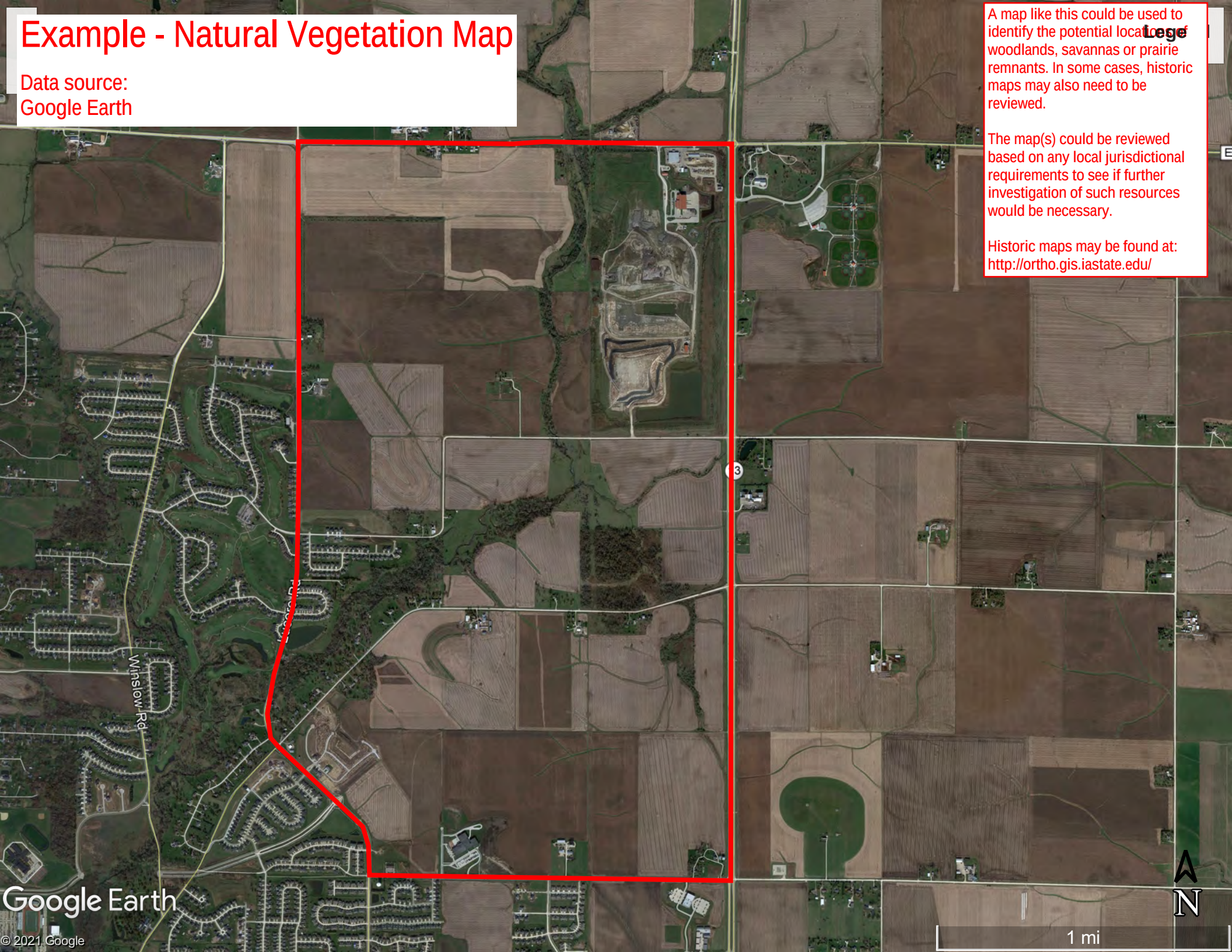

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Google Earth

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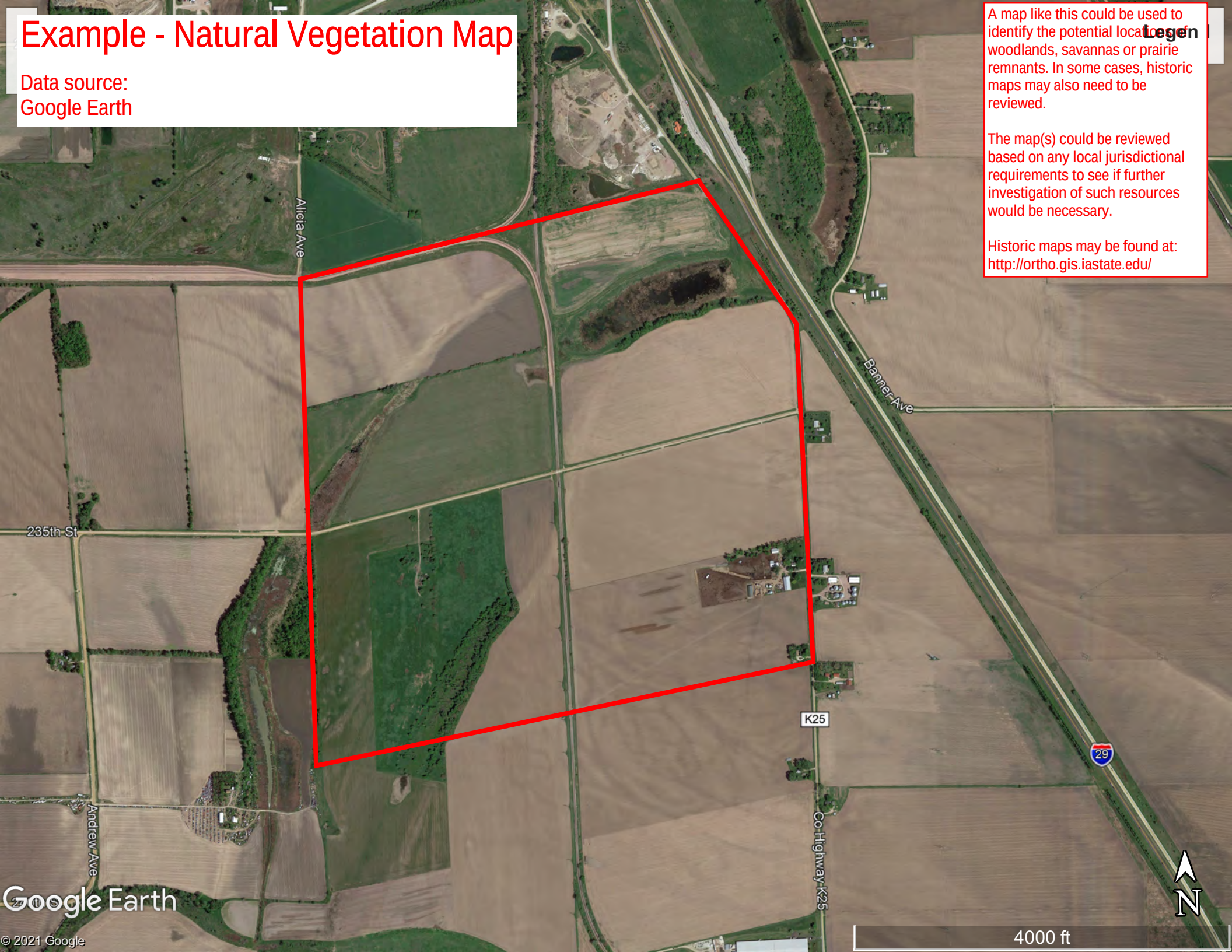


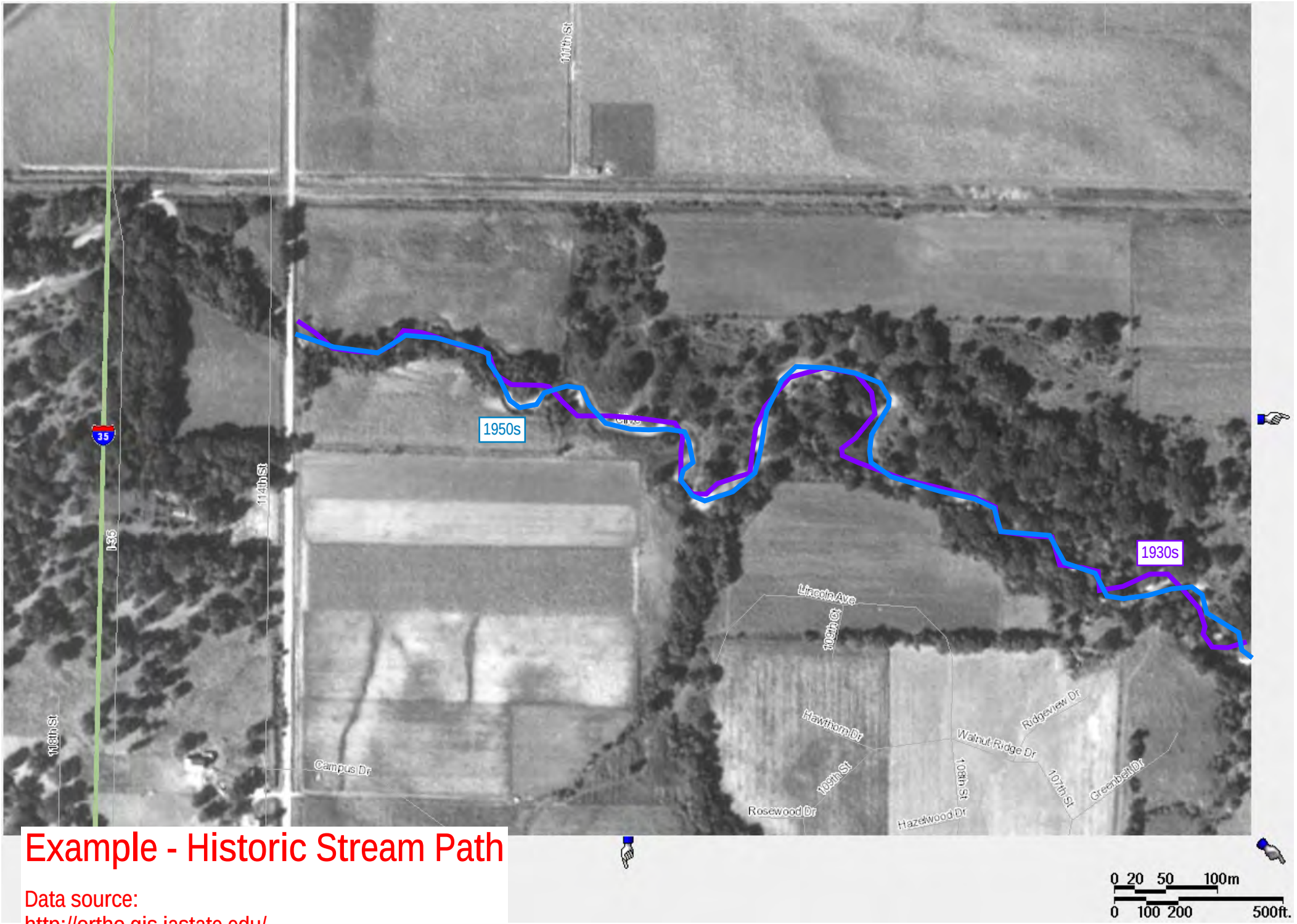
Examples

Historic Stream Path Analysis Maps

Example - Historic Stream Path

Data source:
http://ortho.gis.iastate.edu/

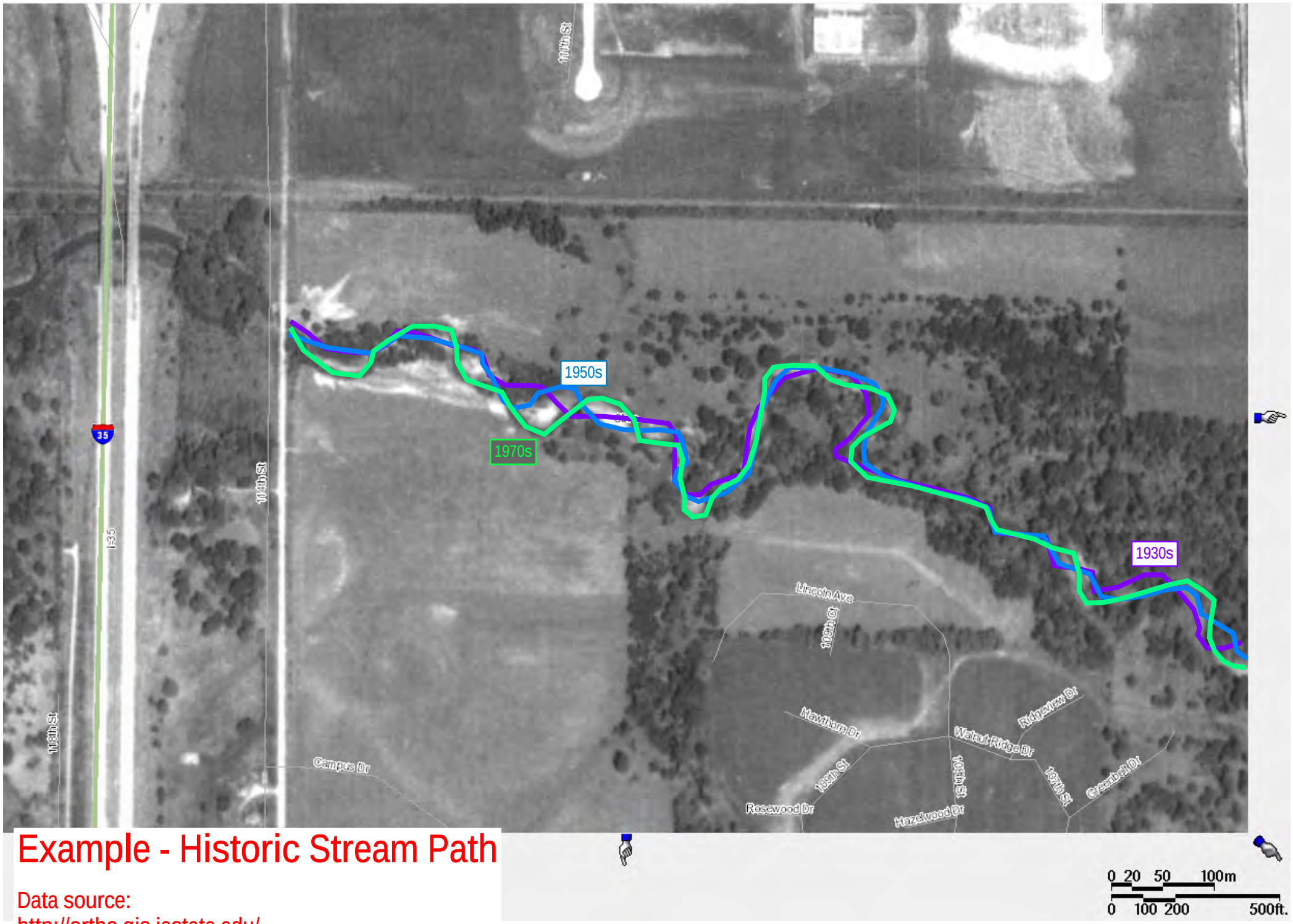
1930s Black & White Aerial



Example - Historic Stream Path

Data source:
http://ortho.gis.iastate.edu/

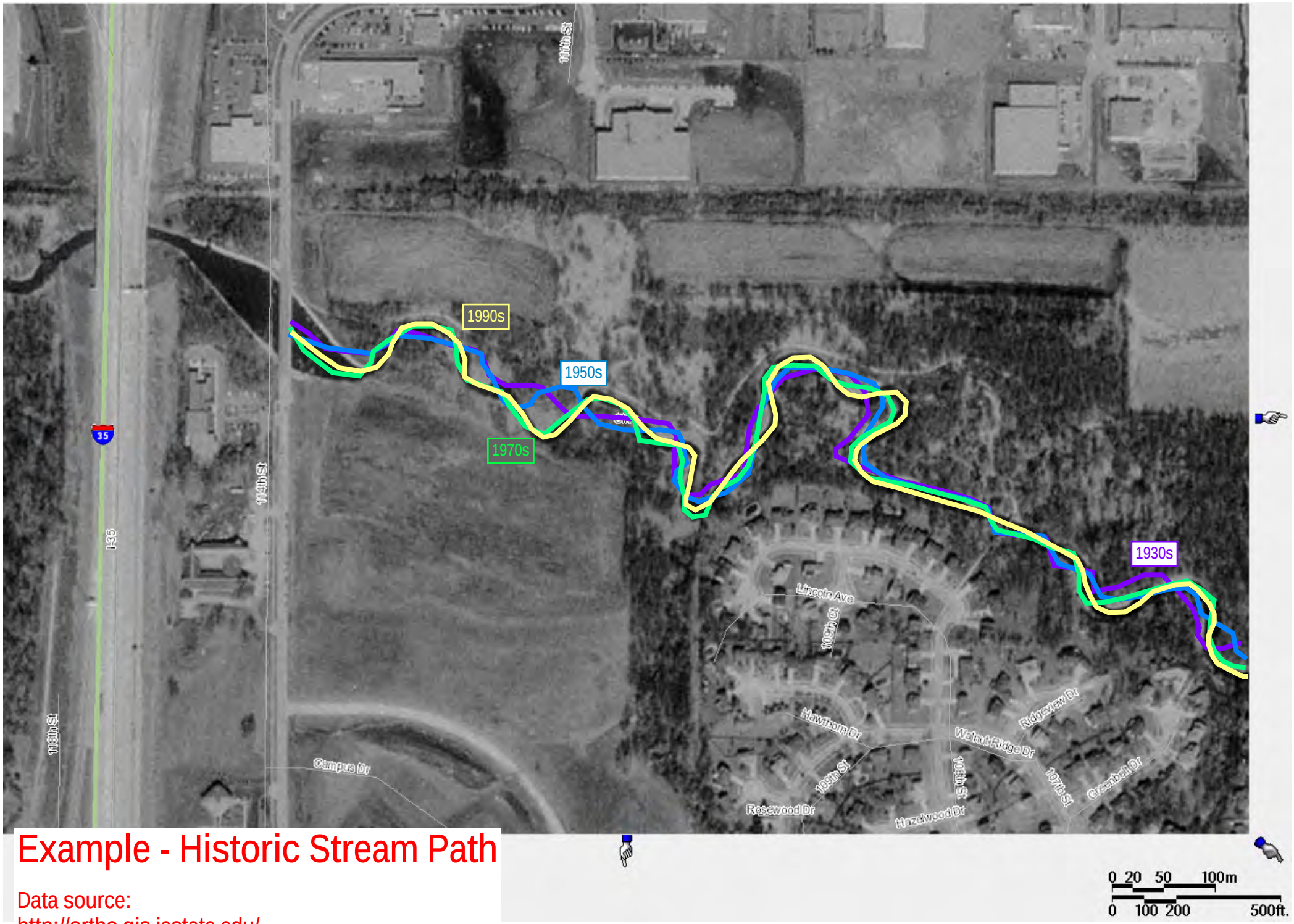
1950s Black & White Aerial



Example - Historic Stream Path

Data source:
http://ortho.gis.iastate.edu/

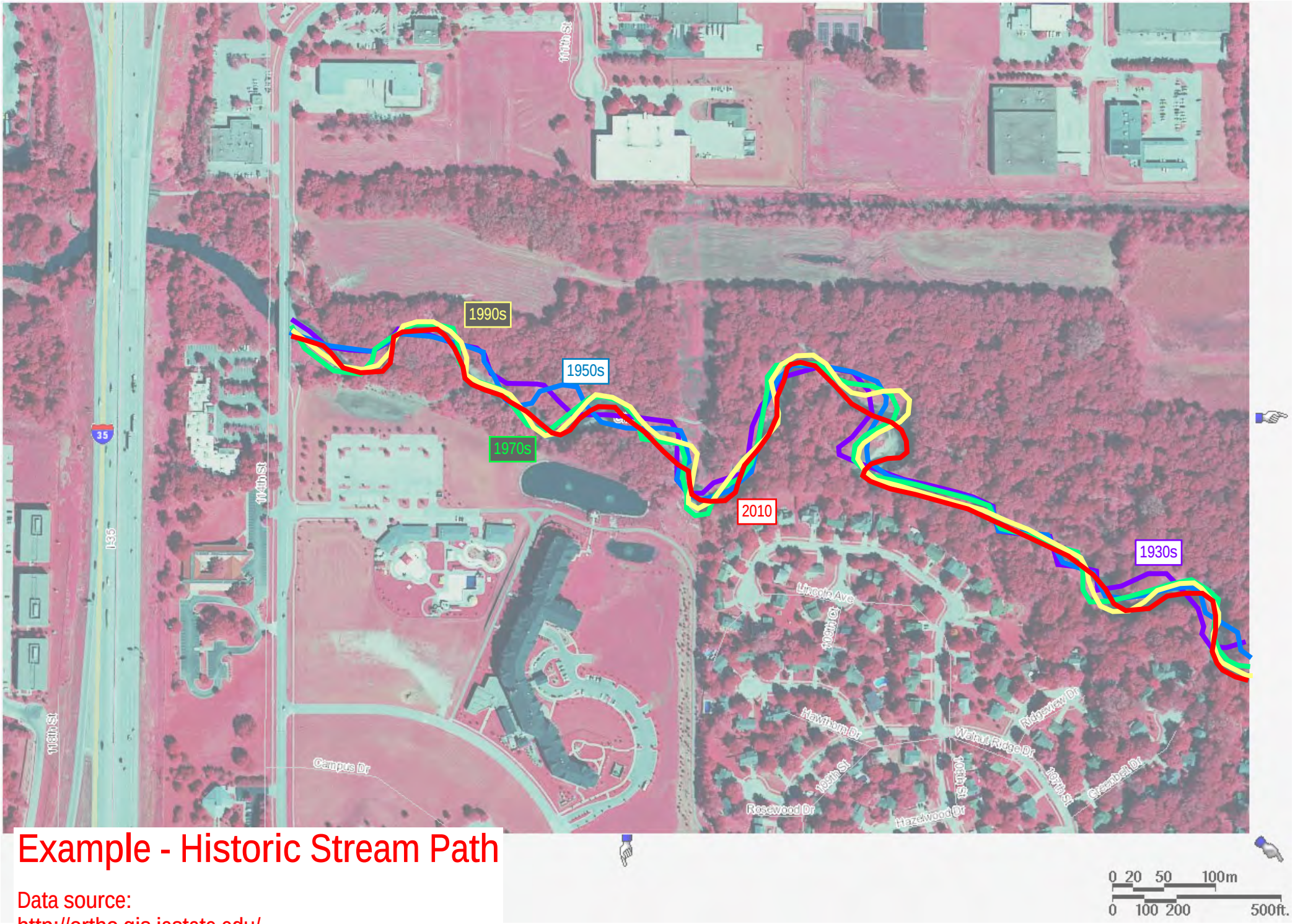
1970s Black & White Aerial



Example - Historic Stream Path

Data source:
http://ortho.gis.iastate.edu/

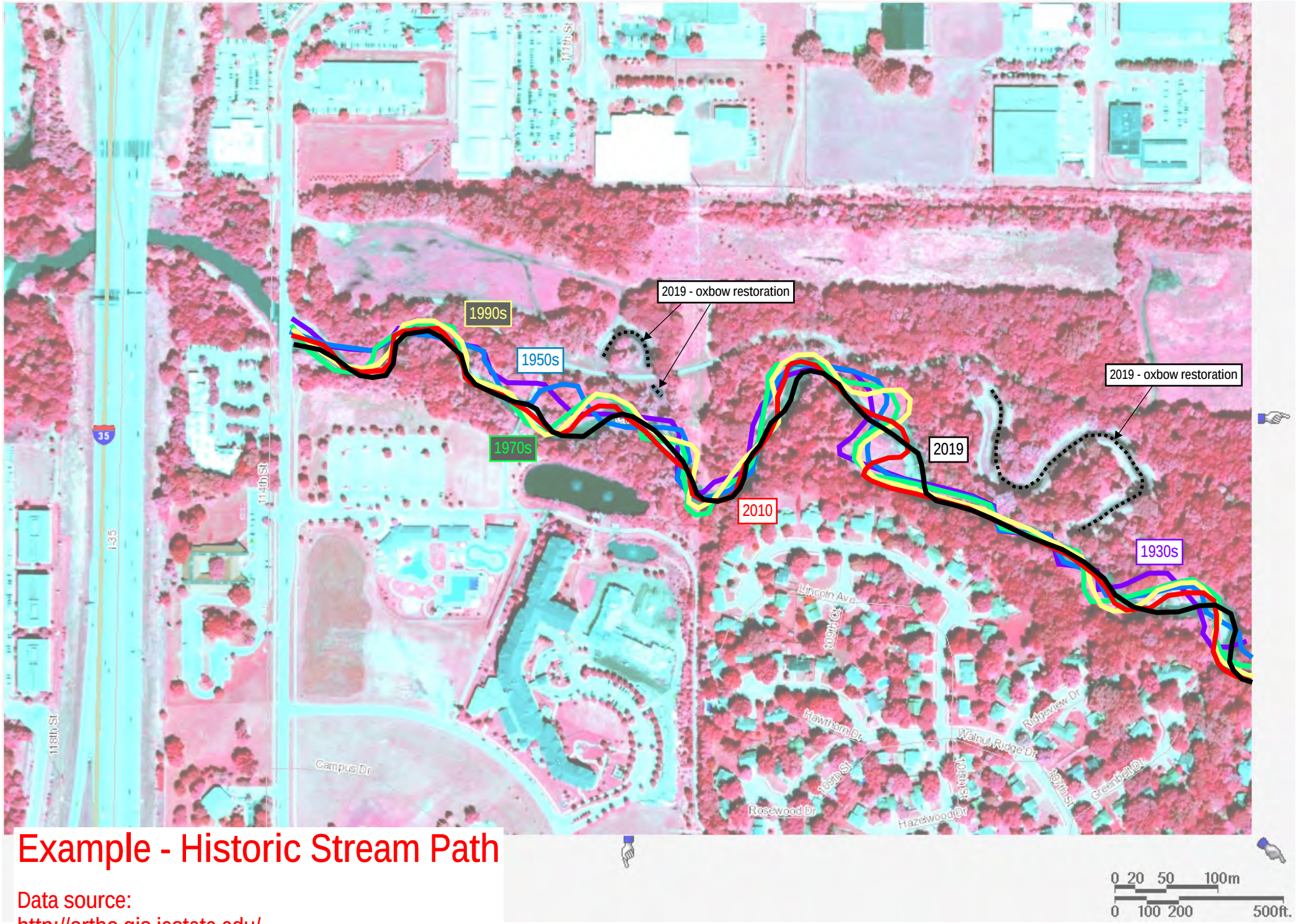
1990s Black & White Aerial



Example - Historic Stream Path

Data source:
http://ortho.gis.iastate.edu/

2010 Infrared Color Aerial



Example - Historic Stream Path

Data source:
http://ortho.gis.iastate.edu/

2019 Infrared Color Aerial