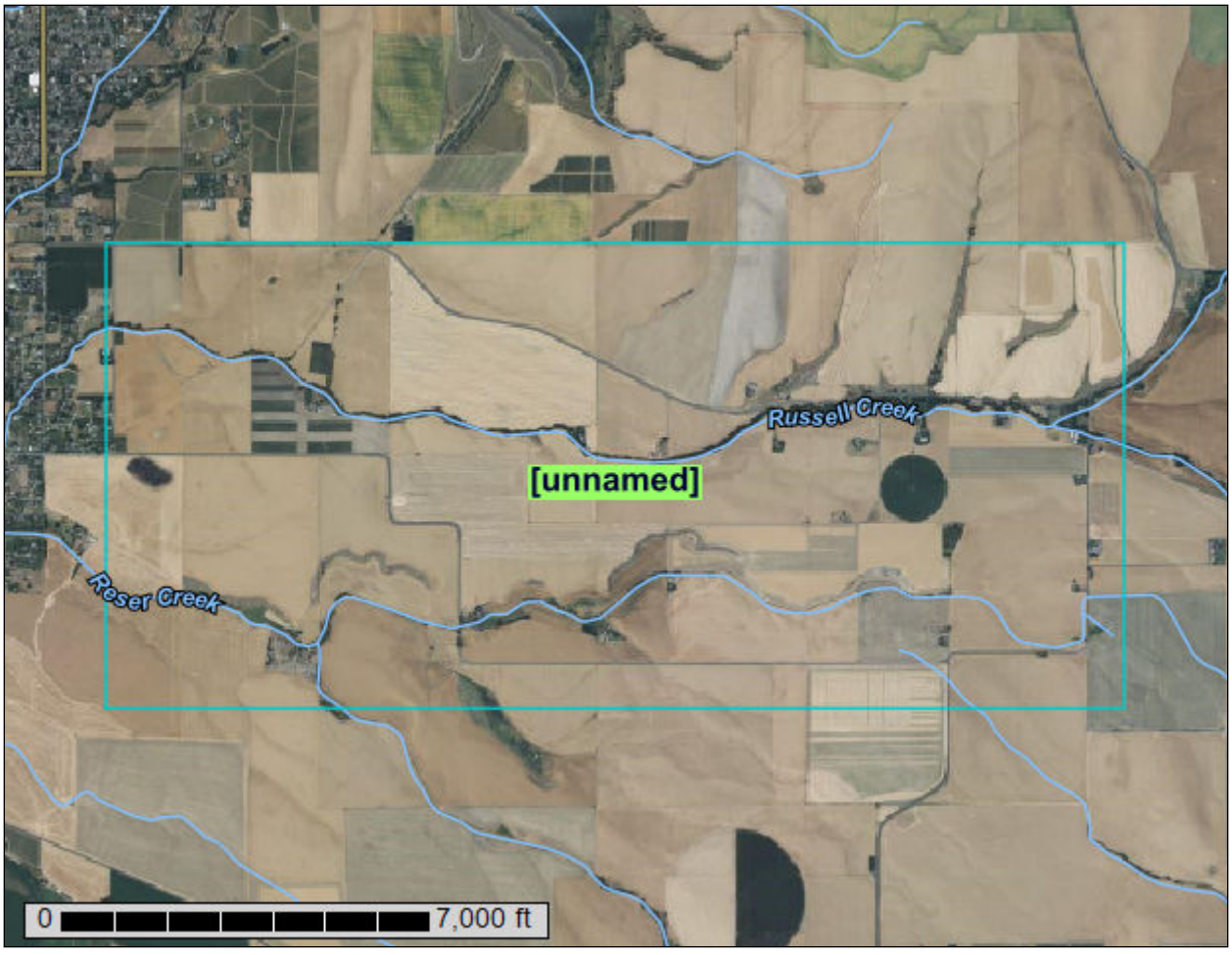
United States Department of Agriculture

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 Walla Walla County Area, Washington



June 4, 2022

Preface

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

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

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

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

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

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

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

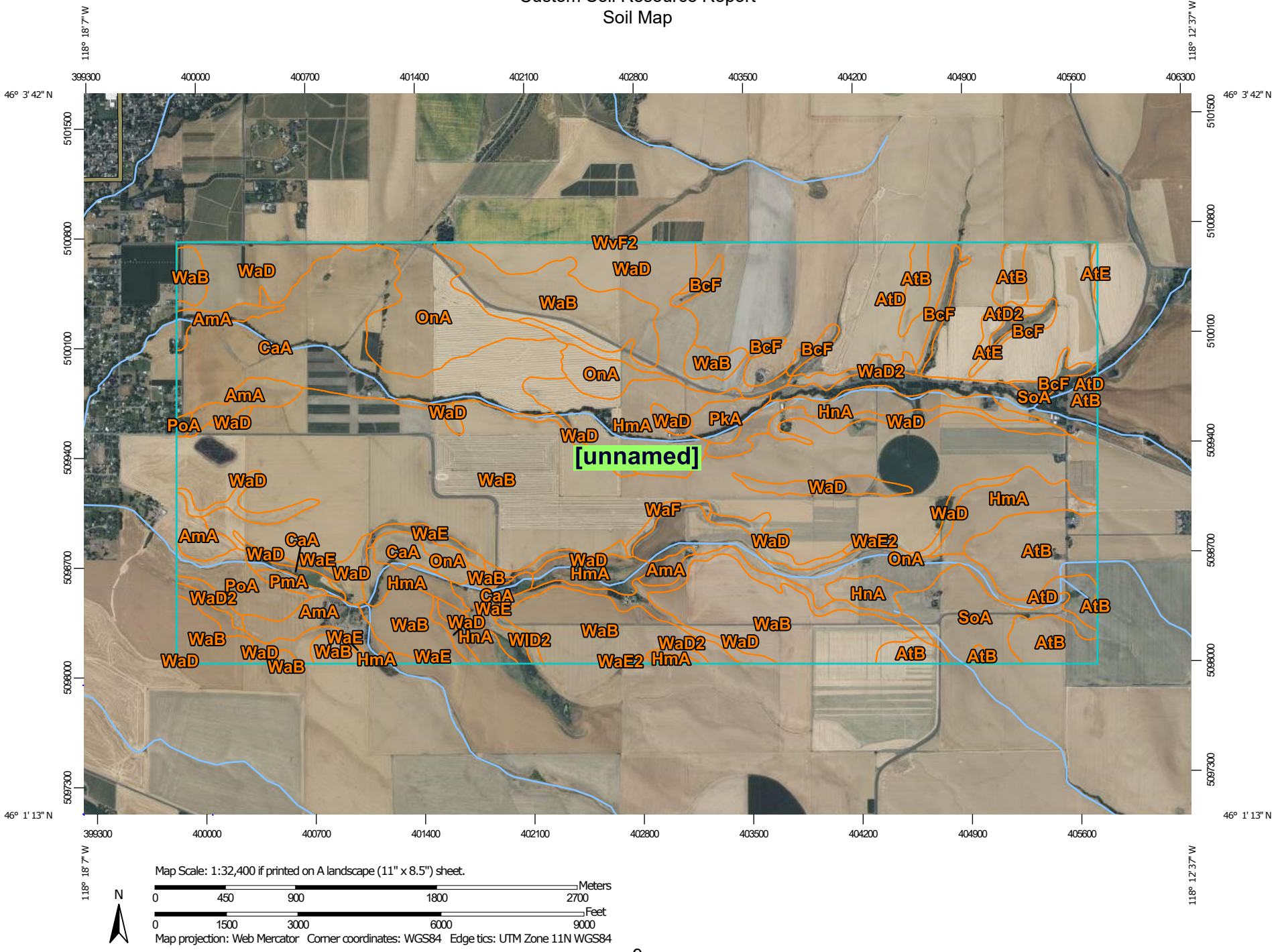
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

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 LEGEND

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

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

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:31,700.

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: Walla Walla County Area, Washington
Survey Area Data: Version 6, Aug 31, 2021

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

Date(s) aerial images were photographed: Jul 22, 2020—Jul 25, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AmA	Ahtanum silt loam, 0 to 3 percent slopes	110.6	2.8%
AtB	Athena silt loam, 0 to 8 percent slopes	173.2	4.4%
AtD	Athena silt loam, 8 to 30 percent slopes	452.5	11.5%
AtD2	Athena silt loam, 8 to 30 percent slopes, eroded	10.5	0.3%
AtE	Athena silt loam, 30 to 45 percent slopes	6.8	0.2%
BcF	Basalt rockland, steep	52.4	1.3%
CaA	Catherine silt loam, 0 to 3 percent slopes	353.8	9.0%
HmA	Hermiston silt loam, 0 to 3 percent slopes	231.2	5.9%
HnA	Hermiston very fine sandy loam, 0 to 3 percent slopes	95.9	2.4%
OnA	Onyx silt loam, 0 to 3 percent slopes	264.0	6.7%
PkA	Patit Creek silt loam, 0 to 3 percent slopes	23.1	0.6%
PmA	Pedigo silt loam, 0 to 3 percent slopes	8.5	0.2%
PoA	Pedigo silt loam, overwashed, 0 to 3 percent slopes	48.4	1.2%
SoA	Snow silt loam, 0 to 3 percent slopes	155.2	3.9%
WaB	Walla Walla silt loam, 0 to 8 percent slopes	1,412.6	35.9%
WaD	Walla Walla silt loam, 8 to 30 percent slopes	460.9	11.7%
WaD2	Walla Walla silt loam, 8 to 30 percent slopes, eroded	27.2	0.7%
WaE	Walla Walla silt loam, 30 to 45 percent slopes	23.0	0.6%
WaE2	Walla Walla silt loam, 30 to 45 percent slopes, eroded	6.1	0.2%
WaF	Walla Walla silt loam, 45 to 60 percent slopes	8.0	0.2%
WlD2	Walla Walla silt loam, lacustrine substratum, 8 to 30 percent slopes, eroded	5.5	0.1%
WvF2	Walvan ashy very fine sandy loam, 30 to 60 percent slopes	0.0	0.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Totals for Area of Interest		**3,930.1**	**100.0%**

Map Unit Descriptions

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

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

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

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

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

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

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

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

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

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

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

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

Walla Walla County Area, Washington

AmA—Ahtanum silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2d5h
Elevation: 700 to 3,000 feet
Mean annual precipitation: 6 to 12 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 140 to 165 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Ahtanum

Setting

Landform: Depressions
Parent material: Loess and pumice alluvium

Typical profile

H1 - 0 to 7 inches: silt loam
H2 - 7 to 34 inches: silt loam
H3 - 34 to 40 inches: cemented silt loam
H4 - 40 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: About 0 to 18 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C/D
Ecological site: R007XY401WA - ALKALI BOTTOM 6-10 PZ
Hydric soil rating: Yes

AtB—Athena silt loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2d5k
Elevation: 1,500 to 3,000 feet
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 130 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Athena

Setting

Parent material: Loess

Typical profile

H1 - 0 to 16 inches: silt loam
H2 - 16 to 48 inches: silt loam
H3 - 48 to 60 inches: silt loam

Properties and qualities

Slope: 0 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 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: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: R009XY102WA - LOAMY 16-24 PZ
Hydric soil rating: No

AtD—Athena silt loam, 8 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2d5l
Elevation: 1,500 to 3,000 feet
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 130 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Athena

Setting

Parent material: Loess

Typical profile

H1 - 0 to 16 inches: silt loam
H2 - 16 to 48 inches: silt loam
H3 - 48 to 60 inches: silt loam

Properties and qualities

Slope: 8 to 30 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
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R009XY102WA - LOAMY 16-24 PZ
Hydric soil rating: No

AtD2—Athena silt loam, 8 to 30 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2d5m

Elevation: 1,500 to 3,000 feet
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 130 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Athena and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Athena

Setting
Parent material: Loess

Typical profile
H1 - 0 to 6 inches: silt loam
H2 - 6 to 38 inches: silt loam
H3 - 38 to 60 inches: silt loam

Properties and qualities
Slope: 8 to 30 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
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups
Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R009XY102WA - LOAMY 16-24 PZ
Hydric soil rating: No

AtE—Athena silt loam, 30 to 45 percent slopes

Map Unit Setting
National map unit symbol: 2d5n
Elevation: 1,500 to 3,000 feet
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 130 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition
Athena and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Athena

Setting

Parent material: Loess

Typical profile

H1 - 0 to 16 inches: silt loam
H2 - 16 to 48 inches: silt loam
H3 - 48 to 60 inches: silt loam

Properties and qualities

Slope: 30 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: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R009XY102WA - LOAMY 16-24 PZ
Hydric soil rating: No

BcF—Basalt rockland, steep

Map Unit Setting

National map unit symbol: 2d5s
Elevation: 200 to 4,000 feet
Mean annual precipitation: 9 to 14 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Rock land, basalt: 60 percent
Lickskillet and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Land, Basalt

Setting

Landform: Canyons

Typical profile

H1 - 0 to 60 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

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

Description of Lickskillet

Setting

Landform: Canyons
Parent material: Loess colluvium and residuum weathered from basalt

Typical profile

H1 - 0 to 9 inches: very cobbly silt loam
H2 - 9 to 19 inches: extremely gravelly loam
H3 - 19 to 23 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 60 percent
Depth to restrictive feature: 12 to 20 inches to lithic bedrock
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: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R008XY201WA - DRY STONY 10-16 PZ
Hydric soil rating: No

CaA—Catherine silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2d61
Elevation: 600 to 4,000 feet
Mean annual precipitation: 11 to 23 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 100 to 195 days
Farmland classification: Prime farmland if drained

Map Unit Composition

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

Description of Catherine

Setting

Landform: Valley floors
Parent material: Loess alluvium

Typical profile

H1 - 0 to 13 inches: silt loam
H2 - 13 to 48 inches: silt loam
H3 - 48 to 60 inches: stratified loamy sand to very gravelly silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: High (about 11.3 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B
Ecological site: R008XY601WA - WET MEADOW 10-16 PZ
Hydric soil rating: No

HmA—Hermiston silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2d7g
Elevation: 200 to 2,500 feet
Mean annual precipitation: 10 to 16 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 130 to 195 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Hermiston

Setting

Landform: Flood plains
Parent material: Loess alluvium

Typical profile

H1 - 0 to 23 inches: silt loam

H2 - 23 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 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: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 15.0
Available water supply, 0 to 60 inches: High (about 11.6 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Ecological site: R008XY402WA - LOAMY BOTTOM 10-16 PZ
Hydric soil rating: No

HnA—Hermiston very fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2d7h
Elevation: 200 to 2,500 feet
Mean annual precipitation: 10 to 16 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 130 to 195 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Hermiston

Setting

Landform: Flood plains
Parent material: Loess alluvium

Typical profile

H1 - 0 to 23 inches: very fine sandy loam
H2 - 23 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 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)
Sodium adsorption ratio, maximum: 15.0
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups
Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Ecological site: R008XY402WA - LOAMY BOTTOM 10-16 PZ
Hydric soil rating: No

OnA—Onyx silt loam, 0 to 3 percent slopes

Map Unit Setting
National map unit symbol: 2d86
Elevation: 700 to 3,200 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 120 to 170 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Onyx and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Onyx

Setting
Landform: Flood plains
Parent material: Loess alluvium

Typical profile
H1 - 0 to 9 inches: silt loam
H2 - 9 to 60 inches: silt loam
H3 - 60 to 70 inches: very gravelly fine sandy loam

Properties and qualities
Slope: 0 to 3 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: OccasionalNone
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups
Land capability classification (irrigated): 3w

Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B
Ecological site: R008XY402WA - LOAMY BOTTOM 10-16 PZ
Hydric soil rating: No

PkA—Patit Creek silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2d8n
Elevation: 500 to 2,500 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 120 to 140 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Patit Creek Variant

Setting

Landform: Flood plains
Parent material: Loess and basalt alluvium over gravelly and cobbley outwash

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 30 inches: cobbly loam
H3 - 30 to 60 inches: very gravelly coarse sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
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: OccasionalNone
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B
Ecological site: R009XY402WA - LOAMY BOTTOM 16-24 PZ
Hydric soil rating: No

PmA—Pedigo silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2d8p
Elevation: 200 to 2,700 feet
Mean annual precipitation: 10 to 20 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 130 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Pedigo

Setting

Landform: Valley floors
Parent material: Loess alluvium

Typical profile

H1 - 0 to 15 inches: silt loam
H2 - 15 to 60 inches: stratified very fine sandy loam to silty clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 30 to 42 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 15.0
Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C
Ecological site: R009XY401WA - ALKALI BOTTOM 16-24 PZ
Hydric soil rating: No

PoA—Pedigo silt loam, overwashed, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2d8q
Elevation: 200 to 2,700 feet
Mean annual precipitation: 10 to 20 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 130 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Pedigo

Setting

Landform: Valley floors
Parent material: Loess alluvium

Typical profile

H1 - 0 to 34 inches: silt loam
H2 - 34 to 60 inches: stratified very fine sandy loam to silty clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 30 to 42 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 15.0
Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C
Ecological site: R009XY401WA - ALKALI BOTTOM 16-24 PZ
Hydric soil rating: No

SoA—Snow silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2dbh
Elevation: 1,800 to 3,400 feet
Mean annual precipitation: 14 to 23 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 100 to 125 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Snow

Setting

Landform: Terraces
Parent material: Loess alluvium

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 36 inches: silty clay loam
H3 - 36 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 3 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: Very high (about 13.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2c
Hydrologic Soil Group: B
Ecological site: R009XY102WA - LOAMY 16-24 PZ
Hydric soil rating: No

WaB—Walla Walla silt loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2dc4

Elevation: 300 to 3,000 feet
Mean annual precipitation: 12 to 15 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 130 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Walla walla and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walla Walla

Setting
Landform: Hills
Parent material: Loess

Typical profile
H1 - 0 to 8 inches: silt loam
H2 - 8 to 52 inches: silt loam
H3 - 52 to 60 inches: silt loam

Properties and qualities
Slope: 0 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 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: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.3 inches)

Interpretive groups
Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: R008XY103WA - COOL LOAMY 10-16 PZ
Hydric soil rating: No

WaD—Walla Walla silt loam, 8 to 30 percent slopes

Map Unit Setting
National map unit symbol: 2dc5
Elevation: 300 to 3,000 feet
Mean annual precipitation: 12 to 15 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 130 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Walla Walla

Setting

Landform: Hills
Parent material: Loess

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 52 inches: silt loam
H3 - 52 to 60 inches: silt loam

Properties and qualities

Slope: 8 to 30 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: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.3 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R008XY103WA - COOL LOAMY 10-16 PZ
Hydric soil rating: No

WaD2—Walla Walla silt loam, 8 to 30 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2dc6
Elevation: 300 to 2,700 feet
Mean annual precipitation: 12 to 15 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 130 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Walla Walla

Setting

Landform: Hills
Parent material: Loess

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 52 inches: silt loam
H3 - 52 to 60 inches: silt loam

Properties and qualities

Slope: 8 to 30 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: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 13.3 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R008XY103WA - COOL LOAMY 10-16 PZ
Hydric soil rating: No

WaE—Walla Walla silt loam, 30 to 45 percent slopes

Map Unit Setting

National map unit symbol: 2dc7
Elevation: 300 to 3,000 feet
Mean annual precipitation: 12 to 15 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 130 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Walla Walla

Setting

Landform: Hills
Parent material: Loess

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 52 inches: silt loam
H3 - 52 to 60 inches: silt loam

Properties and qualities

Slope: 30 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: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R008XY103WA - COOL LOAMY 10-16 PZ
Hydric soil rating: No

WaE2—Walla Walla silt loam, 30 to 45 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2dc8
Elevation: 300 to 2,700 feet
Mean annual precipitation: 12 to 15 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 130 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Walla Walla

Setting

Landform: Hills
Parent material: Loess

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 52 inches: silt loam
H3 - 52 to 60 inches: silt loam

Properties and qualities

Slope: 30 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: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 13.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R008XY103WA - COOL LOAMY 10-16 PZ
Hydric soil rating: No

WaF—Walla Walla silt loam, 45 to 60 percent slopes

Map Unit Setting

National map unit symbol: 2dc9
Elevation: 300 to 3,000 feet
Mean annual precipitation: 12 to 15 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 130 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Walla Walla

Setting

Landform: Hills
Parent material: Loess

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 52 inches: silt loam
H3 - 52 to 60 inches: silt loam

Properties and qualities

Slope: 45 to 60 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: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.3 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R008XY103WA - COOL LOAMY 10-16 PZ
Hydric soil rating: No

WlD2—Walla Walla silt loam, lacustrine substratum, 8 to 30 percent slopes, eroded

Map Unit Setting
National map unit symbol: 2dcf
Elevation: 300 to 3,000 feet
Mean annual precipitation: 12 to 15 inches
Mean annual air temperature: 52 degrees F
Frost-free period: 130 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Walla walla and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walla Walla

Setting
Landform: Hills
Parent material: Loess

Typical profile
H1 - 0 to 7 inches: silt loam
H2 - 7 to 28 inches: silt loam
H3 - 28 to 60 inches: stratified loamy fine sand to silt loam

Properties and qualities
Slope: 8 to 30 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: 30 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.1 inches)

Interpretive groups
Land capability classification (irrigated): 6e

Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R008XY102WA - Loamy 10-16 PZ
Hydric soil rating: No

WvF2—Walvan ashy very fine sandy loam, 30 to 60 percent slopes

Map Unit Setting

National map unit symbol: 2dcj
Elevation: 900 to 2,050 feet
Mean annual precipitation: 12 to 18 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 130 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Walvan

Setting

Landform: Hills, drainageways
Landform position (three-dimensional): Nose slope, interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Redistributed by wind and water volcanic ash and/or loess over older volcanic ash and/or older loess

Typical profile

A1 - 0 to 6 inches: ashy very fine sandy loam
A2 - 6 to 10 inches: ashy very fine sandy loam
C1 - 10 to 28 inches: ashy very fine sandy loam
C2 - 28 to 48 inches: ashy very fine sandy loam
C3 - 48 to 65 inches: ashy silt loam

Properties and qualities

Slope: 30 to 60 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 (0.71 to 7.09 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 12.2 inches)

Interpretive groups

Land capability classification (irrigated): 7e
Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A
Ecological site: R008XY102WA - Loamy 10-16 PZ
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.

Building Site Development

Building site development interpretations are designed to be used as tools for evaluating soil suitability and identifying soil limitations for various construction purposes. As part of the interpretation process, the rating applies to each soil in its described condition and does not consider present land use. Example interpretations can include corrosion of concrete and steel, shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

Dwellings With Basements

Dwellings are single-family houses of three stories or less. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet.

The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification of the soil. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

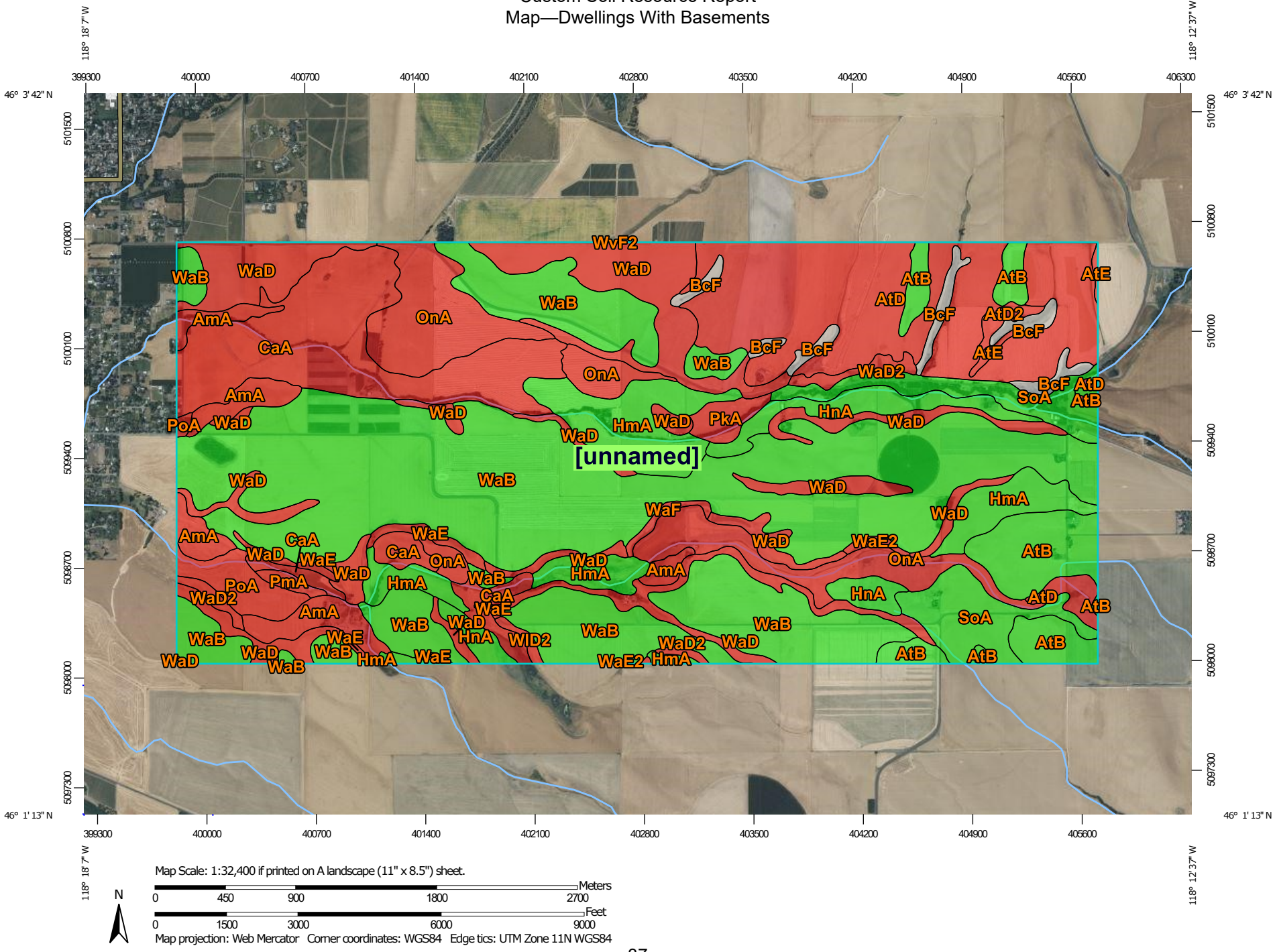
The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the

specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.


118° 18' 7" W
118° 12' 37" W
46° 3' 42" N
46° 1' 13" N
399300
400000
400700
401400
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402800
403500
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406300
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5100100
5099400
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5098000
5097300
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WvF2
WaB
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CaA
WaD2
PoA
PkA
HnA
HmA
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WaF
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PmA
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WlD2
HnA
SoA
Map Scale: 1:32,400 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 450 900 1800 2700
Feet
0 1500 3000 6000 9000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Lines

- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Points

- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:31,700.

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: Walla Walla County Area, Washington
Survey Area Data: Version 6, Aug 31, 2021

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

Date(s) aerial images were photographed: Jul 22, 2020—Jul 25, 2020

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

Tables—Dwellings With Basements

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
AmA	Ahtanum silt loam, 0 to 3 percent slopes	Very limited	Ahtanum (100%)	Flooding (1.00) Depth to saturated zone (1.00) Depth to thin cemented pan (0.16)	110.6	2.8%
AtB	Athena silt loam, 0 to 8 percent slopes	Not limited	Athena (100%)		173.2	4.4%
AtD	Athena silt loam, 8 to 30 percent slopes	Very limited	Athena (100%)	Slope (1.00)	452.5	11.5%
AtD2	Athena silt loam, 8 to 30 percent slopes, eroded	Very limited	Athena (100%)	Slope (1.00)	10.5	0.3%
AtE	Athena silt loam, 30 to 45 percent slopes	Very limited	Athena (100%)	Slope (1.00)	6.8	0.2%
BcF	Basalt rockland, steep	Not rated	Rock land, basalt (60%)		52.4	1.3%
CaA	Catherine silt loam, 0 to 3 percent slopes	Very limited	Catherine (100%)	Flooding (1.00) Depth to saturated zone (0.35)	353.8	9.0%
HmA	Hermiston silt loam, 0 to 3 percent slopes	Not limited	Hermiston (100%)		231.2	5.9%
HnA	Hermiston very fine sandy loam, 0 to 3 percent slopes	Not limited	Hermiston (100%)		95.9	2.4%
OnA	Onyx silt loam, 0 to 3 percent slopes	Very limited	Onyx (100%)	Flooding (1.00)	264.0	6.7%
PkA	Patit Creek silt loam, 0 to 3 percent slopes	Very limited	Patit Creek variant (100%)	Flooding (1.00)	23.1	0.6%
PmA	Pedigo silt loam, 0 to 3 percent slopes	Very limited	Pedigo (100%)	Flooding (1.00) Depth to saturated zone (0.95)	8.5	0.2%
PoA	Pedigo silt loam, overwashed, 0 to 3 percent slopes	Very limited	Pedigo (100%)	Flooding (1.00) Depth to saturated zone (0.95)	48.4	1.2%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
SoA	Snow silt loam, 0 to 3 percent slopes	Not limited	Snow (100%)		155.2	3.9%
WaB	Walla Walla silt loam, 0 to 8 percent slopes	Not limited	Walla Walla (100%)		1,412.6	35.9%
WaD	Walla Walla silt loam, 8 to 30 percent slopes	Very limited	Walla Walla (100%)	Slope (1.00)	460.9	11.7%
WaD2	Walla Walla silt loam, 8 to 30 percent slopes, eroded	Very limited	Walla Walla (100%)	Slope (1.00)	27.2	0.7%
WaE	Walla Walla silt loam, 30 to 45 percent slopes	Very limited	Walla Walla (100%)	Slope (1.00)	23.0	0.6%
WaE2	Walla Walla silt loam, 30 to 45 percent slopes, eroded	Very limited	Walla Walla (100%)	Slope (1.00)	6.1	0.2%
WaF	Walla Walla silt loam, 45 to 60 percent slopes	Very limited	Walla Walla (100%)	Slope (1.00)	8.0	0.2%
WlD2	Walla Walla silt loam, lacustrine substratum, 8 to 30 percent slopes, eroded	Very limited	Walla Walla (100%)	Slope (1.00)	5.5	0.1%
WvF2	Walvan ashy very fine sandy loam, 30 to 60 percent slopes	Very limited	Walvan (100%)	Slope (1.00)	0.0	0.0%
Totals for Area of Interest					**3,930.1**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Not limited	2,068.2	52.6%
Very limited	1,808.9	46.0%
Null or Not Rated	52.4	1.3%
Totals for Area of Interest	**3,930.1**	**100.0%**

Rating Options—Dwellings With Basements

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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