

Appendix B

Environmental Background Information





USFWS NWI MAPPING



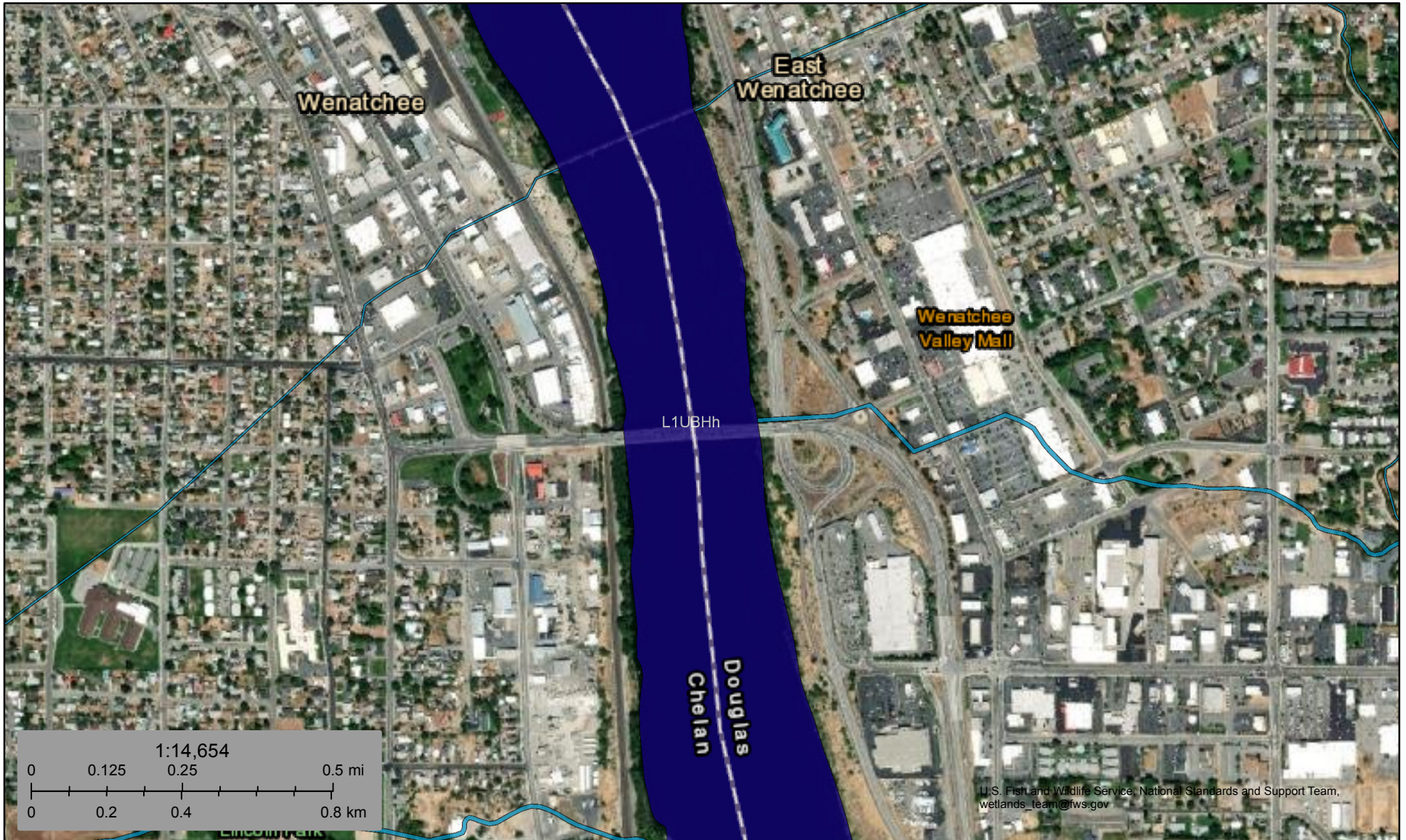


May 31, 2023

Wetlands

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



May 31, 2023

Wetlands

- | | | | | | |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland |  | Lake |
|  | Estuarine and Marine Wetland |  | Freshwater Forested/Shrub Wetland |  | Other |
| | |  | Freshwater Pond |  | 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 Standards and Support Team,
wetlands_team@fws.gov

October 3, 2023

Wetlands

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

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U.S. Fish and Wildlife Service, National Standards and Support Team
wetlands_team@fws.gov

October 9, 2023

Wetlands

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

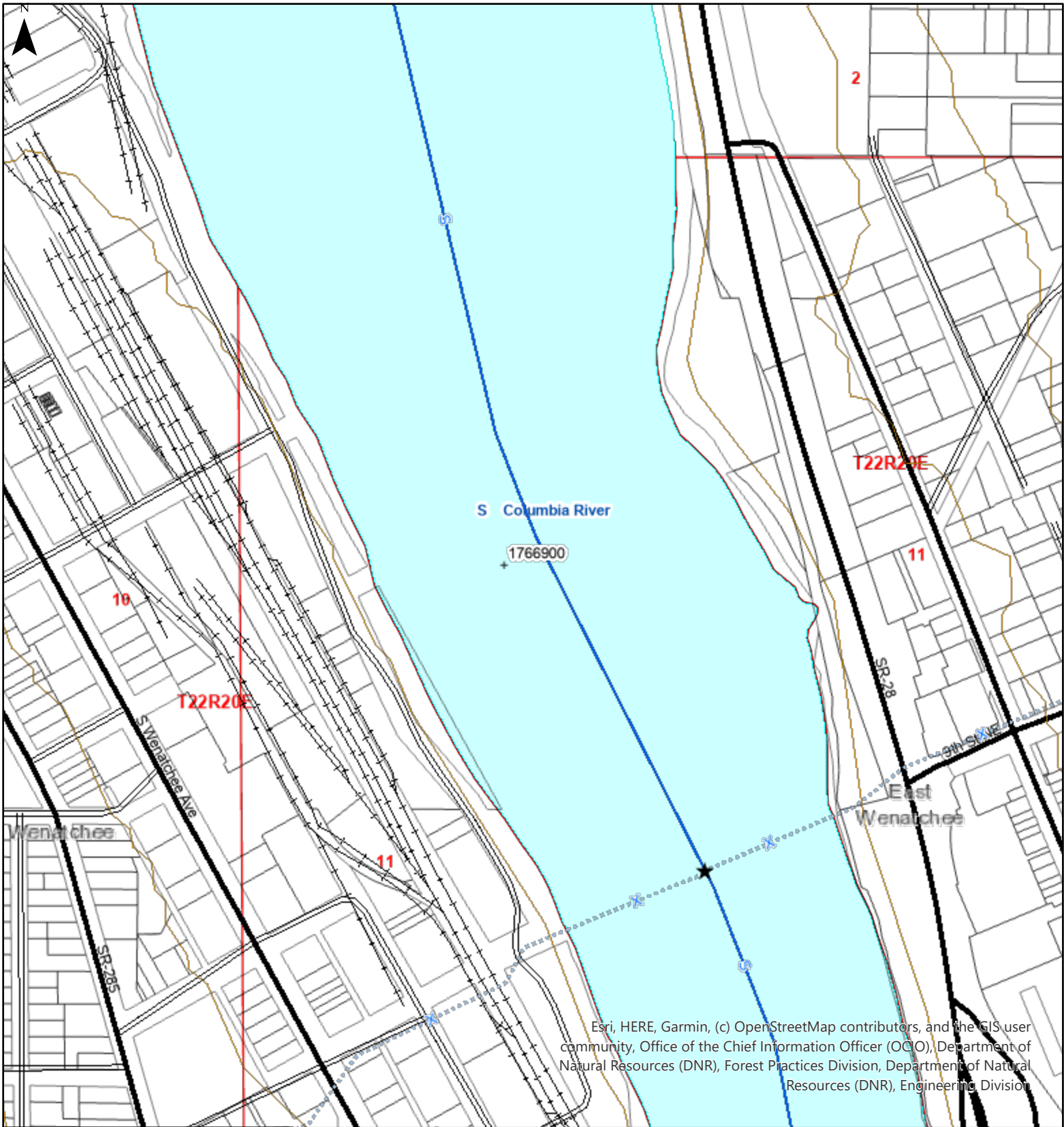
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.




WA DNR MAPPING

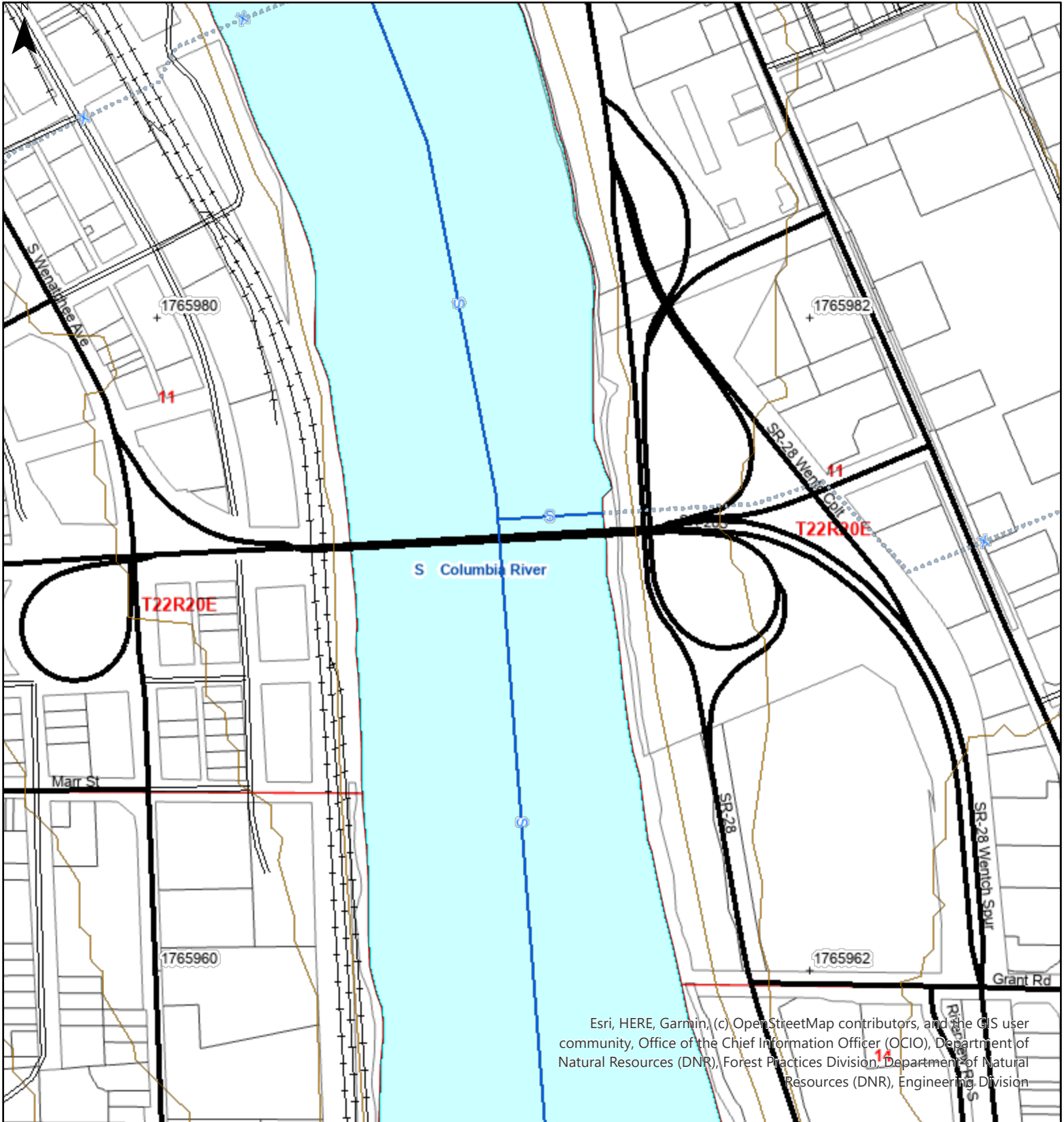


Forest Practices Activity Map - Application


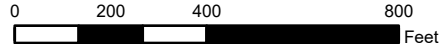


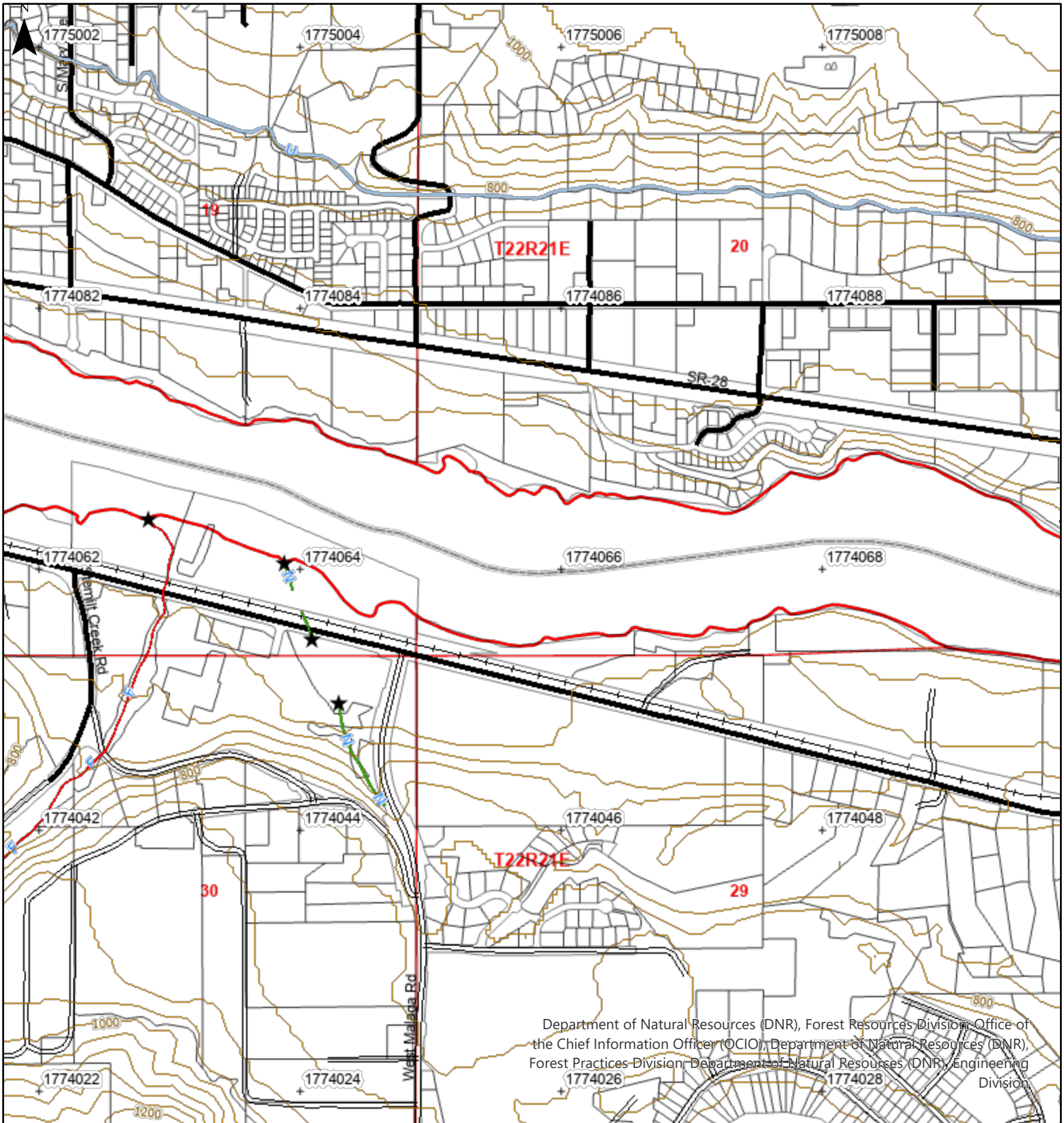
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Office of the Chief Information Officer (OCIO), Department of Natural Resources (DNR), Forest Practices Division, Department of Natural Resources (DNR), Engineering Division

Map Symbols	Additional Information	Legal Description
<ul style="list-style-type: none"> ~ ~ ~ Harvest Boundary - - - Road Construction ~ ~ ~ Stream [Cross-hatched] RMZ / WMZ Buffers X Rock Pit ⊙ Landing ▽ Waste Area 🌲 Clumped WRTS/GRTS 🏠 Existing Structure 	<p>Extreme care was used during the compilation of this map to ensure its accuracy. However, due to changes in data and the need to rely on outside information, the Department of Natural Resources cannot accept responsibility for errors or omissions, and therefore, there are no warranties that accompany this material.</p>	<p>S02 T22.0N R20.0E, S10 T22.0N R20.0E, S11 T22.0N R20.0E, S11 T22.0N R20.0E</p>
 <p>WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES</p>		<p>Approximate Scale : 1:4,800</p> <p>0 200 400 800 Feet</p> <p>Date: 6/22/2023 Time: 3:59 PM</p>



Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Office of the Chief Information Officer (OCIO), Department of Natural Resources (DNR), Forest Practices Division, Department of Natural Resources (DNR), Engineering Division

Map Symbols	Additional Information	Legal Description
<ul style="list-style-type: none"> --- Harvest Boundary - - - Road Construction ~ ~ ~ Stream ▨ RMZ / WMZ Buffers ⊗ Rock Pit ⊙ Landing ▽ Waste Area 🌲 Clumped WRTS/GRTS 🏠 Existing Structure 		<p>S14 T22.0N R20.0E, S14 T22.0N R20.0E, S11 T22.0N R20.0E, S11 T22.0N R20.0E</p>
 <p>WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES</p>	<p>Extreme care was used during the compilation of this map to ensure its accuracy. However, due to changes in data and the need to rely on outside information, the Department of Natural Resources cannot accept responsibility for errors or omissions, and therefore, there are no warranties that accompany this material.</p>	<p>Approximate Scale : 1:4,800</p>  <p>0 200 400 800 Feet</p> <p>Date: 6/22/2023 Time: 3:53 PM</p>



Department of Natural Resources (DNR), Forest Resources Division, Office of the Chief Information Officer (OCIO), Department of Natural Resources (DNR), Forest Practices Division, Department of Natural Resources (DNR), Engineering Division

Map Symbols

- Harvest Boundary
- - - Road Construction
- ~ Stream
- RMZ / WMZ Buffers
- Rock Pit
- Landing
- Waste Area
- Clumped WRTS/GRTS
- Existing Structure

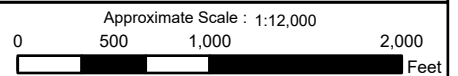
Additional Information

Legal Description

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R21.0E, S20 T22.0N R21.0E, S29 T22.0N
R21.0E



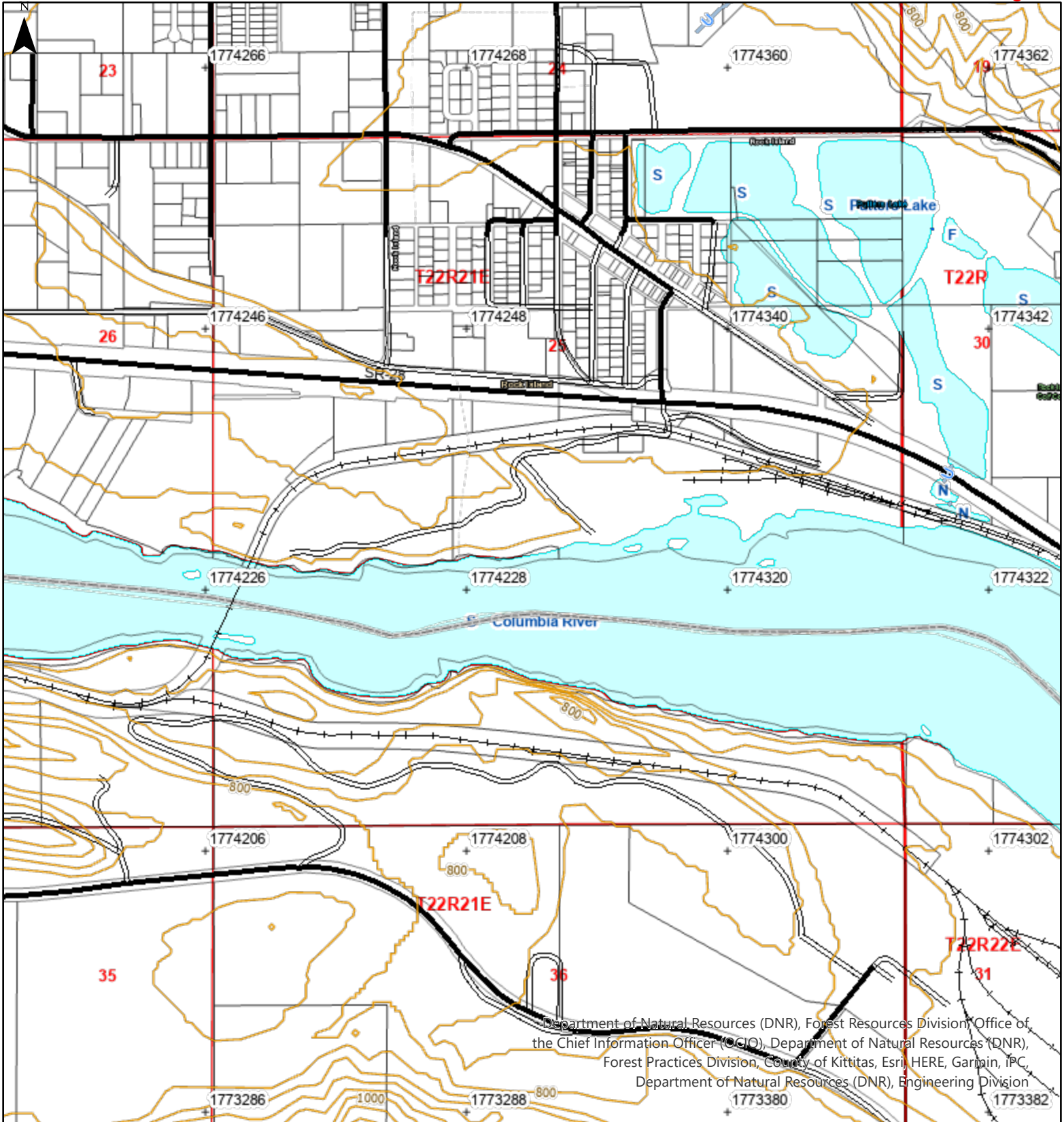
Extreme care was used during the compilation of this map to ensure its accuracy. However, due to changes in data and the need to rely on outside information, the Department of Natural Resources cannot accept responsibility for errors or omissions, and therefore, there are no warranties that accompany this material.



Date: 10/4/2023 Time: 5:04 PM

Forest Practices Activity Map - Application

Malaga/Rock
Island Industrial
Area Crossing Site



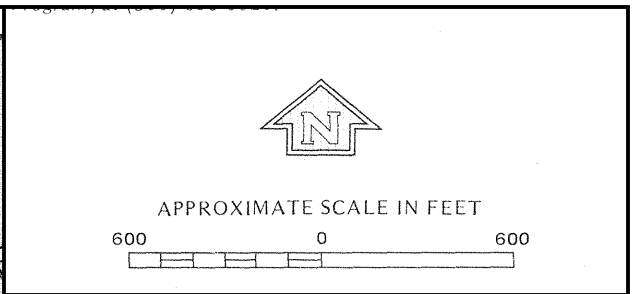
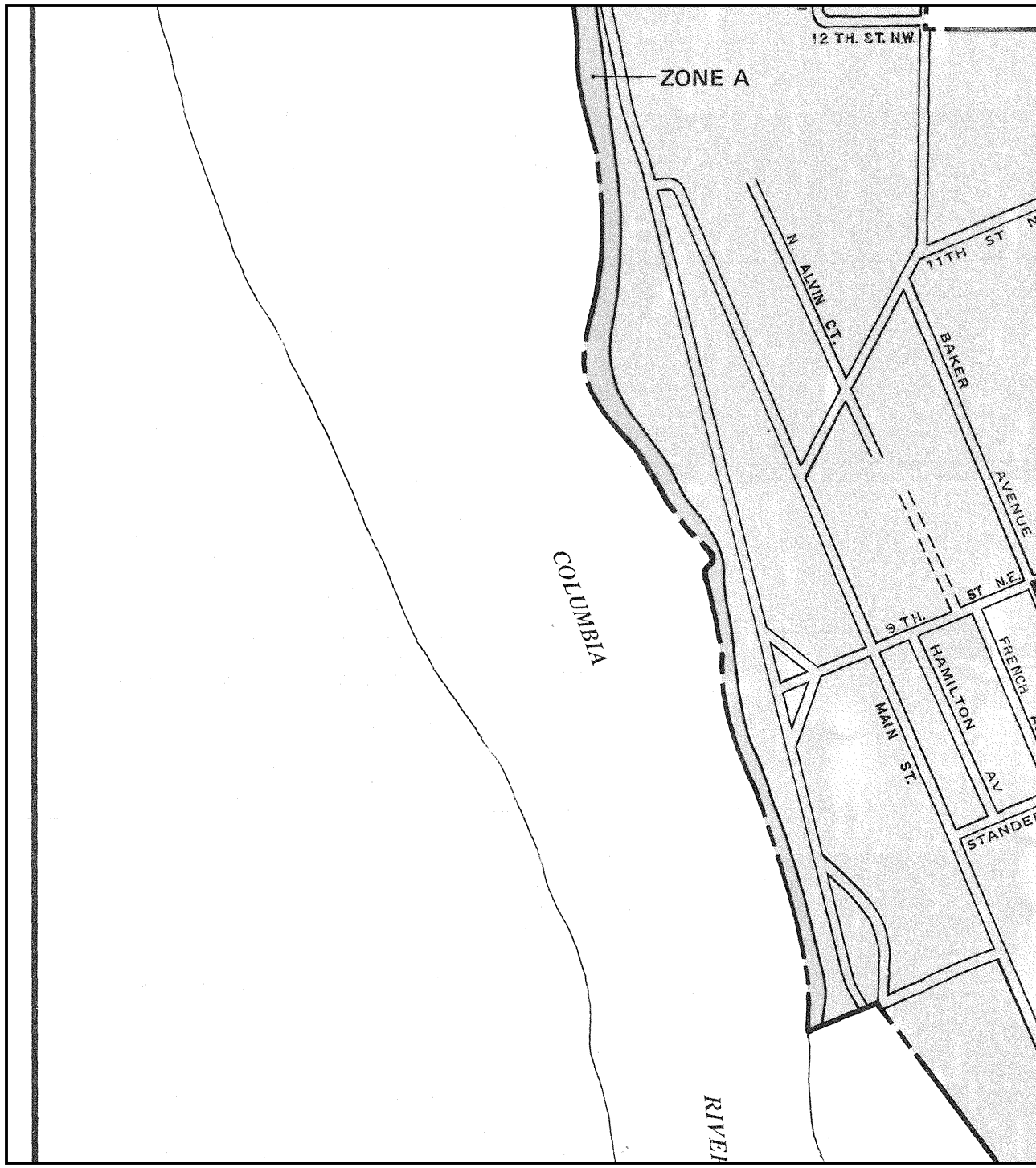
Department of Natural Resources (DNR), Forest Resources Division, Office of the Chief Information Officer (OCIO), Department of Natural Resources (DNR), Forest Practices Division, County of Kittitas, Esri, HERE, Garmin, iPC, Department of Natural Resources (DNR), Engineering Division

Map Symbols	Additional Information	Legal Description
<ul style="list-style-type: none"> --- Harvest Boundary - - - Road Construction ~ Stream RMZ / WMZ Buffers Rock Pit ☉ Landing ▽ Waste Area 🌲 Clumped WRTS/GRTS 🏠 Existing Structure 		<p>S26 T22.0N R21.0E, S23 T22.0N R21.0E, S25 T22.0N R21.0E, S24 T22.0N R21.0E, S19 T22.0N R22.0E, S31 T22.0N R22.0E, S30 T22.0N R22.0E, S35 T22.0N R21.0E, S36 T22.0N R21.0E</p>
<p>WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES</p>	<p>Extreme care was used during the compilation of this map to ensure its accuracy. However, due to changes in data and the need to rely on outside information, the Department of Natural Resources cannot accept responsibility for errors or omissions, and therefore, there are no warranties that accompany this material.</p>	<p>Approximate Scale : 1:12,000</p> <p>Date: 10/9/2023 Time: 2:42 PM</p>



FEMA FIRM MAPPING





NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
EAST WENATCHEE,
WASHINGTON
DOUGLAS COUNTY

ONLY PANEL PRINTED

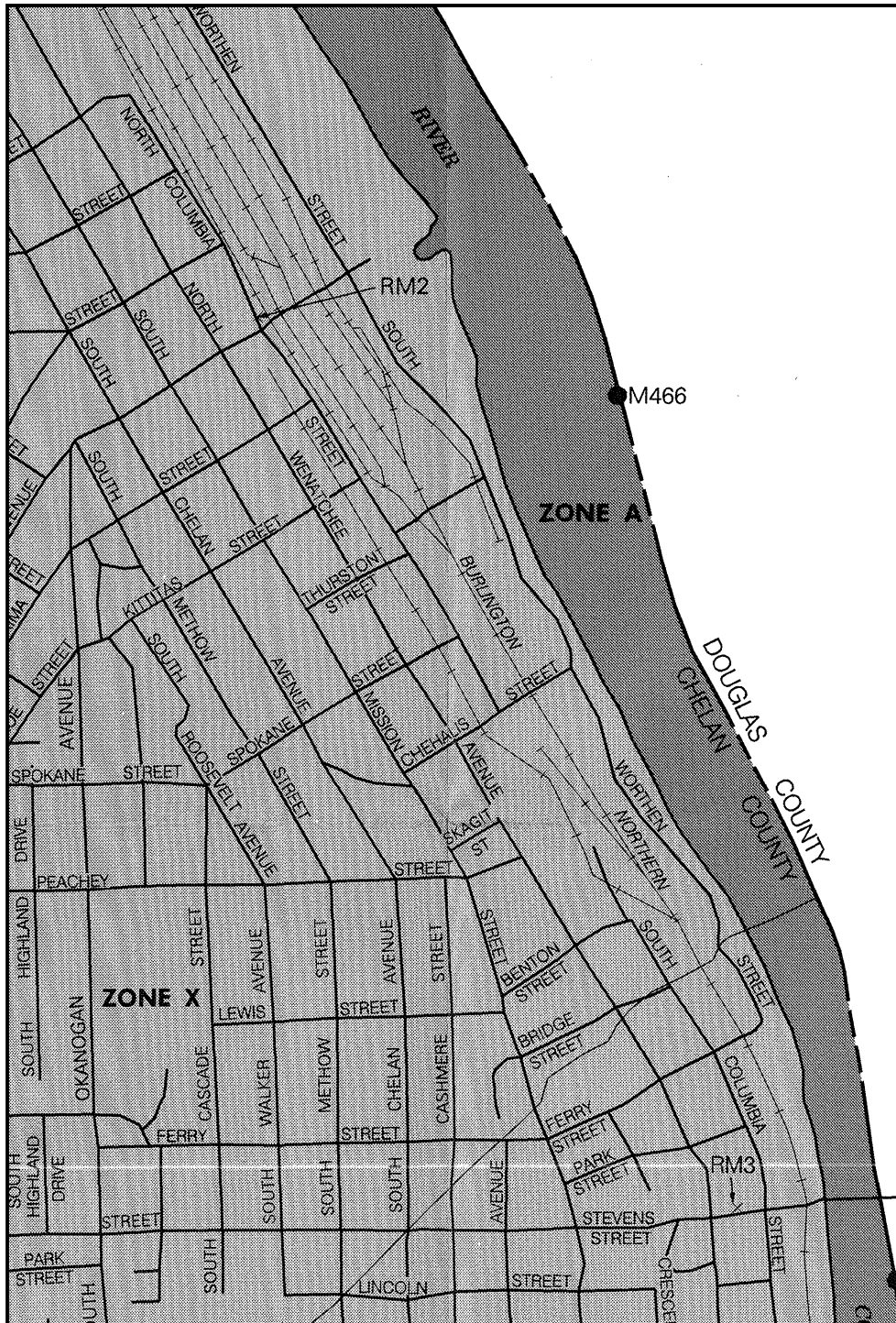
COMMUNITY-PANEL NUMBER
530038 0001 C

EFFECTIVE DATE:
JULY 3, 1985

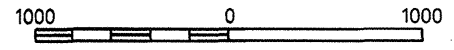


Federal Emergency Management Agency

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.



APPROXIMATE SCALE IN FEET



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
WENATCHEE,
WASHINGTON
CHELAN COUNTY

ONLY PANEL PRINTED

COMMUNITY-PANEL NUMBER
530020 0005 C

MAP REVISED:
JANUARY 6, 1994



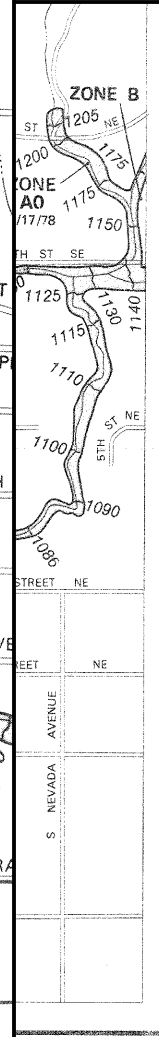
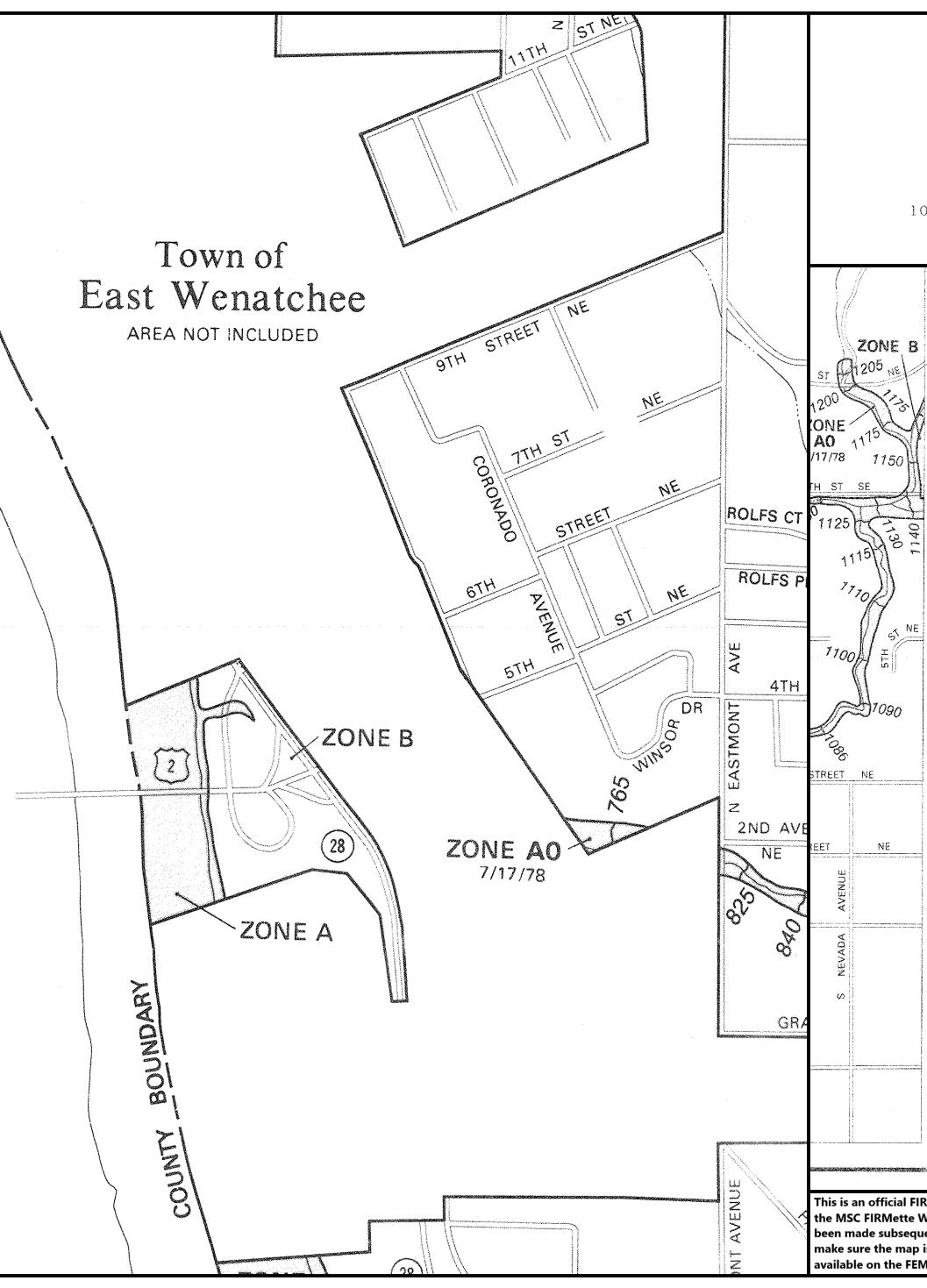
Federal Emergency Management Agency

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.

Town of East Wenatchee
AREA NOT INCLUDED



APPROXIMATE SCALE



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

DOUGLAS COUNTY,
WASHINGTON
(UNINCORPORATED AREAS)

COMMUNITY PANEL NUMBER
530036 0535 A

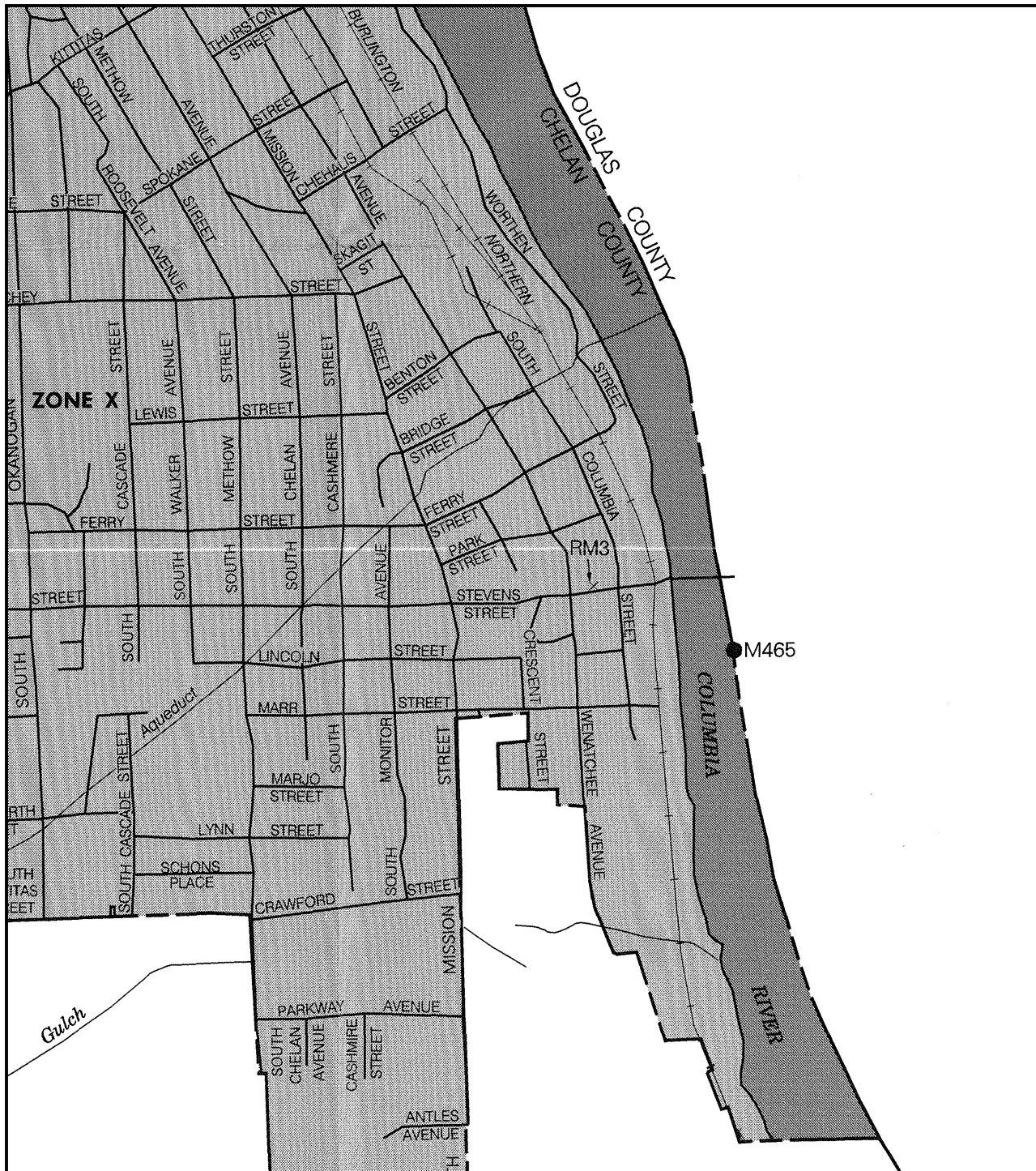
PAGE 535 OF 650
(SEE MAP INDEX FOR PAGES NOT PRINTED)

EFFECTIVE
JULY 17, 1978



U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.



APPROXIMATE SCALE IN FEET
 1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
 WENATCHEE,
 WASHINGTON
 CHELAN COUNTY

ONLY PANEL PRINTED

COMMUNITY-PANEL NUMBER
 530020 0005 C

MAP REVISED:
 JANUARY 6, 1994



Federal Emergency Management Agency

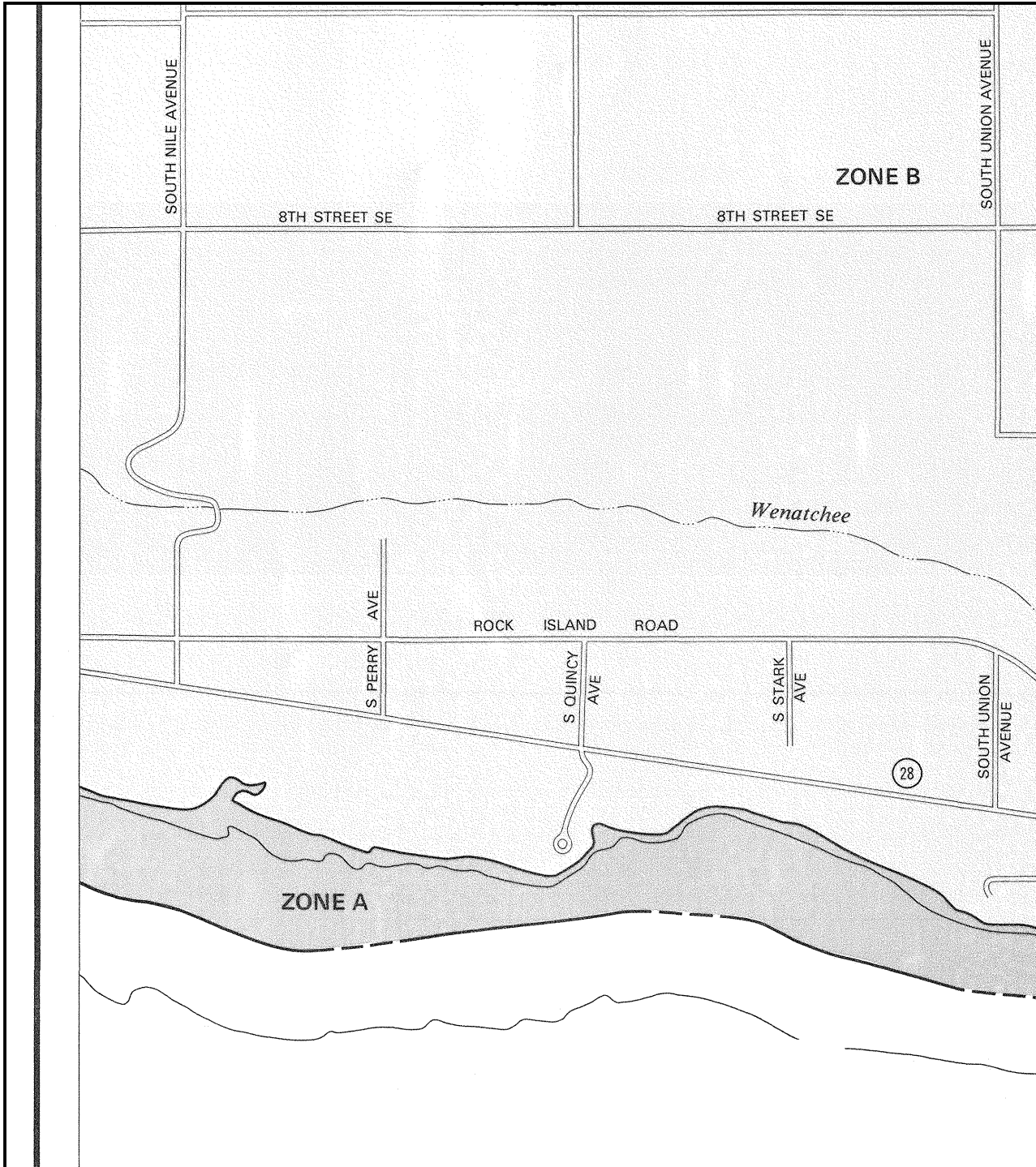
This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.

Contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620, or (800) 424-8872.



APPROXIMATE SCALE

1000 0 1000 FEET



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

DOUGLAS COUNTY,
WASHINGTON
(UNINCORPORATED AREAS)

COMMUNITY-PANEL NUMBER
530036 0565 A

PAGE 565 OF 650

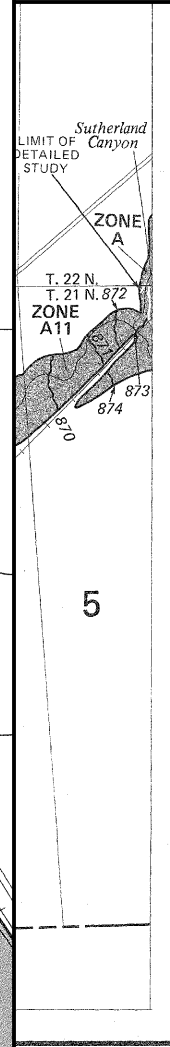
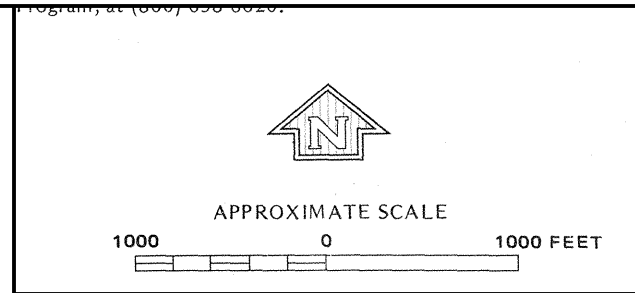
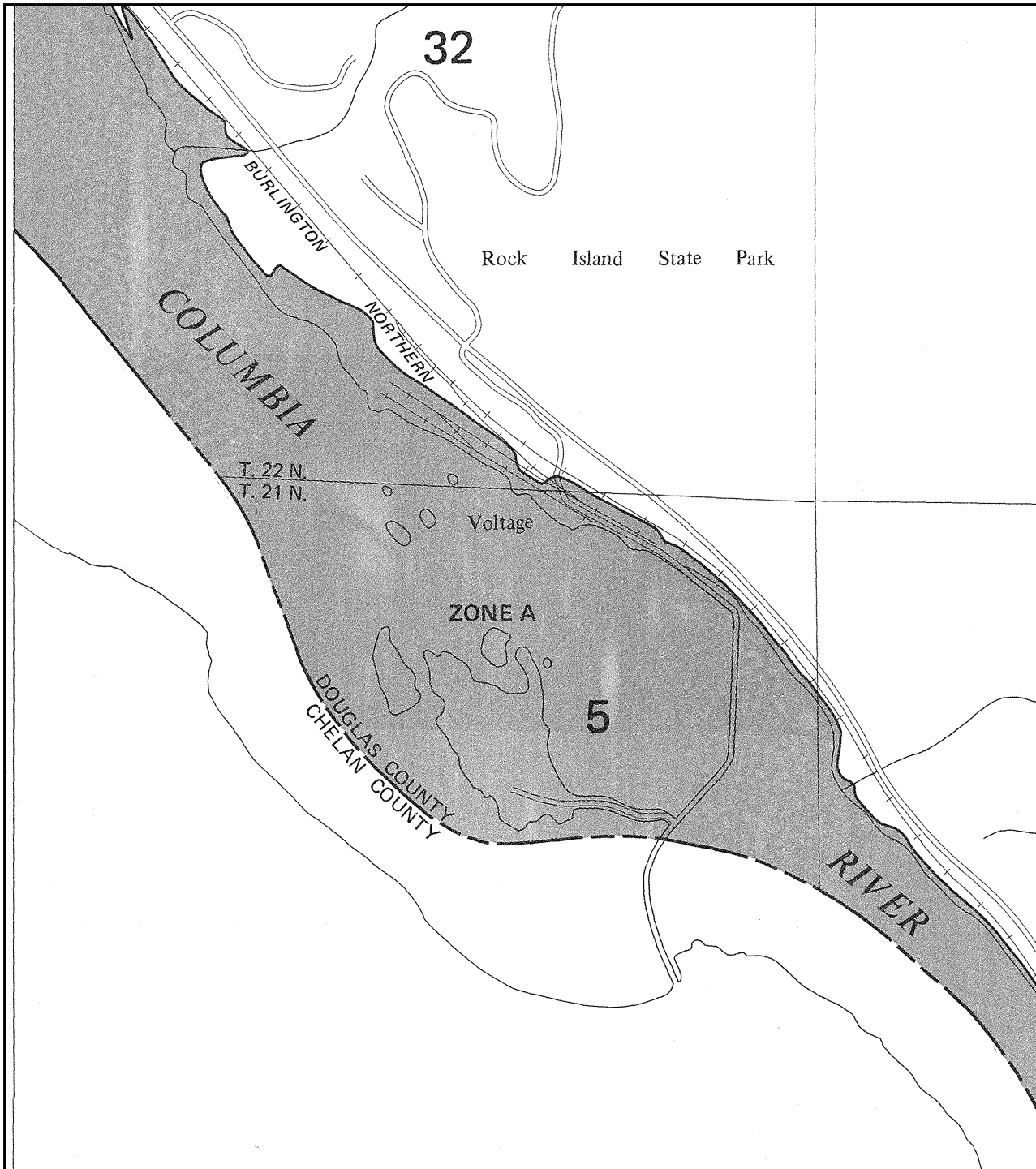
(SEE MAP INDEX FOR PAGES NOT PRINTED)

EFFECTIVE
JULY 17, 1978



U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.



NATIONAL FLOOD INSURANCE PROGRAM


FIRM
FLOOD INSURANCE RATE MAP

DOUGLAS COUNTY, WASHINGTON
(UNINCORPORATED AREAS)

PANEL 570 OF 650
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
530036 0570 B

MAP REVISED:
MAY 17, 1982



Federal Emergency Management Agency

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.



NRCS WEB SOIL SURVEY REPORTS



Downtown Connection Site



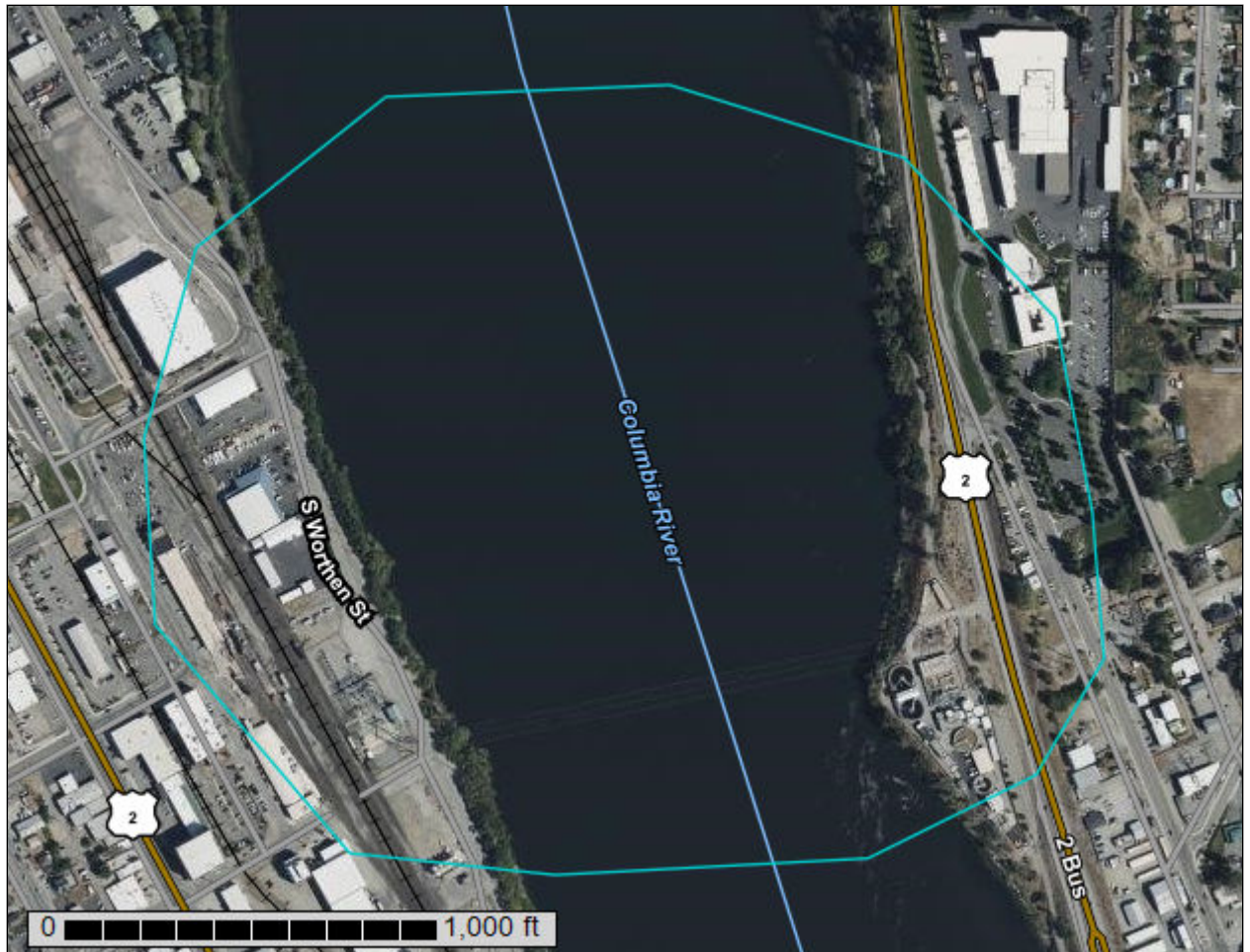
United States
Department of
Agriculture

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 Chelan County Area, Washington (Parts of Chelan and Kittitas Counties), and Douglas County, Washington



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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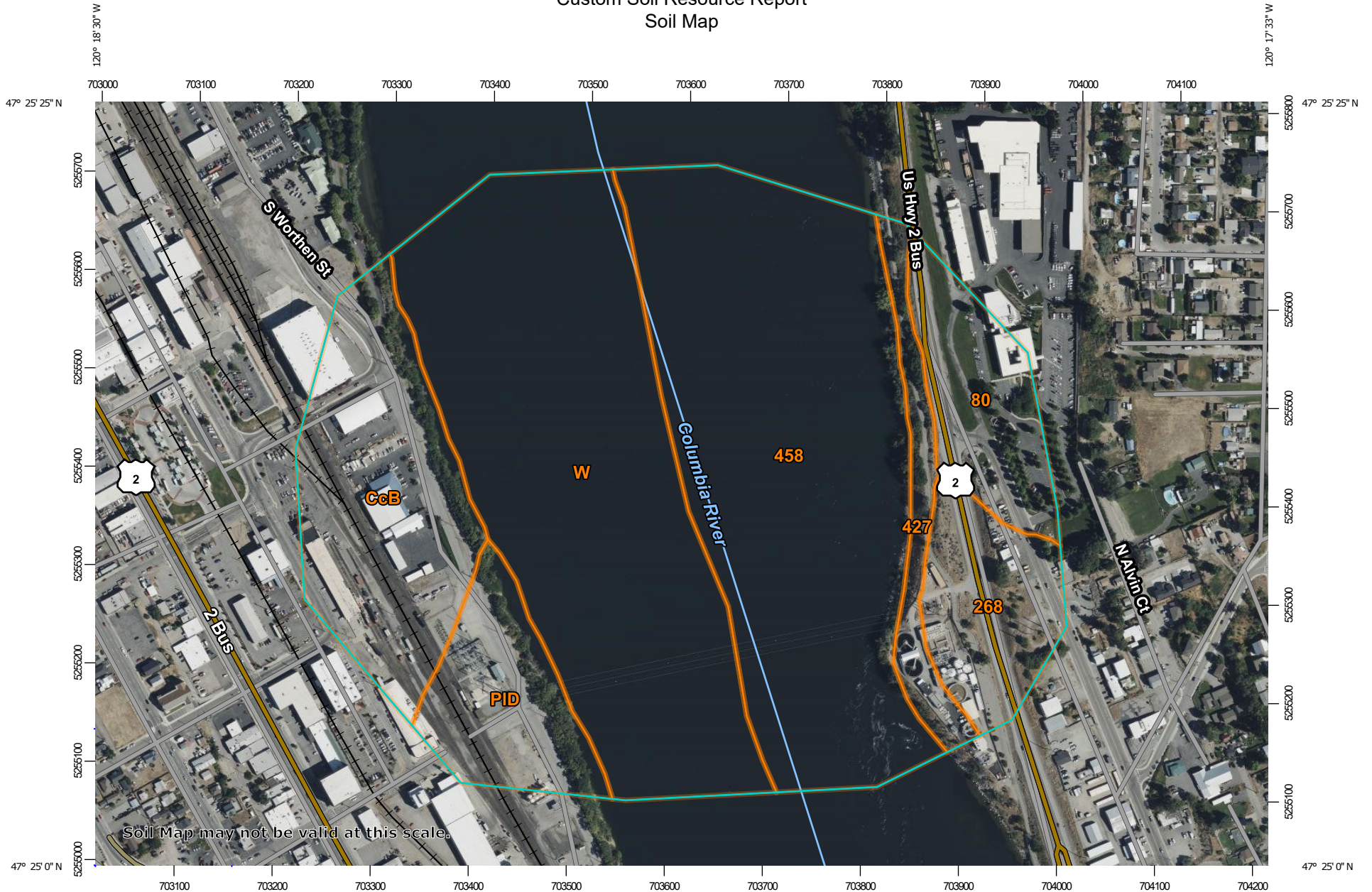
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Soil Map

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: 1:5,470 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N 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
-  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 scales ranging from 1:12,000 to 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Chelan County Area, Washington (Parts of Chelan and Kittitas Counties)
 Survey Area Data: Version 18, Aug 30, 2022

Soil Survey Area: Douglas County, Washington
 Survey Area Data: Version 24, Aug 30, 2022

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

MAP LEGEND

MAP INFORMATION

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

Date(s) aerial images were photographed: Aug 3, 2022—Aug 8, 2022

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
CcB	Cashmont sandy loam, 3 to 8 percent slopes	13.9	13.5%
PID	Peshastin stony loam, 0 to 25 percent slopes	6.8	6.6%
W	Water	32.9	31.8%
Subtotals for Soil Survey Area		53.6	51.9%
Totals for Area of Interest		103.3	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
80	Cashmere fine sandy loam, 3 to 8 percent slopes	6.4	6.2%
268	Pogue extremely stony fine sandy loam, 3 to 25 percent slopes	6.5	6.3%
427	Torriorthents, very steep	3.6	3.4%
458	Water	33.3	32.2%
Subtotals for Soil Survey Area		49.7	48.1%
Totals for Area of Interest		103.3	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

Custom Soil Resource Report

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.

Chelan County Area, Washington (Parts of Chelan and Kittitas Counties)

CcB—Cashmont sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2g8p
Elevation: 1,200 to 1,800 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Cashmont

Setting

Landform: Terraces, alluvial fans, hillslopes
Landform position (two-dimensional): Footslope
Parent material: Alluvium, glaciofluvial deposits or ablation till

Typical profile

H1 - 0 to 8 inches: sandy loam
H2 - 8 to 21 inches: gravelly sandy loam
H3 - 21 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 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 supply, 0 to 60 inches: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: R008XY220WA - Stony Foothills bitterbrush
Hydric soil rating: No

PID—Peshastin stony loam, 0 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2gbx

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Elevation: 700 to 2,400 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 140 to 190 days
Farmland classification: Farmland of unique importance

Map Unit Composition

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

Description of Peshastin

Setting

Landform: Terraces
Parent material: Till and outwash with a component of loess and volcanic ash in the surface

Typical profile

H1 - 0 to 7 inches: stony loam
H2 - 7 to 18 inches: loam
H3 - 18 to 60 inches: very cobbly sandy loam

Properties and qualities

Slope: 0 to 25 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
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Ecological site: R008XY120WA - Stony sagebrush
Hydric soil rating: No

W—Water

Map Unit Composition

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

Description of Water

Setting

Landform: Alluvial cones

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Douglas County, Washington

80—Cashmere fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: rh0h
Elevation: 700 to 1,400 feet
Mean annual precipitation: 9 to 10 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 145 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Cashmere and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cashmere

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Parent material: Glaciofluvial deposits

Typical profile

H1 - 0 to 11 inches: fine sandy loam
H2 - 11 to 24 inches: fine sandy loam
H3 - 24 to 60 inches: fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: R008XY130WA - Loamy sagebrush
Hydric soil rating: No

Minor Components

Magallon

Percent of map unit: 5 percent
Hydric soil rating: No

Cashmere, steeper sloping

Percent of map unit: 5 percent
Hydric soil rating: No

Pogue

Percent of map unit: 3 percent
Hydric soil rating: No

Quincy

Percent of map unit: 2 percent
Hydric soil rating: No

268—Pogue extremely stony fine sandy loam, 3 to 25 percent slopes

Map Unit Setting

National map unit symbol: rgxj
Elevation: 600 to 1,400 feet
Mean annual precipitation: 9 to 10 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 190 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Pogue and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pogue

Setting

Landform: Terraces
Landform position (three-dimensional): Riser
Parent material: Alluvium mixed with loess over glacial outwash

Typical profile

H1 - 0 to 10 inches: extremely stony fine sandy loam
H2 - 10 to 15 inches: cobbly fine sandy loam
H3 - 15 to 28 inches: cobbly fine sandy loam
H4 - 28 to 60 inches: very gravelly sand

Properties and qualities

Slope: 3 to 25 percent
Depth to restrictive feature: 20 to 35 inches to strongly contrasting textural stratification
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 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)

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Available water supply, 0 to 60 inches: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): 6e

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: A

Ecological site: R008XY112WA - Shallow Stony sagebrush

Hydric soil rating: No

Minor Components

Burbank

Percent of map unit: 5 percent

Hydric soil rating: No

Magallon

Percent of map unit: 5 percent

Hydric soil rating: No

Quincy

Percent of map unit: 3 percent

Hydric soil rating: No

Cashmere

Percent of map unit: 2 percent

Hydric soil rating: No

427—Torriorthents, very steep

Map Unit Setting

National map unit symbol: rgmr

Elevation: 600 to 1,800 feet

Mean annual precipitation: 7 to 10 inches

Mean annual air temperature: 49 to 51 degrees F

Frost-free period: 140 to 190 days

Farmland classification: Not prime farmland

Map Unit Composition

Torriorthents and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Torriorthents

Setting

Landform: Terraces

Landform position (three-dimensional): Riser

Parent material: Glacial outwash

Typical profile

H1 - 0 to 10 inches: gravelly fine sandy loam

H2 - 10 to 60 inches: very cobbly coarse sand

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Properties and qualities

Slope: 25 to 65 percent

Depth to restrictive feature: 10 to 14 inches to strongly contrasting textural stratification

Drainage class: Excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 2 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Ecological site: R008XY220WA - Stony Foothills bitterbrush

Hydric soil rating: No

Minor Components

Pogue

Percent of map unit: 5 percent

Hydric soil rating: No

Quincy

Percent of map unit: 5 percent

Hydric soil rating: No

458—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

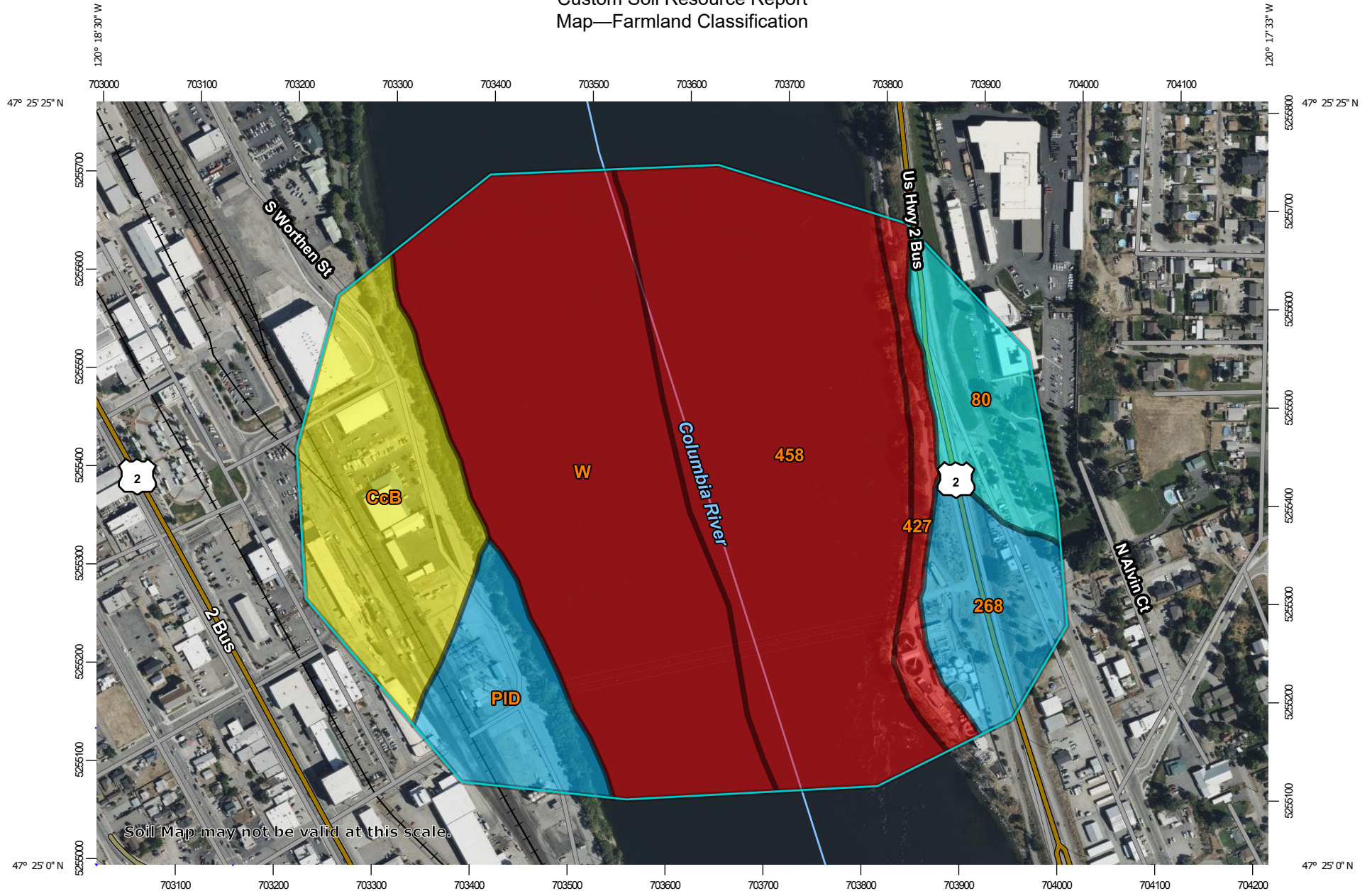
Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

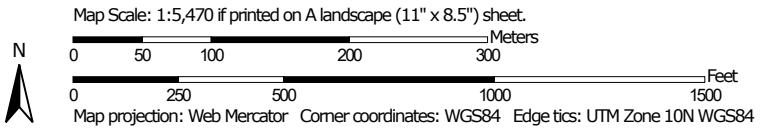
Farmland Classification

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.

Custom Soil Resource Report Map—Farmland Classification




Soil Map may not be valid at this scale.



Custom Soil Resource Report









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

Custom Soil Resource Report

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

Custom Soil Resource Report

<p> Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season</p>	<p> Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium</p>	<p> Farmland of unique importance</p> <p> Not rated or not available</p>	<p>The soil surveys that comprise your AOI were mapped at scales ranging from 1:12,000 to 1:20,000.</p>
<p> Farmland of statewide importance, if irrigated and drained</p>	<p> Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season</p>	<p>Water Features</p> <p> Streams and Canals</p>	<div style="border: 1px solid black; padding: 5px;"> <p>Warning: Soil Map may not be valid at this scale.</p> <p>Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.</p> </div>
<p> Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season</p>	<p> Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season</p>	<p>Transportation</p> <p> Rails</p> <p> Interstate Highways</p> <p> US Routes</p> <p> Major Roads</p> <p> Local Roads</p>	
<p> Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer</p>	<p> Farmland of statewide importance, if warm enough</p>	<p>Background</p> <p> Aerial Photography</p>	<p>Please rely on the bar scale on each map sheet for map measurements.</p>
<p> Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60</p>	<p> Farmland of statewide importance, if thawed</p>		<p>Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)</p>
	<p> Farmland of local importance</p>		<p>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.</p>
	<p> Farmland of local importance, if irrigated</p>		<p>This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.</p>
			<p>Soil Survey Area: Chelan County Area, Washington (Parts of Chelan and Kittitas Counties) Survey Area Data: Version 18, Aug 30, 2022</p>
			<p>Soil Survey Area: Douglas County, Washington Survey Area Data: Version 24, Aug 30, 2022</p>
			<p>Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.</p>
			<p>Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.</p>

Custom Soil Resource Report

Date(s) aerial images were photographed: Aug 3, 2022—Aug 8, 2022

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.

Table—Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CcB	Cashmont sandy loam, 3 to 8 percent slopes	Prime farmland if irrigated	13.9	13.5%
PID	Peshastin stony loam, 0 to 25 percent slopes	Farmland of unique importance	6.8	6.6%
W	Water	Not prime farmland	32.9	31.8%
Subtotals for Soil Survey Area			53.6	51.9%
Totals for Area of Interest			103.3	100.0%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
80	Cashmere fine sandy loam, 3 to 8 percent slopes	Farmland of statewide importance	6.4	6.2%
268	Pogue extremely stony fine sandy loam, 3 to 25 percent slopes	Farmland of unique importance	6.5	6.3%
427	Torriorthents, very steep	Not prime farmland	3.6	3.4%
458	Water	Not prime farmland	33.3	32.2%
Subtotals for Soil Survey Area			49.7	48.1%
Totals for Area of Interest			103.3	100.0%

Rating Options—Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

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SR 285 Expansion Site



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 Chelan County Area, Washington (Parts of Chelan and Kittitas Counties), and Douglas County, Washington



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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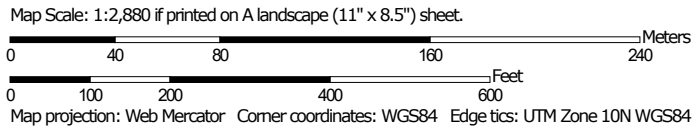
Soil Map

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



Soil Map may not be valid at this scale.



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 scales ranging from 1:12,000 to 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Chelan County Area, Washington (Parts of Chelan and Kittitas Counties)
 Survey Area Data: Version 18, Aug 30, 2022

Soil Survey Area: Douglas County, Washington
 Survey Area Data: Version 24, Aug 30, 2022

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

MAP LEGEND

MAP INFORMATION

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

Date(s) aerial images were photographed: Aug 3, 2022—Aug 8, 2022

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
PID	Peshastin stony loam, 0 to 25 percent slopes	3.1	9.7%
PIE	Peshastin stony loam, 25 to 45 percent slopes	2.8	8.8%
W	Water	8.4	26.3%
Subtotals for Soil Survey Area		14.3	44.8%
Totals for Area of Interest		32.0	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
266	Pogue cobbly fine sandy loam, 0 to 15 percent slopes	0.0	0.1%
268	Pogue extremely stony fine sandy loam, 3 to 25 percent slopes	4.7	14.7%
427	Torriorthents, very steep	3.4	10.6%
458	Water	9.6	29.8%
Subtotals for Soil Survey Area		17.7	55.2%
Totals for Area of Interest		32.0	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

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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.

Chelan County Area, Washington (Parts of Chelan and Kittitas Counties)

PID—Peshastin stony loam, 0 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2gbx
Elevation: 700 to 2,400 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 140 to 190 days
Farmland classification: Farmland of unique importance

Map Unit Composition

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

Description of Peshastin

Setting

Landform: Terraces
Parent material: Till and outwash with a component of loess and volcanic ash in the surface

Typical profile

H1 - 0 to 7 inches: stony loam
H2 - 7 to 18 inches: loam
H3 - 18 to 60 inches: very cobbly sandy loam

Properties and qualities

Slope: 0 to 25 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
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Ecological site: R008XY120WA - Stony sagebrush
Hydric soil rating: No

PIE—Peshastin stony loam, 25 to 45 percent slopes

Map Unit Setting

National map unit symbol: 2gby
Elevation: 700 to 2,400 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 140 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Peshastin

Setting

Landform: Terraces
Parent material: Till and outwash with a component of loess and volcanic ash in the surface

Typical profile

H1 - 0 to 7 inches: stony loam
H2 - 7 to 18 inches: loam
H3 - 18 to 60 inches: very cobbly sandy loam

Properties and qualities

Slope: 25 to 45 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
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R008XY120WA - Stony sagebrush
Hydric soil rating: No

W—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Setting

Landform: Alluvial cones

Douglas County, Washington

266—Pogue cobbly fine sandy loam, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: rgxh
Elevation: 600 to 1,400 feet
Mean annual precipitation: 9 to 10 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 190 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Pogue and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pogue

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Parent material: Alluvium mixed with loess over glacial outwash

Typical profile

H1 - 0 to 8 inches: cobbly fine sandy loam
H2 - 8 to 18 inches: cobbly fine sandy loam
H3 - 18 to 24 inches: gravelly sandy loam
H4 - 24 to 60 inches: very cobbly sand

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: 20 to 35 inches to strongly contrasting textural stratification
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 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 supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: R008XY220WA - Stony Foothills bitterbrush
Hydric soil rating: No

Minor Components

Pogue, stony surface

Percent of map unit: 5 percent
Hydric soil rating: No

Quincy

Percent of map unit: 5 percent
Hydric soil rating: No

Burbank

Percent of map unit: 3 percent
Hydric soil rating: No

Cashmere

Percent of map unit: 1 percent
Hydric soil rating: No

Magallon

Percent of map unit: 1 percent
Hydric soil rating: No

268—Pogue extremely stony fine sandy loam, 3 to 25 percent slopes

Map Unit Setting

National map unit symbol: rgxj
Elevation: 600 to 1,400 feet
Mean annual precipitation: 9 to 10 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 190 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Pogue and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pogue

Setting

Landform: Terraces
Landform position (three-dimensional): Riser
Parent material: Alluvium mixed with loess over glacial outwash

Typical profile

H1 - 0 to 10 inches: extremely stony fine sandy loam
H2 - 10 to 15 inches: cobbly fine sandy loam
H3 - 15 to 28 inches: cobbly fine sandy loam
H4 - 28 to 60 inches: very gravelly sand

Properties and qualities

Slope: 3 to 25 percent
Depth to restrictive feature: 20 to 35 inches to strongly contrasting textural stratification
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)

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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 supply, 0 to 60 inches: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: R008XY112WA - Shallow Stony sagebrush
Hydric soil rating: No

Minor Components

Burbank

Percent of map unit: 5 percent
Hydric soil rating: No

Magallon

Percent of map unit: 5 percent
Hydric soil rating: No

Quincy

Percent of map unit: 3 percent
Hydric soil rating: No

Cashmere

Percent of map unit: 2 percent
Hydric soil rating: No

427—Torriorthents, very steep

Map Unit Setting

National map unit symbol: rgmr
Elevation: 600 to 1,800 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Torriorthents

Setting

Landform: Terraces
Landform position (three-dimensional): Riser
Parent material: Glacial outwash

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Typical profile

H1 - 0 to 10 inches: gravelly fine sandy loam

H2 - 10 to 60 inches: very cobbly coarse sand

Properties and qualities

Slope: 25 to 65 percent

Depth to restrictive feature: 10 to 14 inches to strongly contrasting textural stratification

Drainage class: Excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 2 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Ecological site: R008XY220WA - Stony Foothills bitterbrush

Hydric soil rating: No

Minor Components

Pogue

Percent of map unit: 5 percent

Hydric soil rating: No

Quincy

Percent of map unit: 5 percent

Hydric soil rating: No

458—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

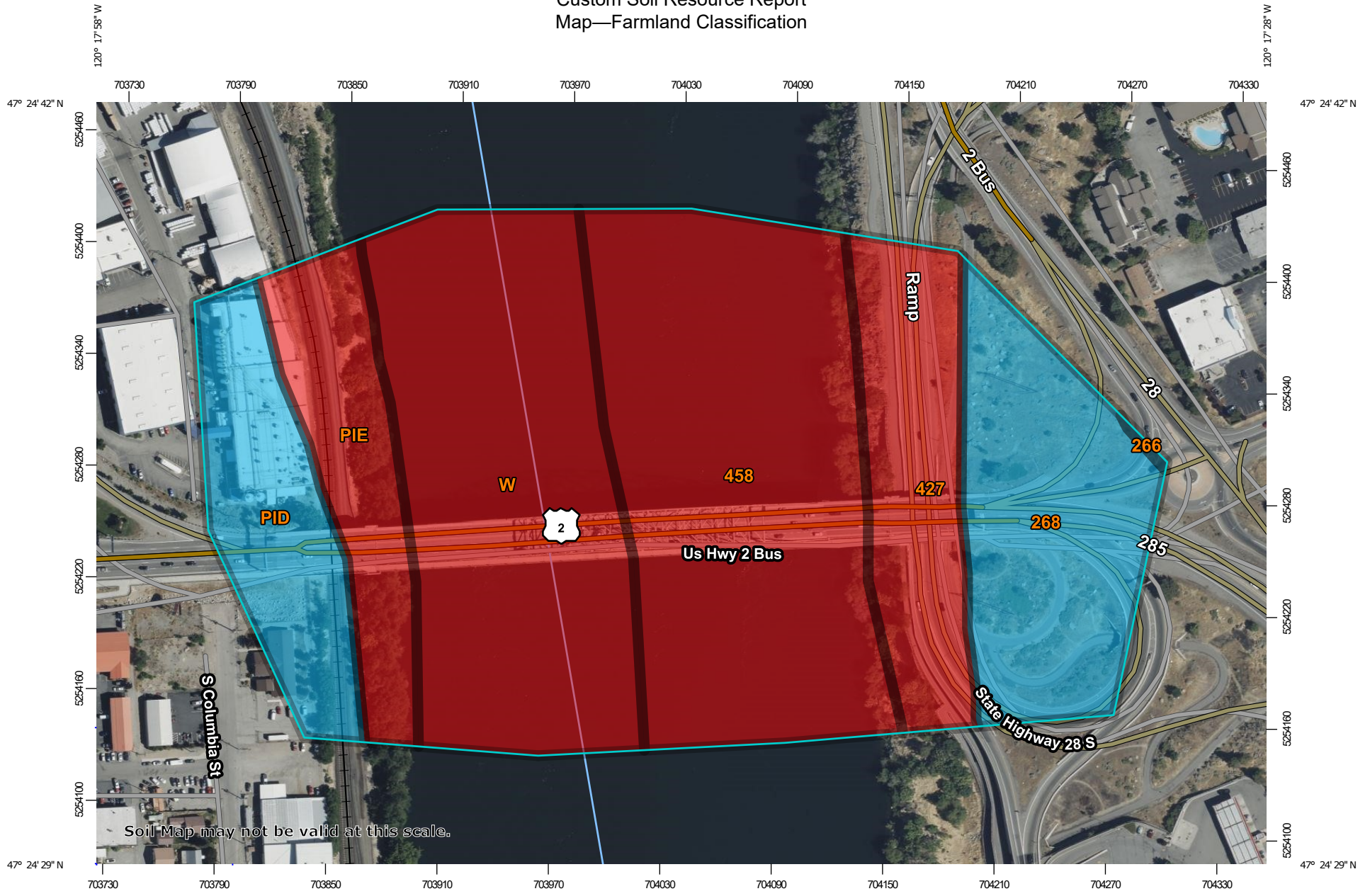
Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

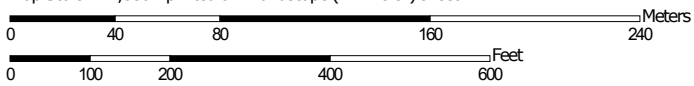
Farmland Classification

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.

Custom Soil Resource Report Map—Farmland Classification



Map Scale: 1:2,880 if printed on A landscape (11" x 8.5") sheet.




Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

Custom Soil Resource Report









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

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

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<p> Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season</p>	<p> Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium</p>	<p> Farmland of unique importance</p> <p> Not rated or not available</p>	<p>The soil surveys that comprise your AOI were mapped at scales ranging from 1:12,000 to 1:20,000.</p>
<p> Farmland of statewide importance, if irrigated and drained</p>	<p> Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season</p>	<p>Water Features</p> <p> Streams and Canals</p>	<div style="border: 1px solid black; padding: 5px;"> <p>Warning: Soil Map may not be valid at this scale.</p> <p>Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.</p> </div>
<p> Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season</p>	<p> Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season</p>	<p>Transportation</p> <p> Rails</p> <p> Interstate Highways</p> <p> US Routes</p> <p> Major Roads</p> <p> Local Roads</p>	
<p> Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer</p>	<p> Farmland of statewide importance, if warm enough</p>	<p>Background</p> <p> Aerial Photography</p>	<p>Please rely on the bar scale on each map sheet for map measurements.</p>
<p> Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60</p>	<p> Farmland of statewide importance, if thawed</p>		<p>Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)</p>
	<p> Farmland of local importance</p>		<p>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.</p>
	<p> Farmland of local importance, if irrigated</p>		<p>This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.</p>
			<p>Soil Survey Area: Chelan County Area, Washington (Parts of Chelan and Kittitas Counties) Survey Area Data: Version 18, Aug 30, 2022</p>
			<p>Soil Survey Area: Douglas County, Washington Survey Area Data: Version 24, Aug 30, 2022</p>
			<p>Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.</p>
			<p>Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.</p>

Custom Soil Resource Report

Date(s) aerial images were photographed: Aug 3, 2022—Aug 8, 2022

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.

Table—Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
PID	Peshastin stony loam, 0 to 25 percent slopes	Farmland of unique importance	3.1	9.7%
PIE	Peshastin stony loam, 25 to 45 percent slopes	Not prime farmland	2.8	8.8%
W	Water	Not prime farmland	8.4	26.3%
Subtotals for Soil Survey Area			14.3	44.8%
Totals for Area of Interest			32.0	100.0%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
266	Pogue cobbly fine sandy loam, 0 to 15 percent slopes	Farmland of unique importance	0.0	0.1%
268	Pogue extremely stony fine sandy loam, 3 to 25 percent slopes	Farmland of unique importance	4.7	14.7%
427	Torriorthents, very steep	Not prime farmland	3.4	10.6%
458	Water	Not prime farmland	9.6	29.8%
Subtotals for Soil Survey Area			17.7	55.2%
Totals for Area of Interest			32.0	100.0%

Rating Options—Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

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Mid-Valley Connection Site



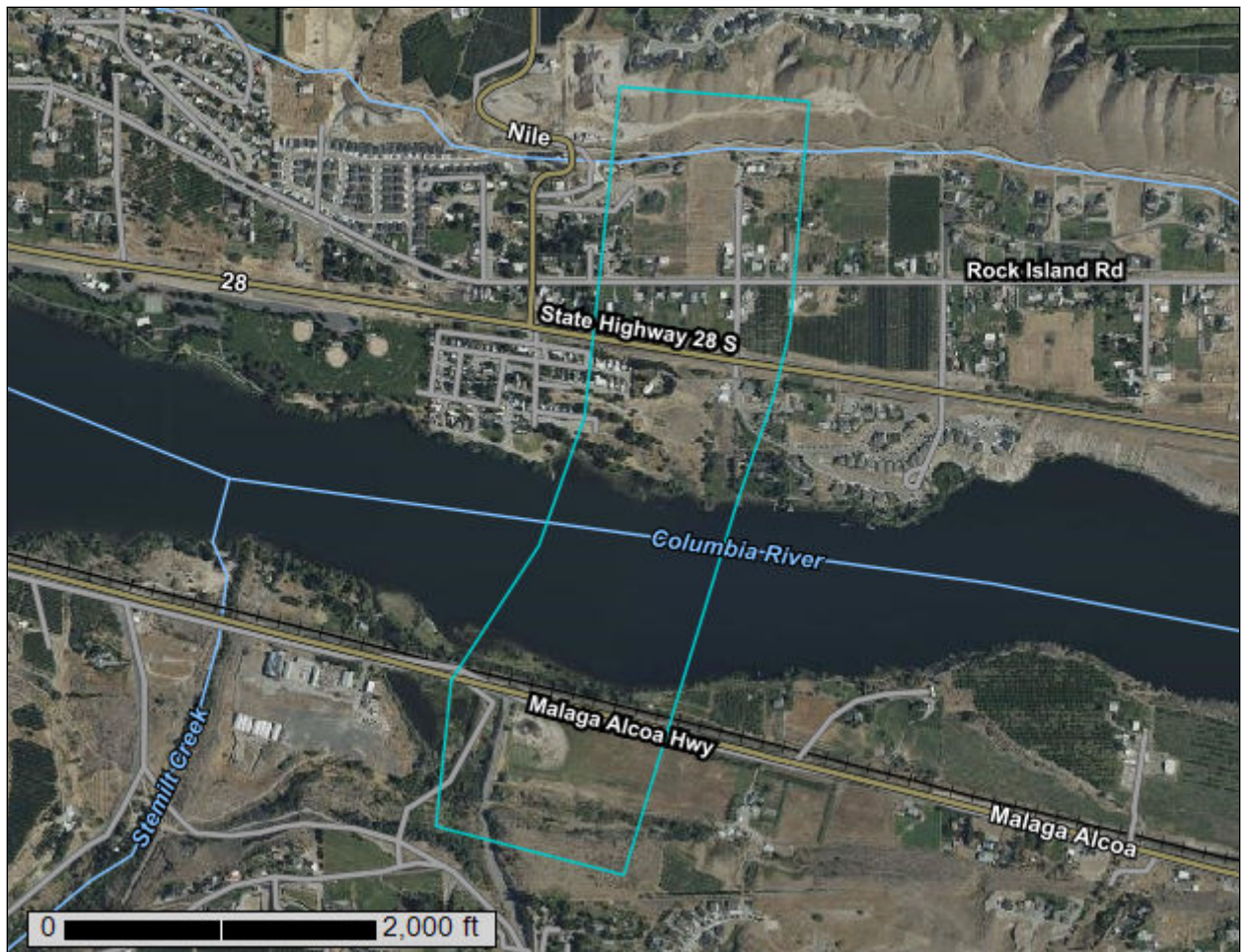
United States
Department of
Agriculture

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 Chelan County Area, Washington (Parts of Chelan and Kittitas Counties), and Douglas County, Washington



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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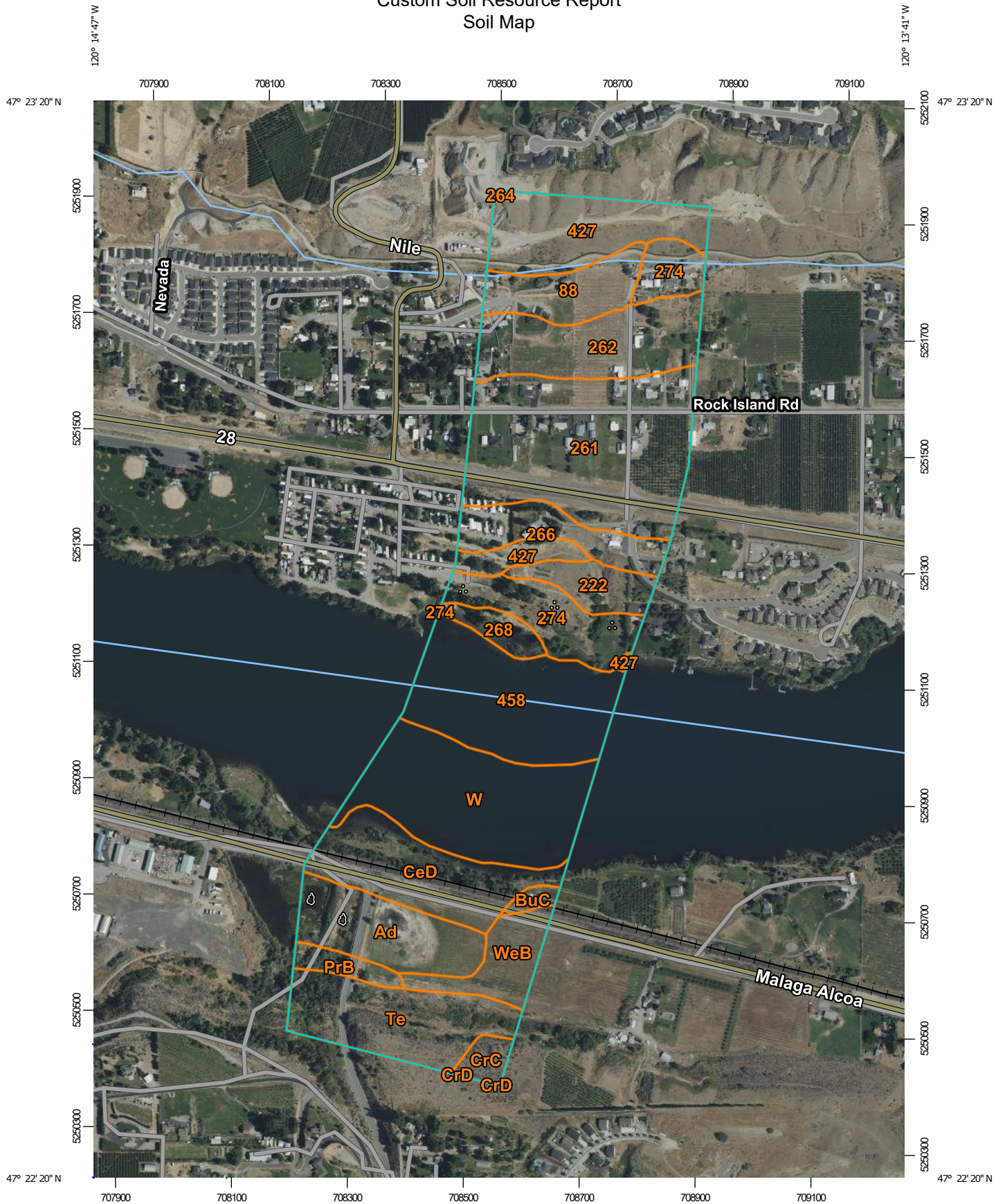
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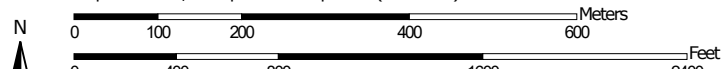
Soil Map

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: 1:9,020 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N 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
-  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 scales ranging from 1:12,000 to 1:20,000.

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: Chelan County Area, Washington (Parts of Chelan and Kittitas Counties)
 Survey Area Data: Version 19, Aug 29, 2023

Soil Survey Area: Douglas County, Washington
 Survey Area Data: Version 25, Aug 28, 2023

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Aug 3, 2022—Aug 8, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

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
Ad	Alluvial land	8.6	6.0%
BuC	Burch fine sandy loam, 8 to 15 percent slopes	0.7	0.5%
CeD	Cashmont stony sandy loam, 0 to 25 percent slopes	10.8	7.6%
CrC	Colockum silt loam, 8 to 15 percent slopes	1.4	1.0%
CrD	Colockum silt loam, 15 to 25 percent slopes	0.0	0.0%
PrB	Pogue gravelly fine sandy loam, 3 to 8 percent slopes	1.7	1.2%
Te	Terrace escarpments	10.7	7.5%
W	Water	16.8	11.8%
WeB	Wenatchee silt loam, 3 to 8 percent slopes	4.6	3.2%
Subtotals for Soil Survey Area		55.5	38.9%
Totals for Area of Interest		142.8	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
88	Cashmont gravelly sandy loam, 8 to 15 percent slopes	5.6	3.9%
222	Logy cobbly sandy loam, 3 to 15 percent slopes	3.7	2.6%
261	Pogue fine sandy loam, 0 to 3 percent slopes	23.2	16.2%
262	Pogue fine sandy loam, 3 to 8 percent slopes	10.5	7.4%
264	Pogue gravelly fine sandy loam, 8 to 15 percent slopes	0.1	0.1%
266	Pogue cobbly fine sandy loam, 0 to 15 percent slopes	5.5	3.9%
268	Pogue extremely stony fine sandy loam, 3 to 25 percent slopes	2.1	1.5%
274	Quincy loamy fine sand, 0 to 15 percent slopes	9.3	6.5%
427	Torriorrhents, very steep	11.9	8.4%
458	Water	15.5	10.8%
Subtotals for Soil Survey Area		87.3	61.1%
Totals for Area of Interest		142.8	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

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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.

Chelan County Area, Washington (Parts of Chelan and Kittitas Counties)

Ad—Alluvial land

Map Unit Setting

National map unit symbol: 2g7k
Elevation: 500 to 2,000 feet
Mean annual precipitation: 7 to 30 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 190 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Alluvial land and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alluvial Land

Setting

Landform: Flood plains, terraces
Parent material: Alluvium

Typical profile

H1 - 0 to 12 inches: fine sandy loam
H2 - 12 to 60 inches: stratified loamy sand to loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately 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: About 24 to 48 inches
Frequency of flooding: NoneOccasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C
Hydric soil rating: No

BuC—Burch fine sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2g89
Elevation: 700 to 1,200 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 48 to 50 degrees F

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Frost-free period: 165 to 190 days

Farmland classification: Farmland of unique importance

Map Unit Composition

Burch and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Burch

Setting

Landform: Terraces

Parent material: Alluvium derived from sandstone

Typical profile

H1 - 0 to 8 inches: fine sandy loam

H2 - 8 to 60 inches: loam

Properties and qualities

Slope: 8 to 15 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 supply, 0 to 60 inches: High (about 11.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B

Ecological site: R008XY130WA - Loamy sagebrush

Hydric soil rating: No

CeD—Cashmont stony sandy loam, 0 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2g8s

Elevation: 1,200 to 1,800 feet

Mean annual precipitation: 8 to 11 inches

Mean annual air temperature: 48 to 50 degrees F

Frost-free period: 140 to 180 days

Farmland classification: Farmland of unique importance

Map Unit Composition

Cashmont and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cashmont

Setting

Landform: Terraces, alluvial fans, hillslopes

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Landform position (two-dimensional): Footslope

Parent material: Alluvium, glaciofluvial deposits or ablation till

Typical profile

H1 - 0 to 21 inches: stony sandy loam

H2 - 21 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 0 to 25 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 supply, 0 to 60 inches: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: A

Ecological site: R008XY220WA - Stony Foothills bitterbrush

Hydric soil rating: No

CrC—Colockum silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2g9d

Elevation: 1,000 to 3,200 feet

Mean annual precipitation: 12 to 16 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 110 to 165 days

Farmland classification: Farmland of unique importance

Map Unit Composition

Colockum and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colockum

Setting

Landform: Mountain slopes, hillslopes

Parent material: Colluvium from sandstone or basalt with loess and volcanic ash in the upper part

Typical profile

H1 - 0 to 12 inches: silt loam

H2 - 12 to 26 inches: silt loam

H3 - 26 to 47 inches: silty clay loam

H4 - 47 to 60 inches: very gravelly silty clay loam

Properties and qualities

Slope: 8 to 15 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 (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R008XY130WA - Loamy sagebrush
Hydric soil rating: No

CrD—Colockum silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2g9f
Elevation: 1,000 to 3,200 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 110 to 165 days
Farmland classification: Farmland of unique importance

Map Unit Composition

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

Description of Colockum

Setting

Landform: Mountain slopes, hillslopes
Parent material: Colluvium from sandstone or basalt with loess and volcanic ash in the upper part

Typical profile

H1 - 0 to 12 inches: silt loam
H2 - 12 to 26 inches: silt loam
H3 - 26 to 47 inches: silty clay loam
H4 - 47 to 60 inches: very gravelly silty clay loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained

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Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): 6e

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Ecological site: R008XY130WA - Loamy sagebrush

Hydric soil rating: No

PrB—Pogue gravelly fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2gc1

Elevation: 600 to 2,200 feet

Mean annual precipitation: 8 to 12 inches

Mean annual air temperature: 48 to 50 degrees F

Frost-free period: 140 to 180 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Pogue and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pogue

Setting

Landform: Terraces

Parent material: Glacial outwash

Typical profile

H1 - 0 to 17 inches: gravelly fine sandy loam

H2 - 17 to 30 inches: very gravelly fine sandy loam

H3 - 30 to 60 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification

Drainage class: Somewhat 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 supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R008XY226WA - Stony Foothills South Aspect bitterbrush
Hydric soil rating: No

Te—Terrace escarpments

Map Unit Setting

National map unit symbol: 2gcp
Elevation: 50 to 2,500 feet
Mean annual precipitation: 7 to 20 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 165 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Terrace Escarpments

Typical profile

H1 - 0 to 6 inches: loamy sand
H2 - 6 to 60 inches: extremely gravelly sand

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

W—Water

Map Unit Composition

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

Description of Water

Setting

Landform: Alluvial cones

WeB—Wenatchee silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2gd2

Elevation: 690 to 1,280 feet

Mean annual precipitation: 9 to 12 inches

Mean annual air temperature: 48 to 52 degrees F

Frost-free period: 150 to 185 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Wenatchee and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wenatchee

Setting

Landform: Terraces

Parent material: Alluvium with a minor amount of loess and volcanic ash in the surface

Typical profile

H1 - 0 to 8 inches: silt loam

H2 - 8 to 17 inches: silt loam

H3 - 17 to 60 inches: sandy clay loam

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: R008XY130WA - Loamy sagebrush

Hydric soil rating: No

Douglas County, Washington

88—Cashmont gravelly sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: rgwv
Elevation: 750 to 1,500 feet
Mean annual precipitation: 9 to 11 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 190 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Cashmont and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cashmont

Setting

Landform: Fans on terraces
Landform position (three-dimensional): Riser
Parent material: Gravelly alluvium

Typical profile

H1 - 0 to 10 inches: gravelly sandy loam
H2 - 10 to 36 inches: gravelly fine sandy loam
H3 - 36 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 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 supply, 0 to 60 inches: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: R008XY220WA - Stony Foothills bitterbrush
Hydric soil rating: No

Minor Components

Logy

Percent of map unit: 5 percent
Hydric soil rating: No

Cashmont, steeper sloping

Percent of map unit: 5 percent

Custom Soil Resource Report

Hydric soil rating: No

Pogue

Percent of map unit: 3 percent

Hydric soil rating: No

Quincy

Percent of map unit: 2 percent

Hydric soil rating: No

222—Logy cobbly sandy loam, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: rgwm

Elevation: 750 to 2,400 feet

Mean annual precipitation: 9 to 12 inches

Mean annual air temperature: 48 to 51 degrees F

Frost-free period: 130 to 190 days

Farmland classification: Not prime farmland

Map Unit Composition

Logy and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Logy

Setting

Landform: Fans

Landform position (three-dimensional): Riser

Parent material: Alluvium and colluvium

Typical profile

H1 - 0 to 10 inches: cobbly sandy loam

H2 - 10 to 28 inches: very gravelly sandy loam

H3 - 28 to 60 inches: stratified extremely gravelly coarse sand to gravelly sandy loam

Properties and qualities

Slope: 3 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 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 supply, 0 to 60 inches: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Custom Soil Resource Report

Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: R008XY220WA - Stony Foothills bitterbrush
Hydric soil rating: No

Minor Components

Logy, very stony surface

Percent of map unit: 8 percent
Hydric soil rating: No

Logy, steeper sloping

Percent of map unit: 5 percent
Hydric soil rating: No

Haploxerolls

Percent of map unit: 2 percent
Hydric soil rating: No

261—Pogue fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: rgwr
Elevation: 600 to 1,400 feet
Mean annual precipitation: 9 to 10 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 190 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Pogue and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pogue

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Parent material: Loess over glacial outwash

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 24 inches: fine sandy loam
H3 - 24 to 60 inches: very gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 35 inches to strongly contrasting textural stratification
Drainage class: Somewhat excessively drained

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 6.00 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 supply, 0 to 60 inches: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

Ecological site: R008XY130WA - Loamy sagebrush

Hydric soil rating: No

Minor Components

Quincy

Percent of map unit: 5 percent

Hydric soil rating: No

Aeneas

Percent of map unit: 3 percent

Hydric soil rating: No

Burbank

Percent of map unit: 3 percent

Hydric soil rating: No

Pogue, steeper sloping

Percent of map unit: 2 percent

Hydric soil rating: No

Skaha

Percent of map unit: 2 percent

Hydric soil rating: No

262—Pogue fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: rgx2

Elevation: 600 to 1,400 feet

Mean annual precipitation: 9 to 10 inches

Mean annual air temperature: 49 to 51 degrees F

Frost-free period: 140 to 190 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Pogue and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pogue

Setting

Landform: Terraces

Landform position (three-dimensional): Tread

Parent material: Loess over glacial outwash

Typical profile

H1 - 0 to 9 inches: fine sandy loam

H2 - 9 to 24 inches: fine sandy loam

H3 - 24 to 60 inches: very gravelly sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: 20 to 35 inches to strongly contrasting textural stratification

Drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 6.00 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 supply, 0 to 60 inches: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

Ecological site: R008XY130WA - Loamy sagebrush

Hydric soil rating: No

Minor Components

Quincy

Percent of map unit: 5 percent

Hydric soil rating: No

Pogue, steeper sloping

Percent of map unit: 3 percent

Hydric soil rating: No

Aeneas

Percent of map unit: 3 percent

Hydric soil rating: No

Cashmere

Percent of map unit: 2 percent

Hydric soil rating: No

Burbank

Percent of map unit: 1 percent

Hydric soil rating: No

Skaha

Percent of map unit: 1 percent

Hydric soil rating: No

264—Pogue gravelly fine sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: rgx9
Elevation: 600 to 1,400 feet
Mean annual precipitation: 9 to 10 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 190 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Pogue and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pogue

Setting

Landform: Terraces
Landform position (three-dimensional): Riser
Parent material: Alluvium mixed with loess over glacial outwash

Typical profile

H1 - 0 to 9 inches: gravelly fine sandy loam
H2 - 9 to 26 inches: gravelly fine sandy loam
H3 - 26 to 60 inches: very gravelly sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 35 inches to strongly contrasting textural stratification
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 6.00 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 supply, 0 to 60 inches: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: R008XY220WA - Stony Foothills bitterbrush
Hydric soil rating: No

Minor Components

Quincy

Percent of map unit: 5 percent
Hydric soil rating: No

Cashmont

Percent of map unit: 5 percent
Hydric soil rating: No

Pogue, steeper sloping

Percent of map unit: 3 percent
Hydric soil rating: No

Burbank

Percent of map unit: 2 percent
Hydric soil rating: No

266—Pogue cobbly fine sandy loam, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: rgxh
Elevation: 600 to 1,400 feet
Mean annual precipitation: 9 to 10 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 190 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Pogue and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pogue

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Parent material: Alluvium mixed with loess over glacial outwash

Typical profile

H1 - 0 to 8 inches: cobbly fine sandy loam
H2 - 8 to 18 inches: cobbly fine sandy loam
H3 - 18 to 24 inches: gravelly sandy loam
H4 - 24 to 60 inches: very cobbly sand

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: 20 to 35 inches to strongly contrasting textural stratification
Drainage class: Somewhat excessively drained

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 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 supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: A

Ecological site: R008XY220WA - Stony Foothills bitterbrush

Hydric soil rating: No

Minor Components

Pogue, stony surface

Percent of map unit: 5 percent

Hydric soil rating: No

Quincy

Percent of map unit: 5 percent

Hydric soil rating: No

Burbank

Percent of map unit: 3 percent

Hydric soil rating: No

Cashmere

Percent of map unit: 1 percent

Hydric soil rating: No

Magallon

Percent of map unit: 1 percent

Hydric soil rating: No

268—Pogue extremely stony fine sandy loam, 3 to 25 percent slopes

Map Unit Setting

National map unit symbol: rgxj

Elevation: 600 to 1,400 feet

Mean annual precipitation: 9 to 10 inches

Mean annual air temperature: 49 to 51 degrees F

Frost-free period: 140 to 190 days

Farmland classification: Farmland of unique importance

Map Unit Composition

Pogue and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pogue

Setting

Landform: Terraces

Landform position (three-dimensional): Riser

Parent material: Alluvium mixed with loess over glacial outwash

Typical profile

H1 - 0 to 10 inches: extremely stony fine sandy loam

H2 - 10 to 15 inches: cobbly fine sandy loam

H3 - 15 to 28 inches: cobbly fine sandy loam

H4 - 28 to 60 inches: very gravelly sand

Properties and qualities

Slope: 3 to 25 percent

Depth to restrictive feature: 20 to 35 inches to strongly contrasting textural stratification

Drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 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 supply, 0 to 60 inches: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): 6e

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: A

Ecological site: R008XY112WA - Shallow Stony sagebrush

Hydric soil rating: No

Minor Components

Burbank

Percent of map unit: 5 percent

Hydric soil rating: No

Magallon

Percent of map unit: 5 percent

Hydric soil rating: No

Quincy

Percent of map unit: 3 percent

Hydric soil rating: No

Cashmere

Percent of map unit: 2 percent

Hydric soil rating: No

274—Quincy loamy fine sand, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: rhlm
Elevation: 600 to 1,400 feet
Mean annual precipitation: 8 to 10 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Quincy and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Quincy

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Parent material: Eolian sands

Typical profile

H1 - 0 to 10 inches: loamy fine sand
H2 - 10 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 3 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: R008XY226WA - Stony Foothills South Aspect bitterbrush
Hydric soil rating: No

Minor Components

Pogue

Percent of map unit: 5 percent

Custom Soil Resource Report

Hydric soil rating: No

Cashmere

Percent of map unit: 5 percent

Hydric soil rating: No

Quincy, bouldrey surface

Percent of map unit: 5 percent

Hydric soil rating: No

427—Torriorthents, very steep

Map Unit Setting

National map unit symbol: rgmr

Elevation: 600 to 1,800 feet

Mean annual precipitation: 7 to 10 inches

Mean annual air temperature: 49 to 51 degrees F

Frost-free period: 140 to 190 days

Farmland classification: Not prime farmland

Map Unit Composition

Torriorthents and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Torriorthents

Setting

Landform: Terraces

Landform position (three-dimensional): Riser

Parent material: Glacial outwash

Typical profile

H1 - 0 to 10 inches: gravelly fine sandy loam

H2 - 10 to 60 inches: very cobbly coarse sand

Properties and qualities

Slope: 25 to 65 percent

Depth to restrictive feature: 10 to 14 inches to strongly contrasting textural stratification

Drainage class: Excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 2 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R008XY220WA - Stony Foothills bitterbrush
Hydric soil rating: No

Minor Components

Pogue

Percent of map unit: 5 percent
Hydric soil rating: No

Quincy

Percent of map unit: 5 percent
Hydric soil rating: No

458—Water

Map Unit Composition

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

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

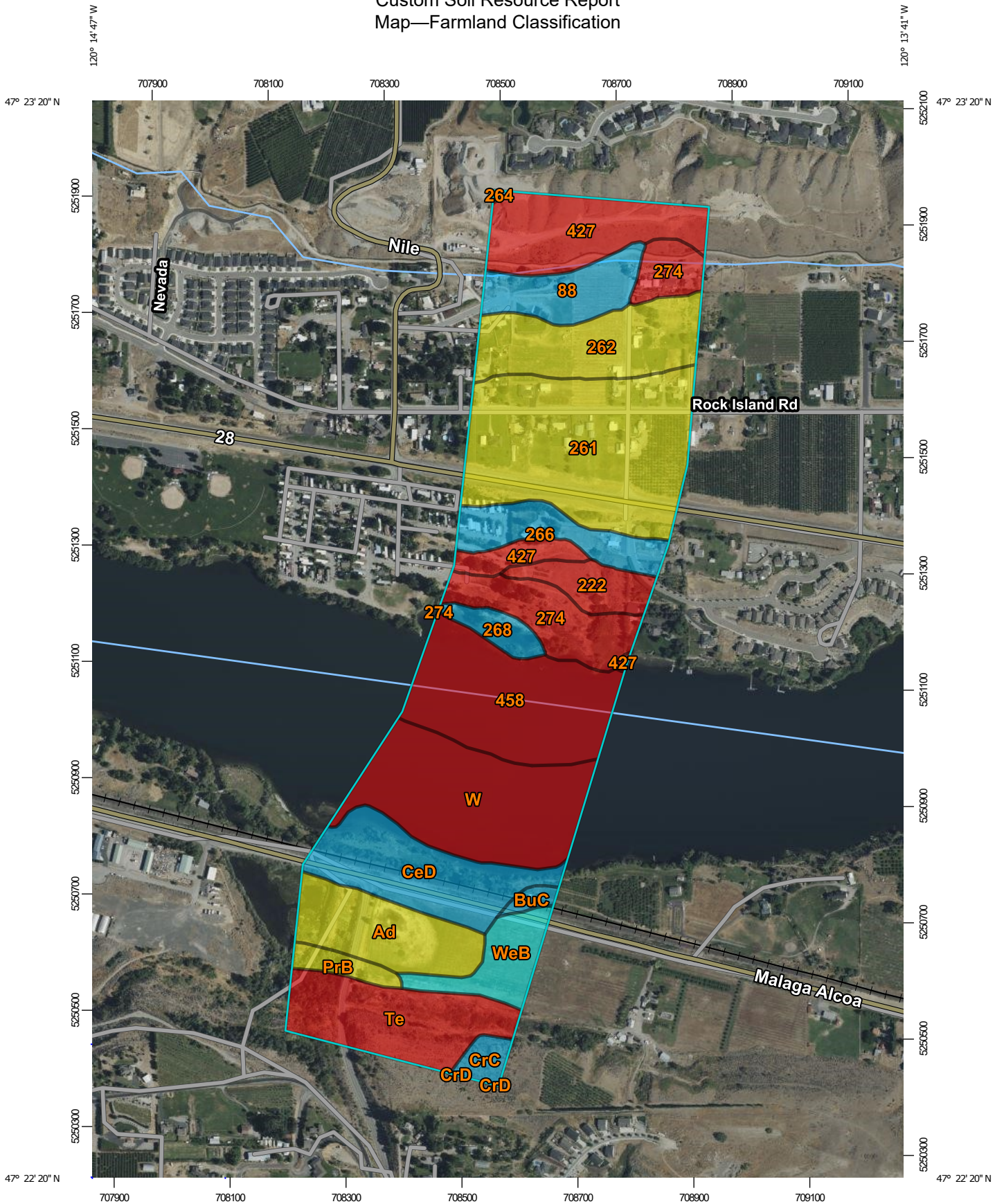
Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

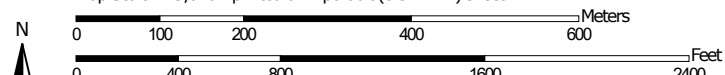
Farmland Classification

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.

Custom Soil Resource Report Map—Farmland Classification



Map Scale: 1:9,020 if printed on A portrait (8.5" x 11") sheet.




Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

Custom Soil Resource Report









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

Custom Soil Resource Report

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

Custom Soil Resource Report

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 reclaimed of excess salts and sodium	Farmland of unique importance Not rated or not available	<p>The soil surveys that comprise your AOI were mapped at scales ranging from 1:12,000 to 1:20,000.</p>
Farmland of statewide importance, if irrigated and drained	Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season	<p>Water Features</p> Streams and Canals	<p>Please rely on the bar scale on each map sheet for map measurements.</p>
Farmland of statewide importance, if irrigated and 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	<p>Transportation</p> Rails Interstate Highways US Routes Major Roads Local Roads	<p>Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)</p>
Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer	Farmland of statewide importance, if warm enough	<p>Background</p> Aerial Photography	<p>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.</p>
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 thawed		<p>This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.</p>
	Farmland of local importance		<p>Soil Survey Area: Chelan County Area, Washington (Parts of Chelan and Kittitas Counties) Survey Area Data: Version 19, Aug 29, 2023</p>
	Farmland of local importance, if irrigated		<p>Soil Survey Area: Douglas County, Washington Survey Area Data: Version 25, Aug 28, 2023</p>
			<p>Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.</p>
			<p>Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.</p>
			<p>Date(s) aerial images were photographed: Aug 3, 2022—Aug 8, 2022</p>
			<p>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.</p>

Custom Soil Resource Report

Table—Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ad	Alluvial land	Prime farmland if irrigated	8.6	6.0%
BuC	Burch fine sandy loam, 8 to 15 percent slopes	Farmland of unique importance	0.7	0.5%
CeD	Cashmont stony sandy loam, 0 to 25 percent slopes	Farmland of unique importance	10.8	7.6%
CrC	Colockum silt loam, 8 to 15 percent slopes	Farmland of unique importance	1.4	1.0%
CrD	Colockum silt loam, 15 to 25 percent slopes	Farmland of unique importance	0.0	0.0%
PrB	Pogue gravelly fine sandy loam, 3 to 8 percent slopes	Prime farmland if irrigated	1.7	1.2%
Te	Terrace escarpments	Not prime farmland	10.7	7.5%
W	Water	Not prime farmland	16.8	11.8%
WeB	Wenatchee silt loam, 3 to 8 percent slopes	Farmland of statewide importance	4.6	3.2%
Subtotals for Soil Survey Area			55.5	38.9%
Totals for Area of Interest			142.8	100.0%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
88	Cashmont gravelly sandy loam, 8 to 15 percent slopes	Farmland of unique importance	5.6	3.9%
222	Logy cobbly sandy loam, 3 to 15 percent slopes	Not prime farmland	3.7	2.6%
261	Pogue fine sandy loam, 0 to 3 percent slopes	Prime farmland if irrigated	23.2	16.2%
262	Pogue fine sandy loam, 3 to 8 percent slopes	Prime farmland if irrigated	10.5	7.4%
264	Pogue gravelly fine sandy loam, 8 to 15 percent slopes	Farmland of unique importance	0.1	0.1%
266	Pogue cobbly fine sandy loam, 0 to 15 percent slopes	Farmland of unique importance	5.5	3.9%
268	Pogue extremely stony fine sandy loam, 3 to 25 percent slopes	Farmland of unique importance	2.1	1.5%
274	Quincy loamy fine sand, 0 to 15 percent slopes	Not prime farmland	9.3	6.5%
427	Torriorhents, very steep	Not prime farmland	11.9	8.4%
458	Water	Not prime farmland	15.5	10.8%
Subtotals for Soil Survey Area			87.3	61.1%

Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Totals for Area of Interest			142.8	100.0%

Rating Options—Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

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Custom Soil Resource Report

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Malaga/Rock Island Industrial Area Crossing Site



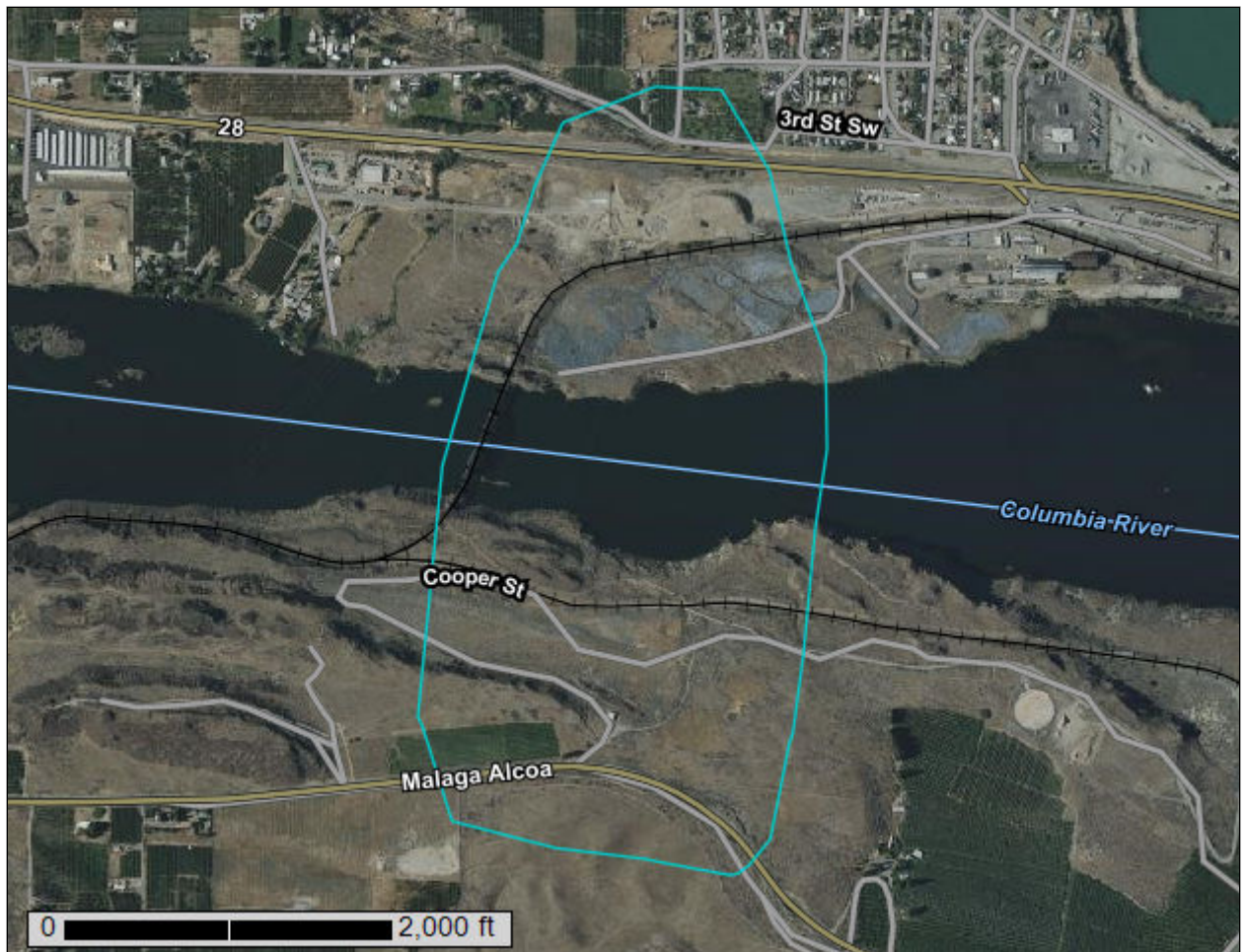
United States
Department of
Agriculture

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 Chelan County Area, Washington (Parts of Chelan and Kittitas Counties), and Douglas County, Washington



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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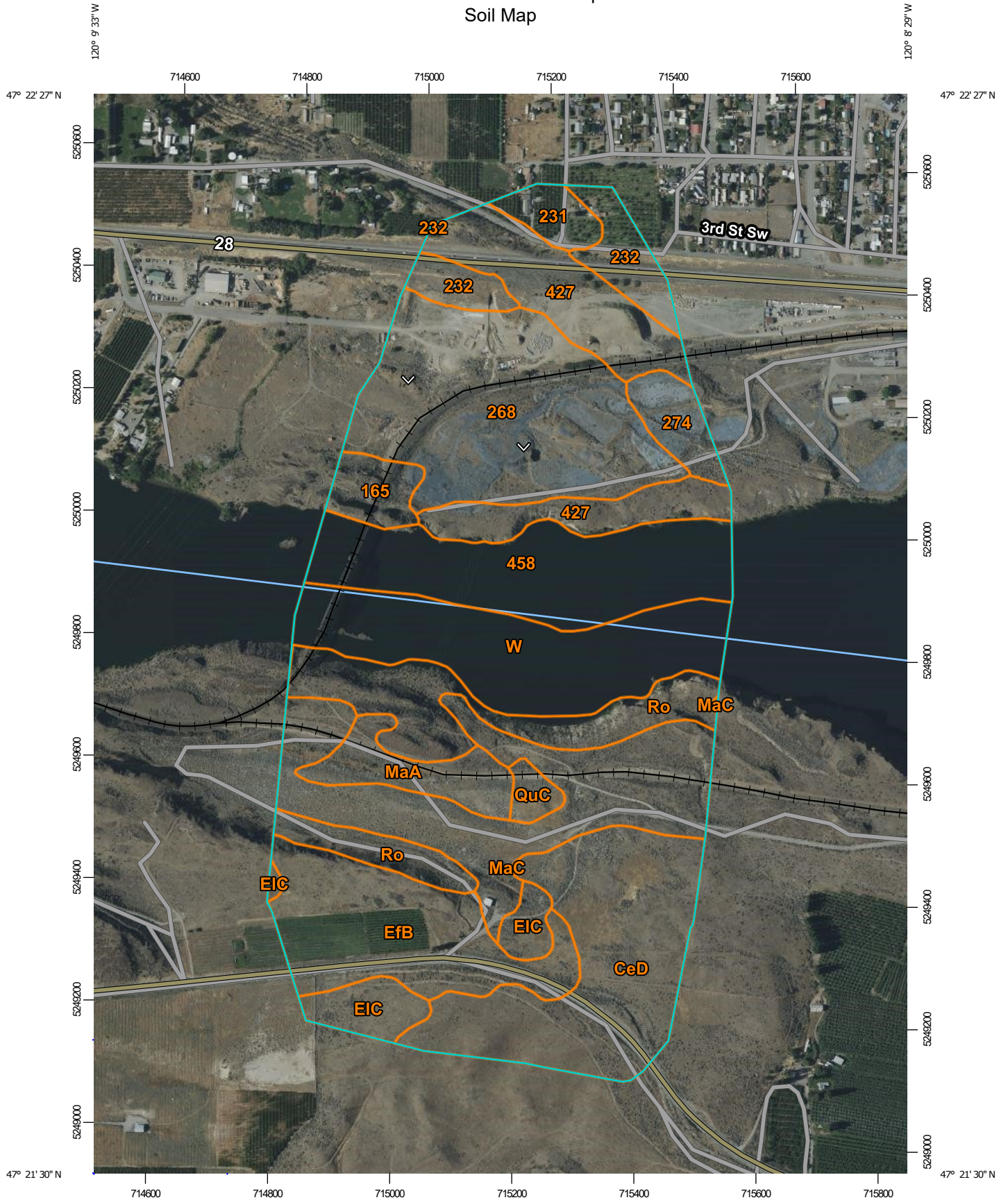
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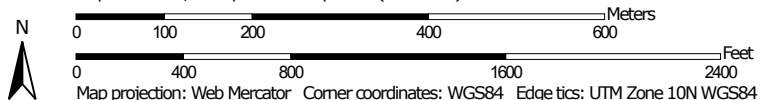
Soil Map

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: 1:8,580 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N 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
-  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 scales ranging from 1:12,000 to 1:20,000.

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: Chelan County Area, Washington (Parts of Chelan and Kittitas Counties)
 Survey Area Data: Version 19, Aug 29, 2023

Soil Survey Area: Douglas County, Washington
 Survey Area Data: Version 25, Aug 28, 2023

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Aug 3, 2022—Aug 8, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

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
CeD	Cashmont stony sandy loam, 0 to 25 percent slopes	26.6	12.4%
EfB	Ellisforde fine sandy loam, 3 to 8 percent slopes	19.4	9.1%
EIC	Ellisforde silt loam, 8 to 15 percent slopes	6.0	2.8%
MaA	Malaga gravelly fine sandy loam, 0 to 3 percent slopes	6.3	2.9%
MaC	Malaga gravelly fine sandy loam, 3 to 15 percent slopes	24.8	11.6%
QuC	Quincy loamy fine sand, 0 to 15 percent slopes	1.6	0.7%
Ro	Rock outcrop	17.7	8.2%
W	Water	22.2	10.4%
Subtotals for Soil Survey Area		124.6	58.0%
Totals for Area of Interest		214.6	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
165	Entiat-Rock outcrop-Torriorthents complex, 30 to 70 percent slopes	3.7	1.7%
231	Malaga gravelly fine sandy loam, 0 to 8 percent slopes	3.0	1.4%
232	Malaga cobbly fine sandy loam, 0 to 8 percent slopes	7.2	3.3%
268	Pogue extremely stony fine sandy loam, 3 to 25 percent slopes	31.8	14.8%
274	Quincy loamy fine sand, 0 to 15 percent slopes	3.9	1.8%
427	Torriorthents, very steep	18.6	8.7%
458	Water	22.0	10.2%
Subtotals for Soil Survey Area		90.1	42.0%
Totals for Area of Interest		214.6	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.

Custom Soil Resource Report

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.

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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.

Chelan County Area, Washington (Parts of Chelan and Kittitas Counties)

CeD—Cashmont stony sandy loam, 0 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2g8s
Elevation: 1,200 to 1,800 feet
Mean annual precipitation: 8 to 11 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Farmland of unique importance

Map Unit Composition

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

Description of Cashmont

Setting

Landform: Terraces, alluvial fans, hillslopes
Landform position (two-dimensional): Footslope
Parent material: Alluvium, glaciofluvial deposits or ablation till

Typical profile

H1 - 0 to 21 inches: stony sandy loam
H2 - 21 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 0 to 25 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 supply, 0 to 60 inches: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: R008XY220WA - Stony Foothills bitterbrush
Hydric soil rating: No

EfB—Ellisforde fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2g9w
Elevation: 400 to 2,100 feet

Custom Soil Resource Report

Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 135 to 190 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Ellisforde

Setting

Landform: Lake terraces
Parent material: Loess over lacustrine deposits

Typical profile

H1 - 0 to 16 inches: fine sandy loam
H2 - 16 to 28 inches: silt loam
H3 - 28 to 60 inches: stratified very fine sandy loam to silt loam

Properties and qualities

Slope: 3 to 8 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 (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R008XY130WA - Loamy sagebrush
Hydric soil rating: No

EIC—Ellisforde silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2g9x
Elevation: 400 to 2,100 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 135 to 190 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Ellisforde and similar soils: 100 percent

Custom Soil Resource Report

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ellisforde

Setting

Landform: Lake terraces

Parent material: Loess over lacustrine deposits

Typical profile

H1 - 0 to 16 inches: silt loam

H2 - 16 to 28 inches: silt loam

H3 - 28 to 60 inches: stratified very fine sandy loam to silt loam

Properties and qualities

Slope: 8 to 15 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 (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 11.6 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: R008XY130WA - Loamy sagebrush

Hydric soil rating: No

MaA—Malaga gravelly fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2gbd

Elevation: 500 to 1,300 feet

Mean annual precipitation: 6 to 10 inches

Mean annual air temperature: 48 to 50 degrees F

Frost-free period: 135 to 195 days

Farmland classification: Not prime farmland

Map Unit Composition

Malaga and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Malaga

Setting

Landform: Terraces

Parent material: Glacial outwash

Custom Soil Resource Report

Typical profile

H1 - 0 to 3 inches: gravelly fine sandy loam
H2 - 3 to 15 inches: gravelly fine sandy loam
H3 - 15 to 19 inches: extremely gravelly sandy loam
H4 - 19 to 60 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat 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 supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: R008XY220WA - Stony Foothills bitterbrush
Hydric soil rating: No

MaC—Malaga gravelly fine sandy loam, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2gbf
Elevation: 500 to 1,300 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 135 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Malaga

Setting

Landform: Terraces
Parent material: Glacial outwash

Typical profile

H1 - 0 to 3 inches: gravelly fine sandy loam
H2 - 3 to 15 inches: gravelly fine sandy loam
H3 - 15 to 19 inches: extremely gravelly sandy loam
H4 - 19 to 60 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 3 to 15 percent

Custom Soil Resource Report

Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat 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 supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R008XY220WA - Stony Foothills bitterbrush
Hydric soil rating: No

QuC—Quincy loamy fine sand, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2gc6
Elevation: 200 to 4,500 feet
Mean annual precipitation: 6 to 12 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 100 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Quincy

Setting

Landform: Terraces
Parent material: Eolian sands

Typical profile

H1 - 0 to 10 inches: loamy fine sand
H2 - 10 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively 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
Calcium carbonate, maximum content: 3 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: A

Ecological site: R008XY226WA - Stony Foothills South Aspect bitterbrush

Hydric soil rating: No

Ro—Rock outcrop

Map Unit Composition

Rock outcrop: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Outcrop

Typical profile

R - 0 to 60 inches: unweathered bedrock

Properties and qualities

Slope: 0 to 90 percent

Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: No

W—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Setting

Landform: Alluvial cones

Douglas County, Washington

165—Entiat-Rock outcrop-Torriorthents complex, 30 to 70 percent slopes

Map Unit Setting

National map unit symbol: rgs6
Elevation: 800 to 2,200 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 145 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Entiat and similar soils: 50 percent
Torriorthents and similar soils: 20 percent
Rock outcrop: 20 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Entiat

Setting

Landform: Plateaus
Landform position (three-dimensional): Side slope
Parent material: Colluvium and residuum weathered from granite

Typical profile

H1 - 0 to 6 inches: gravelly fine sandy loam
H2 - 6 to 11 inches: very gravelly loam
H3 - 11 to 17 inches: very gravelly loam
H4 - 17 to 27 inches: weathered bedrock

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 12 to 20 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 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 supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R008XY120WA - Stony sagebrush
Hydric soil rating: No

Description of Torriorthents

Setting

Landform: Plateaus

Custom Soil Resource Report

Landform position (three-dimensional): Side slope
Parent material: Colluvium weathered from granite

Typical profile

H1 - 0 to 8 inches: very cobbly coarse sandy loam
H2 - 8 to 60 inches: very cobbly coarse sand

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R008XY226WA - Stony Foothills South Aspect bitterbrush
Hydric soil rating: No

Description of Rock Outcrop

Typical profile

R - 0 to 60 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Dinkels

Percent of map unit: 5 percent
Hydric soil rating: No

Rubble land

Percent of map unit: 5 percent
Hydric soil rating: No

231—Malaga gravelly fine sandy loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: rgwp
Elevation: 600 to 1,100 feet
Mean annual precipitation: 7 to 9 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 195 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Malaga

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Parent material: Loess mixed with gravelly glacial outwash

Typical profile

H1 - 0 to 4 inches: gravelly fine sandy loam
H2 - 4 to 12 inches: gravelly fine sandy loam
H3 - 12 to 28 inches: extremely gravelly fine sandy loam
H4 - 28 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 14 to 28 inches to strongly contrasting textural stratification
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 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 supply, 0 to 60 inches: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: R007XY143WA - Sandy Loam
Hydric soil rating: No

Minor Components

Malaga, steeper sloping

Percent of map unit: 5 percent
Hydric soil rating: No

Quincy

Percent of map unit: 5 percent
Hydric soil rating: No

232—Malaga cobbly fine sandy loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: rgwq
Elevation: 600 to 1,100 feet
Mean annual precipitation: 7 to 9 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Malaga and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Malaga

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Parent material: Loess mixed with gravelly glacial outwash

Typical profile

H1 - 0 to 4 inches: cobbly fine sandy loam
H2 - 4 to 12 inches: gravelly fine sandy loam
H3 - 12 to 20 inches: very gravelly fine sandy loam
H4 - 20 to 60 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 14 to 28 inches to strongly contrasting textural stratification
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Custom Soil Resource Report

Available water supply, 0 to 60 inches: Very low (about 2.2 inches)

Interpretive groups

*Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: R007XY449WA - Sandy
Hydric soil rating: No*

Minor Components

Malaga, very stony surface

*Percent of map unit: 5 percent
Hydric soil rating: No*

Malaga, steeper sloping

*Percent of map unit: 5 percent
Hydric soil rating: No*

Quincy

*Percent of map unit: 5 percent
Hydric soil rating: No*

268—Pogue extremely stony fine sandy loam, 3 to 25 percent slopes

Map Unit Setting

*National map unit symbol: rgxj
Elevation: 600 to 1,400 feet
Mean annual precipitation: 9 to 10 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 190 days
Farmland classification: Farmland of unique importance*

Map Unit Composition

*Pogue and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Pogue

Setting

*Landform: Terraces
Landform position (three-dimensional): Riser
Parent material: Alluvium mixed with loess over glacial outwash*

Typical profile

*H1 - 0 to 10 inches: extremely stony fine sandy loam
H2 - 10 to 15 inches: cobbly fine sandy loam
H3 - 15 to 28 inches: cobbly fine sandy loam
H4 - 28 to 60 inches: very gravelly sand*

Custom Soil Resource Report

Properties and qualities

Slope: 3 to 25 percent

Depth to restrictive feature: 20 to 35 inches to strongly contrasting textural stratification

Drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 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 supply, 0 to 60 inches: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): 6e

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: A

Ecological site: R008XY112WA - Shallow Stony sagebrush

Hydric soil rating: No

Minor Components

Burbank

Percent of map unit: 5 percent

Hydric soil rating: No

Magallon

Percent of map unit: 5 percent

Hydric soil rating: No

Quincy

Percent of map unit: 3 percent

Hydric soil rating: No

Cashmere

Percent of map unit: 2 percent

Hydric soil rating: No

274—Quincy loamy fine sand, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: rhlm

Elevation: 600 to 1,400 feet

Mean annual precipitation: 8 to 10 inches

Mean annual air temperature: 49 to 51 degrees F

Frost-free period: 140 to 195 days

Farmland classification: Not prime farmland

Map Unit Composition

Quincy and similar soils: 85 percent

Minor components: 15 percent

Custom Soil Resource Report

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Quincy

Setting

Landform: Terraces

Landform position (three-dimensional): Tread

Parent material: Eolian sands

Typical profile

H1 - 0 to 10 inches: loamy fine sand

H2 - 10 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 3 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: A

Ecological site: R008XY226WA - Stony Foothills South Aspect bitterbrush

Hydric soil rating: No

Minor Components

Pogue

Percent of map unit: 5 percent

Hydric soil rating: No

Cashmere

Percent of map unit: 5 percent

Hydric soil rating: No

Quincy, bouldrey surface

Percent of map unit: 5 percent

Hydric soil rating: No

427—Torriorthents, very steep

Map Unit Setting

National map unit symbol: rgmr

Elevation: 600 to 1,800 feet

Custom Soil Resource Report

Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 140 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Torriorthents

Setting

Landform: Terraces
Landform position (three-dimensional): Riser
Parent material: Glacial outwash

Typical profile

H1 - 0 to 10 inches: gravelly fine sandy loam
H2 - 10 to 60 inches: very cobbly coarse sand

Properties and qualities

Slope: 25 to 65 percent
Depth to restrictive feature: 10 to 14 inches to strongly contrasting textural stratification
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R008XY220WA - Stony Foothills bitterbrush
Hydric soil rating: No

Minor Components

Pogue

Percent of map unit: 5 percent
Hydric soil rating: No

Quincy

Percent of map unit: 5 percent
Hydric soil rating: No

458—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

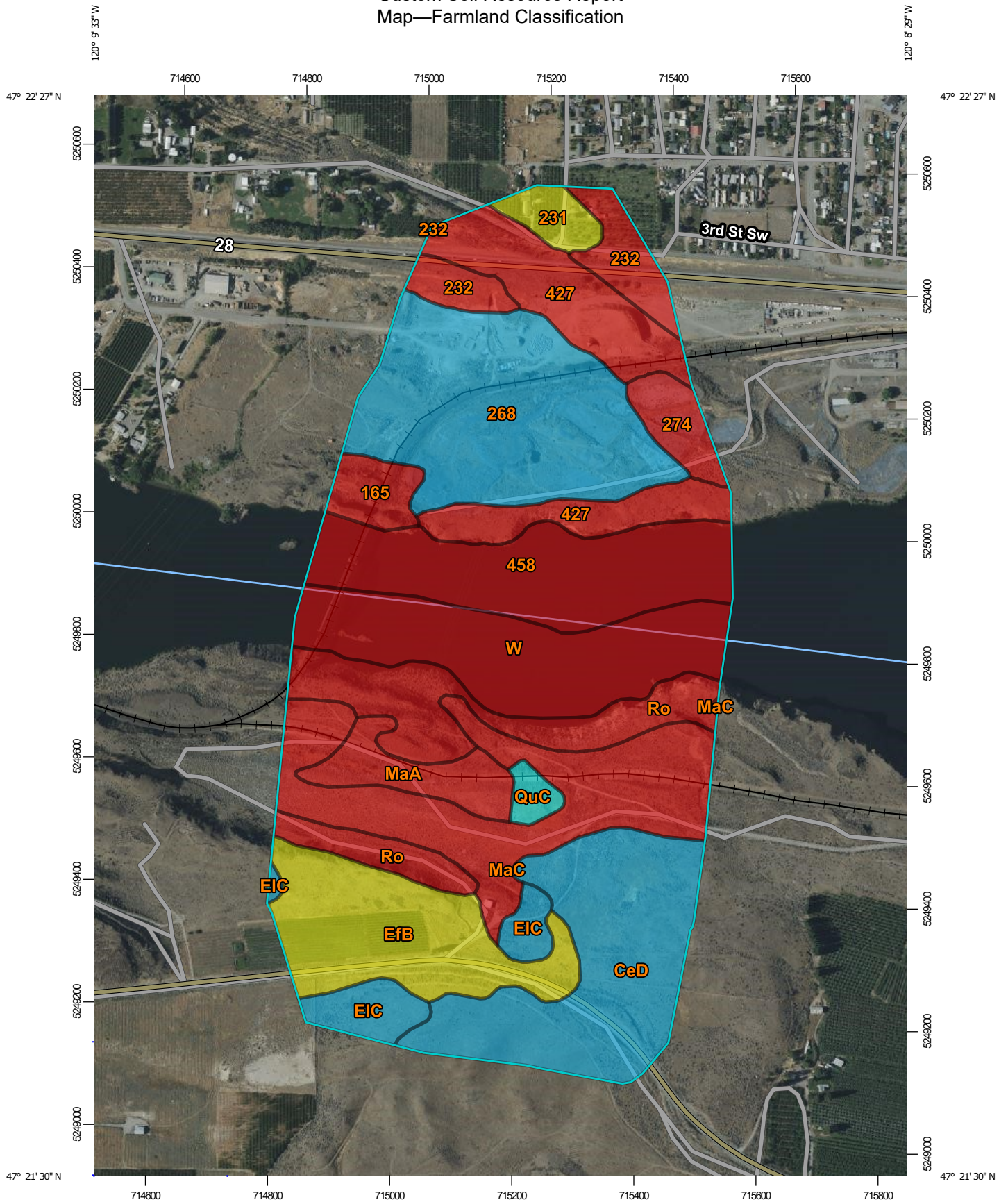
Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

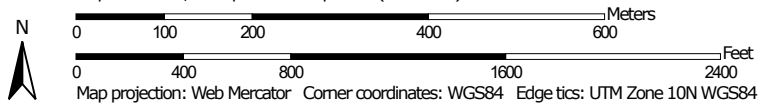
Farmland Classification

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.

Custom Soil Resource Report Map—Farmland Classification




Map Scale: 1:8,580 if printed on A portrait (8.5" x 11") sheet.



Custom Soil Resource Report









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

Custom Soil Resource Report

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

Custom Soil Resource Report

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 reclaimed of excess salts and sodium	Farmland of unique importance Not rated or not available	<p>The soil surveys that comprise your AOI were mapped at scales ranging from 1:12,000 to 1:20,000.</p>
Farmland of statewide importance, if irrigated and drained	Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season	<p>Water Features</p> Streams and Canals	<p>Please rely on the bar scale on each map sheet for map measurements.</p>
Farmland of statewide importance, if irrigated and 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	<p>Transportation</p> Rails Interstate Highways US Routes Major Roads Local Roads	<p>Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)</p>
Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer	Farmland of statewide importance, if warm enough	<p>Background</p> Aerial Photography	<p>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.</p>
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 thawed		<p>This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.</p>
	Farmland of local importance		<p>Soil Survey Area: Chelan County Area, Washington (Parts of Chelan and Kittitas Counties) Survey Area Data: Version 19, Aug 29, 2023</p>
	Farmland of local importance, if irrigated		<p>Soil Survey Area: Douglas County, Washington Survey Area Data: Version 25, Aug 28, 2023</p>
			<p>Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.</p>
			<p>Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.</p>
			<p>Date(s) aerial images were photographed: Aug 3, 2022—Aug 8, 2022</p>
			<p>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.</p>

Table—Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CeD	Cashmont stony sandy loam, 0 to 25 percent slopes	Farmland of unique importance	26.6	12.4%
EfB	Ellisforde fine sandy loam, 3 to 8 percent slopes	Prime farmland if irrigated	19.4	9.1%
EIC	Ellisforde silt loam, 8 to 15 percent slopes	Farmland of unique importance	6.0	2.8%
MaA	Malaga gravelly fine sandy loam, 0 to 3 percent slopes	Not prime farmland	6.3	2.9%
MaC	Malaga gravelly fine sandy loam, 3 to 15 percent slopes	Not prime farmland	24.8	11.6%
QuC	Quincy loamy fine sand, 0 to 15 percent slopes	Farmland of statewide importance	1.6	0.7%
Ro	Rock outcrop	Not prime farmland	17.7	8.2%
W	Water	Not prime farmland	22.2	10.4%
Subtotals for Soil Survey Area			124.6	58.0%
Totals for Area of Interest			214.6	100.0%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
165	Entiat-Rock outcrop-Torriorhents complex, 30 to 70 percent slopes	Not prime farmland	3.7	1.7%
231	Malaga gravelly fine sandy loam, 0 to 8 percent slopes	Prime farmland if irrigated	3.0	1.4%
232	Malaga cobbly fine sandy loam, 0 to 8 percent slopes	Not prime farmland	7.2	3.3%
268	Pogue extremely stony fine sandy loam, 3 to 25 percent slopes	Farmland of unique importance	31.8	14.8%
274	Quincy loamy fine sand, 0 to 15 percent slopes	Not prime farmland	3.9	1.8%
427	Torriorhents, very steep	Not prime farmland	18.6	8.7%
458	Water	Not prime farmland	22.0	10.2%
Subtotals for Soil Survey Area			90.1	42.0%
Totals for Area of Interest			214.6	100.0%

Rating Options—Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

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