40°27'31.24"N

109°34'13.31"W

109°32'19.83"W

40°25'25.42"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 — Cross Sections with 1% Annual Chance
- 17.5 — Water Surface Elevation
- 8 — Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 — Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can beordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by USDA, Farm Service Agency (FSA). This information was derived from NAIP, dated April 11, 2018.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **12/9/2019 4:33:26 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

SCALE

N

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: No elevation features on this FIRM
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map please see the Flood Insurance Study(FIS) Report for your community at https://msc.fema.gov

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

UINTAH COUNTY, UTAH AND INCORPORATED AREAS

PANEL 660 OF 2450

Panel Contains:

COMMUNITY	NUMBER	PANEL
VERNAL, CITY OF UTAH	490149	0660
UINTAH COUNTY UTAH	490147	0660

MAP NUMBER
49047C0660D
EFFECTIVE DATE
10/06/2010

40°26'28.35"N

109°33'46.00"W

VERNAL, CITY OF
490149

Zone A

T04S R21E S28 | T04S R21E S27 | T04S R21E S26 | T04S R21E S25

T04S R21E S33 | T04S R21E S34 | T04S R21E S35 | T04S R21E S36

NAPLES, CITY OF
490158

T05S R21E S4 | T05S R21E S3 | T05S R21E S2 | T05S R21E S1

UINTAH COUNTY
490147

AREA OF MINIMAL FLOOD HAZARD
Zone X

T05S R21E S9 | T05S R21E S10 | T05S R21E S11 | T05S R21E S12

T05S R21E S16 | T05S R21E S15 | T05S R21E S14 | T05S R21E S13

T05S R21E S21 | T05S R21E S22 | T05S R21E S23 | T05S R21E S24

USGS The National Map: Orthoimagery. Data refreshed April, 2019.

40°22'16.71"N

109°29'59.04"W

FLOOD HAZARD INFORMATION

EE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- 20.2 (B) — Cross Sections with 1% Annual Chance
- 17.5 — Water Surface Elevation
- 8 — Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 — Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can beordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by USDA, Farm Service Agency (FSA). This information was derived from NAIP, dated April 11, 2018.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **11/7/2019 6:39:09 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

SCALE

N

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map please see the Flood Insurance Study(FIS) Report for your community at https://msc.fema.gov

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

0 500 1,000 2,000 3,000 4,000 Feet

0 105 210 420 630 840 Meters

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

UINTAH COUNTY, UTAH AND INCORPORATED AREAS

PANEL 670 OF 2450

Panel Contains:

COMMUNITY	NUMBER	PANEL
UINTAH COUNTY UTAH	490147	0670
VERNAL, CITY OF UTAH	490149	0670
NAPLES, CITY OF UTAH	490158	0670

MAP NUMBER
49047C0670D
EFFECTIVE DATE
10/06/2010

Appendix C – Photo Inventory

Photo Inventory

The following photos were taken during a rare plant survey conducted in August 2018 for a Bureau of Reclamation project and a site visit conducted on August 27 and 28, 2019.

Photo 1: Ashley Central Canal flows through agricultural, residential and undeveloped properties, as well as along city roads. This photograph was taken in August 2018 as part of a rare plant survey for a separate Reclamation project.

Photo 2: Canal vegetation was dominated by reed canarygrass (*Phalaris arundinacea*), Johnsongrass (*Sorghum halepense*), orchardgrass (*Dactylis glomerata*), Russian olive (*Elaegnus angustifolia*), and boxelder maple (*Acer negundo*). This photograph was taken in August 2018 as part of a rare plant survey for a separate Reclamation project.

Photo 3: All Proposed Project staging areas would be located in an upland position within a disturbed setting. This photo illustrates a typical staging area for the Proposed Project, specifically staging area 15.

Photo 4: This photo illustrates staging area 13. Staging areas were dominated by weedy, upland and agricultural species such as: alfalfa (*Medicago sativa*), *Halogeton glomeratus*, field bindweed (*Convolvulus arvensis*), and ornamental grasses.

Appendix D – Soil Maps

Soil Map—Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties
(Reclamation Piping - Soils Map)

Map Scale: 1:17,500 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 250 500 1000 1500

Feet
0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

USDA **Natural Resources Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

9/11/2019

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
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

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 1:24,000.

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: Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties
Survey Area Data: Version 13, Sep 11, 2018

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

Date(s) aerial images were photographed: Aug 19, 2009—Sep 15, 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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
89	Green River loam, 0 to 2 percent slopes, rarely flooded	25.3	18.2%
93	Greybull loam, 4 to 8 percent slopes	10.0	7.2%
132	Lind loam, 2 to 4 percent slopes	4.5	3.2%
162	Nolava-Nolava, wet complex, 0 to 2 percent slopes	24.5	17.7%
163	Nolava-Nolava, wet complex, 2 to 4 percent slopes	29.0	20.9%
206	Shotnick sandy loam, 2 to 4 percent slopes	14.2	10.2%
209	Shotnick-Walkup complex, 0 to 2 percent slopes	3.4	2.5%
243	Turzo-Umbo complex, 0 to 2 percent slopes	13.0	9.4%
251	Umbo clay loam, 0 to 2 percent slopes	0.6	0.5%
275	Wyasket loam, 0 to 2 percent slopes	0.1	0.1%
276	Wyasket loam, 2 to 4 percent slopes	14.1	10.2%
Totals for Area of Interest		**138.8**	**100.0%**

Farmland Classification—Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties
(Reclamation Piping - Farmlands Map)

Map Scale: 1:17,500 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 250 500 1000 1500

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

9/11/2019

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Points

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties
Survey Area Data: Version 13, Sep 11, 2018

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

Date(s) aerial images were photographed: Aug 19, 2009—Sep 15, 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.

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
89	Green River loam, 0 to 2 percent slopes, rarely flooded	Not prime farmland	25.3	18.2%
93	Greybull loam, 4 to 8 percent slopes	Not prime farmland	10.0	7.2%
132	Lind loam, 2 to 4 percent slopes	Not prime farmland	4.5	3.2%
162	Nolava-Nolava, wet complex, 0 to 2 percent slopes	Prime farmland if irrigated	24.5	17.7%
163	Nolava-Nolava, wet complex, 2 to 4 percent slopes	Prime farmland if irrigated	29.0	20.9%
206	Shotnick sandy loam, 2 to 4 percent slopes	Prime farmland if irrigated	14.2	10.2%
209	Shotnick-Walkup complex, 0 to 2 percent slopes	Prime farmland if irrigated	3.4	2.5%
243	Turzo-Umbo complex, 0 to 2 percent slopes	Prime farmland if irrigated	13.0	9.4%
251	Umbo clay loam, 0 to 2 percent slopes	Not prime farmland	0.6	0.5%
275	Wyasket loam, 0 to 2 percent slopes	Not prime farmland	0.1	0.1%
276	Wyasket loam, 2 to 4 percent slopes	Not prime farmland	14.1	10.2%
Totals for Area of Interest			**138.8**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

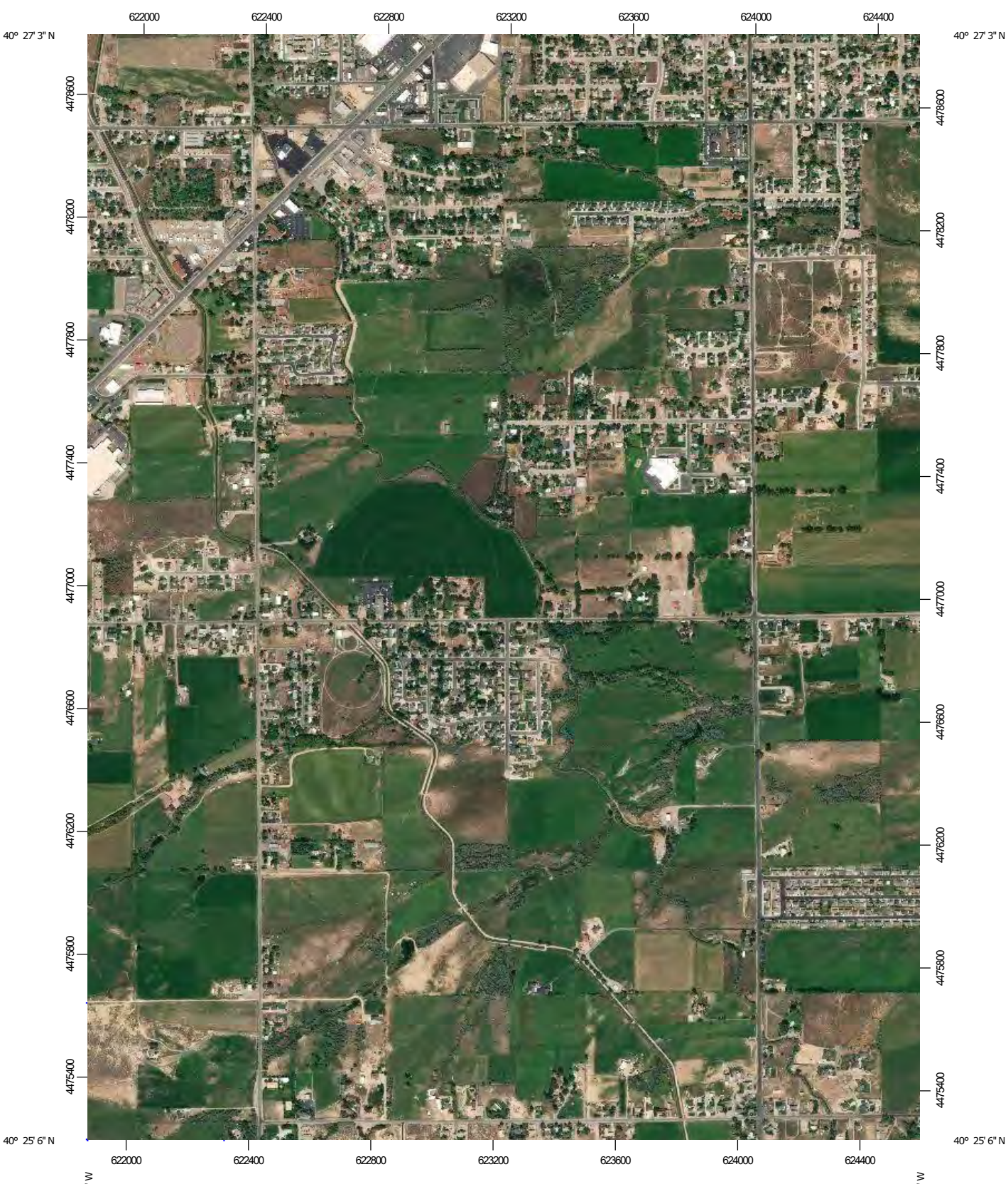
A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The majority of soil attributes are associated with a component of a map unit, and such an attribute has to be aggregated to the map unit level before a thematic map can be rendered. Map units, however, also have their own attributes. An attribute of a map unit does not have to be aggregated in order to render a corresponding thematic map. Therefore, the "aggregation method" for any attribute of a map unit is referred to as "No Aggregation Necessary".

Tie-break Rule: Lower

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.



Map Scale: 1:17,500 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 250 500 1000 1500

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N 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 1:24,000.

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: Uintah Area, Utah - Parts of Daggett, Grand and Uintah Counties
Survey Area Data: Version 13, Sep 11, 2018

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

Date(s) aerial images were photographed: Aug 19, 2009—Sep 15, 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
89	Green River loam, 0 to 2 percent slopes, rarely flooded	5	25.3	18.2%
93	Greybull loam, 4 to 8 percent slopes	0	10.0	7.2%
132	Lind loam, 2 to 4 percent slopes	0	4.5	3.2%
162	Nolava-Nolava, wet complex, 0 to 2 percent slopes	0	24.5	17.7%
163	Nolava-Nolava, wet complex, 2 to 4 percent slopes	0	29.0	20.9%
206	Shotnick sandy loam, 2 to 4 percent slopes	0	14.2	10.2%
209	Shotnick-Walkup complex, 0 to 2 percent slopes	0	3.4	2.5%
243	Turzo-Umbo complex, 0 to 2 percent slopes	4	13.0	9.4%
251	Umbo clay loam, 0 to 2 percent slopes	8	0.6	0.5%
275	Wyasket loam, 0 to 2 percent slopes	85	0.1	0.1%
276	Wyasket loam, 2 to 4 percent slopes	85	14.1	10.2%
Totals for Area of Interest			**138.8**	**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

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Percent Present" returns the cumulative percent composition of all components of a map unit for which a certain condition is true. For example, attribute "Hydric Rating by Map Unit" returns the cumulative percent composition of all components of a map unit where the corresponding hydric rating is "Yes". Conditions may be simple or complex. At runtime, the user may be able to specify all, some or none of the conditions in question.

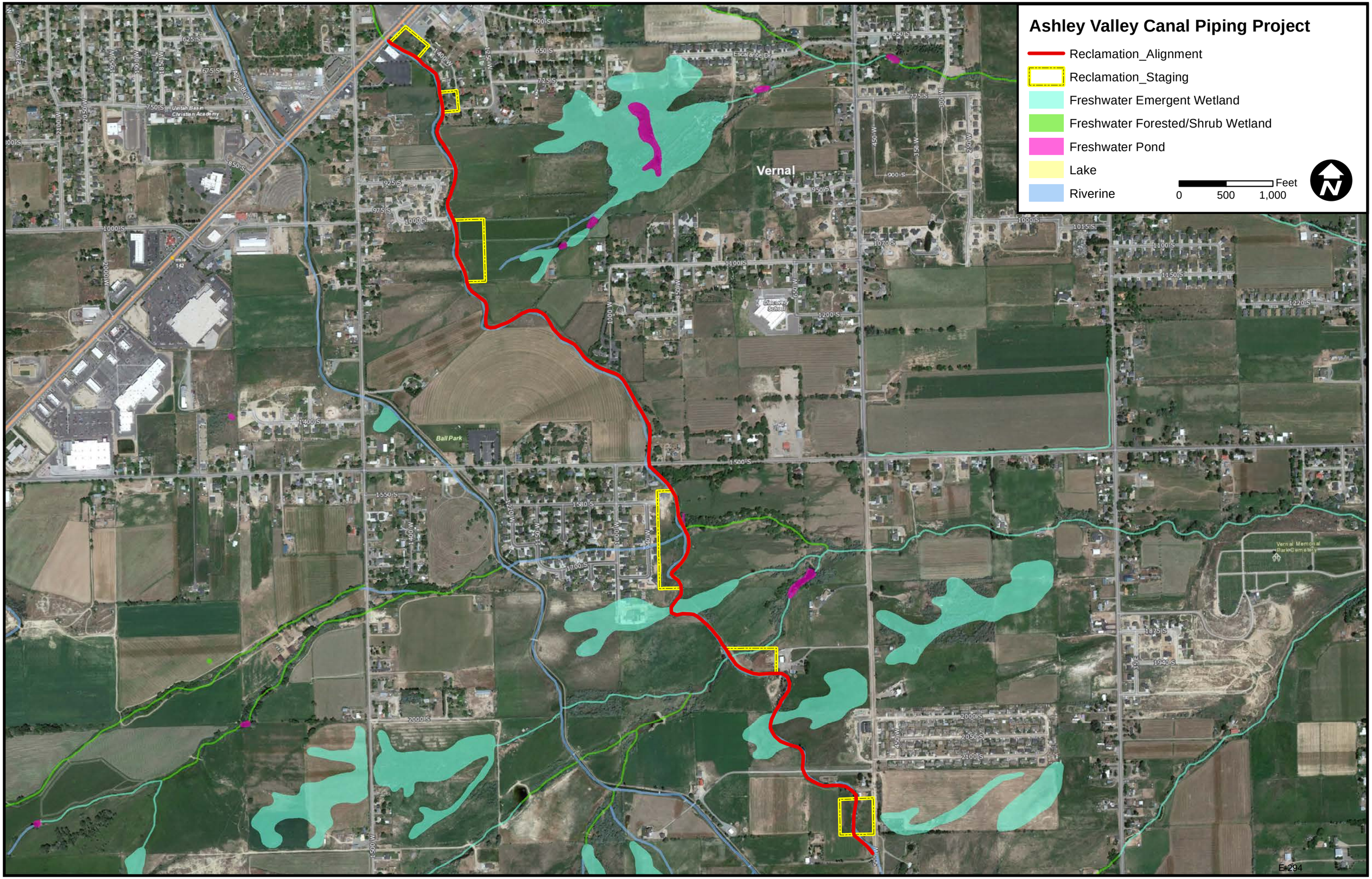
Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Lower

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Appendix E – NWI Map


Ashley Valley Canal Piping Project
Reclamation_Alignment
Reclamation_Staging
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Lake
Riverine
0
500
1,000
Feet
N
Vernal
Uintah Basin Christian Academy
Apple Blvd
Discovery School
Ball Park
Vernal Memorial Park/Cemetery
Escalante Dr
600 S
625 S
650 S
675 S
725 S
750 S
775 S
850 S
900 S
925 S
950 S
975 S
1000 S
1015 S
1070 S
1100 S
1150 S
1200 S
1220 S
1400 S
1500 S
1550 S
1580 S
1700 S
1875 S
1940 S
2000 S
2050 S
2100 S
2150 W
2000 W
1950 W
1900 W
1850 W
1800 W
1750 W
1700 W
1650 W
1600 W
1550 W
1500 W
1450 W
1400 W
1350 W
1300 W
1250 W
1200 W
1150 W
1100 W
1050 W
1000 W
950 W
900 W
850 W
800 W
750 W
700 W
650 W
600 W
550 W
500 W
450 W
400 W
350 W
300 W
250 W
200 W
150 W
100 W
50 W
0 E
50 E
100 E
150 E
200 E
250 E
300 E
350 E
400 E
450 E
500 E
550 E
600 E
650 E
700 E
750 E
800 E
850 E
900 E
950 E
1000 E
1050 E
1100 E
1150 E
1200 E
1250 E
1300 E
1350 E
1400 E
1450 E
1500 E
1550 E
1600 E
1650 E
1700 E
1750 E
1800 E
1850 E
1900 E
1950 E
2000 E
2050 E
2100 E
2150 E

Appendix C – Photo Inventory

01 – Site Conditions | South

01b – Site Conditions | East

01b – Site Conditions | North

01b – Site Conditions | West

01c – Site Conditions | South

02 – Site Conditions | Southeast

03 – Site Conditions | Southeast

03 – Site Conditions | East

03 – Site Conditions | Northwest

03b – Site Conditions | West

03b – Site Conditions | East

03b – Site Conditions | South

03c – Site Conditions | North

03c – Site Conditions | South

04 – Site Conditions | Northeast

05 – Site Conditions | Southeast

06 – Site Conditions | Northwest

07 – Site Conditions | Southeast

08 – Site Conditions | East

09 – Site Conditions | North

10 – Site Conditions | North

11 – Site Conditions | North

12 – Site Conditions | North

13 – Site Conditions | South

14 – Site Conditions | North

15 – Site Conditions | East

16 – Site Conditions | North

17 – Site Conditions | West

18 – Site Conditions | South

19 – Site Conditions | South

20 – Site Conditions | West

21 – Site Conditions | East

22 – Site Conditions | South

23 – Site Conditions | South

24 – Site Conditions | West

25 – Site Conditions | East

26 – Site Conditions | East

27 – Site Conditions | East

28 – Site Conditions | West

29 – Site Conditions | South

30 – Site Conditions | North

31 – Site Conditions | West

32 – Site Conditions | South

33 – Site Conditions | South

SC1 – Site Conditions | East

SC1 – Site Conditions | West

SC2 – Site Conditions | East

SC2 – Site Conditions | West

SC3 – Site Conditions | East

SC3 – Site Conditions | West

SC4 – Site Conditions | East

SC4 – Site Conditions | West

SC5 – Site Conditions | East

SC5 – Site Conditions | West

P1 – Site Conditions | East

P1 – Site Conditions | North

Appendix D – FEMA FIRMs