

Chapter 1 - Physical Character Element

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I. INTRODUCTION

Purpose

The Physical Character Element describes the natural physical and biological environment in terms of the opportunities and limitations it presents for growth and development. It incorporates those aspects of the Growth Management Act, including land use element requirements, relating to the natural environment. It identifies the area's resource lands and critical areas, and explains how they will be protected.

Growth Management Act Requirements

The Washington Growth Management Act (GMA) does not require a Physical Character Element in the Comprehensive Plan, but does set a number of requirements with regard to natural systems. These requirements include:

1. Identification, designation and conservation of resource lands.
2. Identification, designation and protection of critical areas.
3. Provisions for the protection of the quality and quantity of groundwater used for public water supplies.
4. Where applicable, a review of drainage, flooding and stormwater run-off in the area covered by the plan and nearby jurisdictions, and guidance for corrective actions to mitigate or cleanse those discharges that pollute the Waters of the State.

~~In the context of GMA, "resource-Resource lands" under GMA~~ are those agricultural, forest, and mineral lands not already characterized by urban growth that have long-term commercial significance for the production of agricultural products, timber or for the extraction of minerals. Agricultural land and forest land located within an urban growth area (UGA) shall not be designated as a resource land of ~~long-long-~~ term commercial significance unless the jurisdiction has enacted a program authorizing transfer or purchase of development rights.

~~As used within the "GMA, eCritical areas" under GMA~~ include: a) wetlands; b) critical aquifer recharge areas used for potable water; c) fish and wildlife habitat conservation areas; d) frequently flooded areas; and e) geologically hazardous areas. ~~Geologically hazardous area include areas susceptible to erosion, sliding, earthquake or other geologic events which pose significant hazards or limitations to the use of land.~~

Applicable Yakima Countywide Planning Policy

The Yakima Countywide Planning ~~Policies-Policy are-is~~ not specifically required by the Growth Management Act to address the physical character of the land or natural resource and critical areas. Nonetheless, several of the policy statements of the Yakima Countywide Planning Policy do specifically address natural resource issues. The following Countywide Planning Policies apply to discussion of the Physical Character Element.

1. When determining land requirements for UGAs, allowance will be made for greenbelt and open space areas and for protection of wildlife habitat and other environmentally sensitive areas. [RCW 36.70A.110(2)] (A.3.7.)
2. Encourage economic growth within the capacities of the region's natural resources, public services and public facilities. (G.3.1)
3. Identify current and potential physical and fiscal capacities for municipal and private water

- systems, wastewater treatment plants, roadways and other infrastructure systems. (G.3.2.a)
4. Identify economic opportunities that strengthen and diversify the county's economy while maintaining the integrity of our natural environment. (G.3.1.b)
 5. Special districts, adjacent counties, state agencies, the tribal government and federal agencies will be invited to participate in comprehensive planning and development activities that may affect them, including the establishment and revision of ~~UGAs~~Urban Growth Areas (UGAs); allocation of forecasted population; regional transportation, capital facility, housing and utility plans; and policies that may affect natural resources. (I.3.)

Relationship to Other Elements or Land Uses

Natural systems are closely tied to both economic development and land use. In an area where the economy is based on the productive use of land for agriculture, the land resource must be conserved to assure continued economic viability of the area. At the same time, land is needed for housing and economic development, including sites suitable for industries related to agriculture. Prevailing winds, flood potential, and soil types make some areas more suitable than others for various land uses. Land use planning needs to allow for protection of critical areas such as wetlands and wildlife habitat.

Critical Areas and Best Available Science

Under GMA RCW 36.70A.060(2), every Washington jurisdiction is required to protect critical areas through the adoption of a Critical Areas Ordinance (CAO). "Critical areas" include the following areas and ecosystems under RCW 36.70A.030(5):

- Wetlands;
- Areas with a critical recharging effect on aquifers used for potable water;
- Fish and wildlife habitat conservation areas;
- Frequently flooded areas; and
- Geologically hazardous areas.

RESOURCE AREAS

"Fish and wildlife habitat conservation areas" does not include such artificial features or facilities as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of and are maintained by a port district or an irrigation district or company.

Grandview adopted a CAO on June 12, 2012 and adopted an update to the CAO on [REDACTED], 2016. The Grandview CAO includes standards and procedures for the protection of critical areas identified in this Physical Character Element as falling within the City of Grandview and its unincorporated UGA.

The As required by the GMA, RCW 36.70A.172, protection of critical areas natural systems within the corporate limits of the City of Grandview will be based on the best available science (BAS), according to the criteria set forth in WAC 365-195-905—~~Criteria for determining which information is the "best available science."~~ The City of Grandview will weigh the most current scientific information from agencies, scientific consultants and published sources to determine the values and functions of natural systems existing in or near the City. The City will base protection of critical areas upon evaluation of the BAS along with scientific studies made available by proponents and opponents of projects in determining how best to protect natural and critical areas. The City of Grandview adopts Yakima County's *Review of Best Available Science for Inclusion in Critical Areas Ordinance, October 2006*, as amended, as a basis for decisions to support protections required by the Critical Area Ordinance and the Shoreline Master

Program.

II. EXISTING CONDITIONS

This section of the Comprehensive Plan reviews the environmental conditions present in the area. In particular, this section will focus on the environmental conditions which may be either hazardous to development or impose limitations that can only be overcome with costly engineering and building techniques. The purpose of this analysis is to identify areas where development would be less efficient and economical, as opposed to areas in which development could occur that would be more compatible with the natural environment. ~~Portions of the narrative for this section are taken from environmental information produced by Huckell/Weinman Associates, Inc.~~

Earth

Physiography

The Grandview area is situated in the lower Yakima River Basin between the Horse Heaven Hills and the Rattlesnake Hills. The area lies within the Walla Walla section of the Columbia Plateau physiographic province. The terrain in the area tends to be gently rolling but is nearly level within the UGA and the City. Slopes within the UGA average zero percent to five percent. Small portions of the UGA have slopes of five percent to 15 percent or more. These areas are generally linear in form and associated with the ravines that tend toward the Yakima River.

The lower Yakima River Basin in the area of Grandview includes recent alluvial (~~associated with rivers~~), lacustrine (~~associated with lakes~~) and eolian (~~associated with wind~~) soil deposits. Native soils consist of normally consolidated lacustrine and eolian soils that typically are over 40 to 50 feet thick. The surficial (~~at the earth's surface~~) soils typically include about 1.5 feet of silt type loam overlying stratified silt loam, loam and very fine sandy loam to depths of 5 feet or more. The native soils are underlain by volcanic bedrock including the Saddle Mountains Basalt of the Columbia River Basalt Group.

The City is nearly level at elevation 750 to 780 feet, with a slope of less than five percent downward and generally west and southwest. The Yakima River passes along the north side of the City wastewater treatment and sprayfield area. No other natural streams pass through Grandview or its UGA. The Sunnyside Irrigation Canal borders a portion of the north edge of the City and other smaller canals and ditches cross the City and the UGA at various points.

Geology

The geologic setting of the Yakima Valley is mostly due to volcanic activity of the Tertiary Period that occurred in the Cascade Mountains and the Columbia Basin. ~~Table 1 outlines the major geologic events associated with the formation of the Yakima Valley landscape as we now know it.~~

During the Miocene Epoch, basalts originating from large fissures, situated in southeastern Washington, flowed westward covering the Columbia Basin and eventually lapping the eastern slope of the Cascade Mountains. Volcanic activity in the Cascade Mountains caused the overlaying of these basalts with the light colored, pumiceous sandstone and conglomerates that make up the Ellensburg Formation. After the Ellensburg Formation, compressional forces pushed the Yakima basalts and overlying sediments into a series of parallel east-west ridges now referred to as the Manastash, Umptanum and Yakima ridges; Saddle Mountains; and the Rattlesnake and Horse Heaven Hills.

The Quaternary Period, primarily the Pleistocene Epoch, saw continued volcanic activity in the Cascades

as well as extensive glacial erosion. Glaciers flowed down the Yakima, Naches, and Tieton River Valleys filling both the Upper and Lower Yakima Valleys with glacial sedimentary deposits. This glacial action has contributed largely to the Valley's existing drainage pattern.

However, not all drainage changes in the area were due to glaciation. Both the Columbia and the Yakima Rivers have left an impressive record of their wanderings over the area. During the tertiary period, the Columbia River skirted across the basin area strewing sand, pebbles, and volcanic debris. It is believed that Satus Pass was once the outlet of the Columbia River until subsequent uplifting of the land forced the river east to its present location. The Yakima River, however, was able to maintain its course, eventually cutting through Selah and Union Gap.

Today, the surficial geology of the Grandview area consists primarily of unconsolidated alluvial, landslide, lacustrine, and glacial deposits in the lower elevations.

Higher elevations in the area consist of Pliocene non-marine sediments that are mostly the Tuffaceous sandstones and conglomerates of the Ellensburg Formation. Rock outcroppings within the area are basalt.

Seismic Hazard

All of Washington State is subject to some degree of risk from seismic events. In addition, there is moderate to strong potential for seismic activity in the Yakima Valley. ~~On the Toppenish Ridge in the past 165,000 years,~~ ~~†~~ There have been three to five earthquakes of up to magnitude 7.1 ~~on the Toppenish Ridge in the past 165,000 years,~~ while Rattlesnake Hills/Ahtanum Ridge has seen three or more seismic events of up to magnitude 6.1 in the past 109,000 years. Both faults are considered active.

The U.S. Geological Survey (USGS) produces shaking hazard maps, which depict the level of earthquake shaking that have a 10 percent chance of being exceeded in a 50-year period. The numbers are expressed ~~in~~ as a percentage of g, or the acceleration of a falling object due to gravity, and range from 0 %g (lowest hazard) to 64+ %g (highest hazard). The City of Grandview's %g is between 16-32%g. Western Washington ranges from 48 to 64%g, while eastern Washington ranges from eight to 16%g.¹

Volcanic Hazard

The sources of potential volcanic hazards within the Grandview area are composite volcanoes of the Cascade Range, such as Mt. St. Helens and Mt. Rainier. Potential hazards from an eruption of a composite volcano include mudflows, floods and tephra (airborne volcanic ash or rock debris). Of these, only tephra from a Mt. St. Helens eruption has an identified potential to affect the area. Of the five principal volcanoes in Washington State, only Mt. St. Helens has experienced major tephra eruptions in the past 13,000 years. Mt. St. Helens has had at least eight large-scale eruptions during that time. During the May 18, 1980, major eruption of Mt. St. Helens, from one to five millimeters of tephra was deposited in the area.

Tephra ejected during another major volcanic eruption of Mt. St. Helens could fall on the Grandview area, depending on the wind direction at the time of the eruption. It is likely that the size of the tephra would be very fine-grained (ash) and cooled because of the distance to Mt. St. Helens. The ash deposit could be up to five centimeters thick and would pose a low potential hazard to human life and health. Injury to humans can occur when ash-contaminated air is inhaled. Property damage occurs from the abrasiveness of ash and resulting impacts on machinery. An ashfall in Grandview could result in a temporary shutdown of operations, but is not likely to significantly damage the facilities.

¹ U.S. Geological Service Earthquake Hazards Program, 2014 Seismic Hazard Maps

Other Hazards

There is no evident landslide or subsurface dissolution hazards, or abandoned underground mine workings in Grandview.

Soils

Soil information is an important tool in both the design and evaluation of different types of development proposals. Soil types react differently to development proposals. Consequently, proper soil information can save developers both time and money in the design stages of their proposals. For example, certain soils make septic tank design extremely costly because of poor drainage qualities.

Additionally, soil types may vary greatly over short distances. To know what the actual soil conditions are on a given property, it is helpful to have an on-site analysis performed by a soil scientist. By requiring soil information to be considered with development proposals, public officials will be able to evaluate the adequacy with which the developer has considered soil conditions.

Major Soil Types in the City of Grandview and UGA

Soil maps and information are developed by the United States Department of Agriculture's Natural Resources Conservation Service. ~~There are three types of soil found throughout Grandview and its proposed UGA: Naches loam, Ashue loam and Warden silt loam.~~

Major soil types in the City and unincorporated UGA are illustrated in Figure 1-1, page 1-7. Major Soil Types in the Urban Growth Area

~~There are three types of soil found throughout Grandview and UGA: Naches loam, Ashue loam and Warden silt loam. There are several soil types found within Grandview and its current UGA.~~ The most predominant soils in Grandview's UGA north of the Yakima River are the Warden soils. The most predominant soils in Grandview's UGA south of the Yakima River are the Starbuck soils. ~~See Figure 1— Soil Types: City of Grandview and Vicinity for specific locations.~~ Warden fine sandy loam occurs in the northerly portion of the City and UGA. This is a very deep, well-drained soil on terraces. Slopes range from zero to eight percent and the elevation is 730 to 850 feet within the City and unincorporated UGA. Permeability of this soil is moderate. Available water capacity is high. Runoff is very slow, and the hazard of water erosion is slight. The hazard of soil blowing is high.

Warden silt loam occurs in the central and southern portion of the City and UGA that is north of the Yakima River. This is a very deep, well-drained soil on terraces. Slopes range from zero to 15 percent and the elevation is 730 to 850 feet within the City and associated UGA. Permeability of this soil is moderate. Available water capacity is high. Runoff is slow, and the hazard of water erosion is slight. Dustiness can be a problem where large areas of soil are exposed.

Starbuck silt loam occurs in the westerly portion of the City and UGA south of the Yakima River. This is a shallow, well-drained soil on uplands. Slopes range from two to 15 percent and the elevation is 650 to 710 feet. Permeability of this soil is moderate. Available water capacity is low. Runoff is medium, and the hazard of water erosion is moderate. Dustiness can be a problem where the soil is exposed.

Starbuck-Rock outcrop complex occurs in the central and eastern portion of the City and UGA south of the Yakima River. This is a shallow, well-drained soil. It formed in loess overlying basalt. Areas of exposed bedrock are interspersed with the Starbuck soils. Slopes range from zero to 45 percent and the

elevation is 650 to 710 feet. Permeability of the soil areas are moderate. Available water capacity is low. Runoff is medium, and the hazard of water erosion is moderate. Dustiness can be a problem where the soil is exposed.

Determination of a soil's agricultural capability, limitations for septic tanks or buildings, roads and streets, is made through interpretations which are generally identified within the USDA Soil Conservation Service's Soil Survey of Yakima County, May 1985. For each soil type and unit, this document provides the interpretations and orders them in an interpretation chart. The interpretation chart displays the influence the soil has on a given use. [Table 1-1, page 1-8](#) ~~Table 2 below~~ shows these interpretations for soil types and units found in the Grandview area.

As indicated in [Table 1-1](#), ~~Table 2~~, the best soil for agricultural production is the Warden silt loam from zero to two percent slopes. This soil is categorized as a capability class I soil indicating that this soil has few limitations for the growing of most kinds of field crops. Other prime farmland soils include the Warden silt loam from ~~2-two~~ to five percent slope and Warden fine sandy loam from zero to five percent. These soils also have the fewest limitations for building.

The Starbuck, Starbuck-Rock series makes up the soils found south of the Yakima River. These soils although not prime farmland, are the least suitable for building and septic tank absorption fields due to the shallow soils and limited capacity of septic tank absorption fields.

Preservation of productive agricultural land is a high priority in Yakima County. As a result, non-farm use of this resource should be kept to a minimum in areas not already experiencing ~~high-high~~ density urban development, and where the combination of past trends and future population projections do not indicate a need for urban expansion in the near future.

Yakima County regulates the type and density of development that should occur in these areas through its zoning and subdivision ordinances. The Yakima ~~County~~ Health District issues septic tank permits for developments based on soil ratings determined through on-site percolation tests. Required lot sizes may vary in residential zones depending on test results and the types of water and sewer systems intended.

Erosion Hazard

Erosion hazard includes the transport of soil by wind and water. The primary mode of transport in the Grandview area is wind. The soils in the Grandview area present low to moderate hazard for water erosion potential. The soils are most susceptible to erosion by water on slopes and if water is allowed to run in an uncontrolled manner across an area.

Figure 1-1. Soil Types within the City of Grandview and UGA

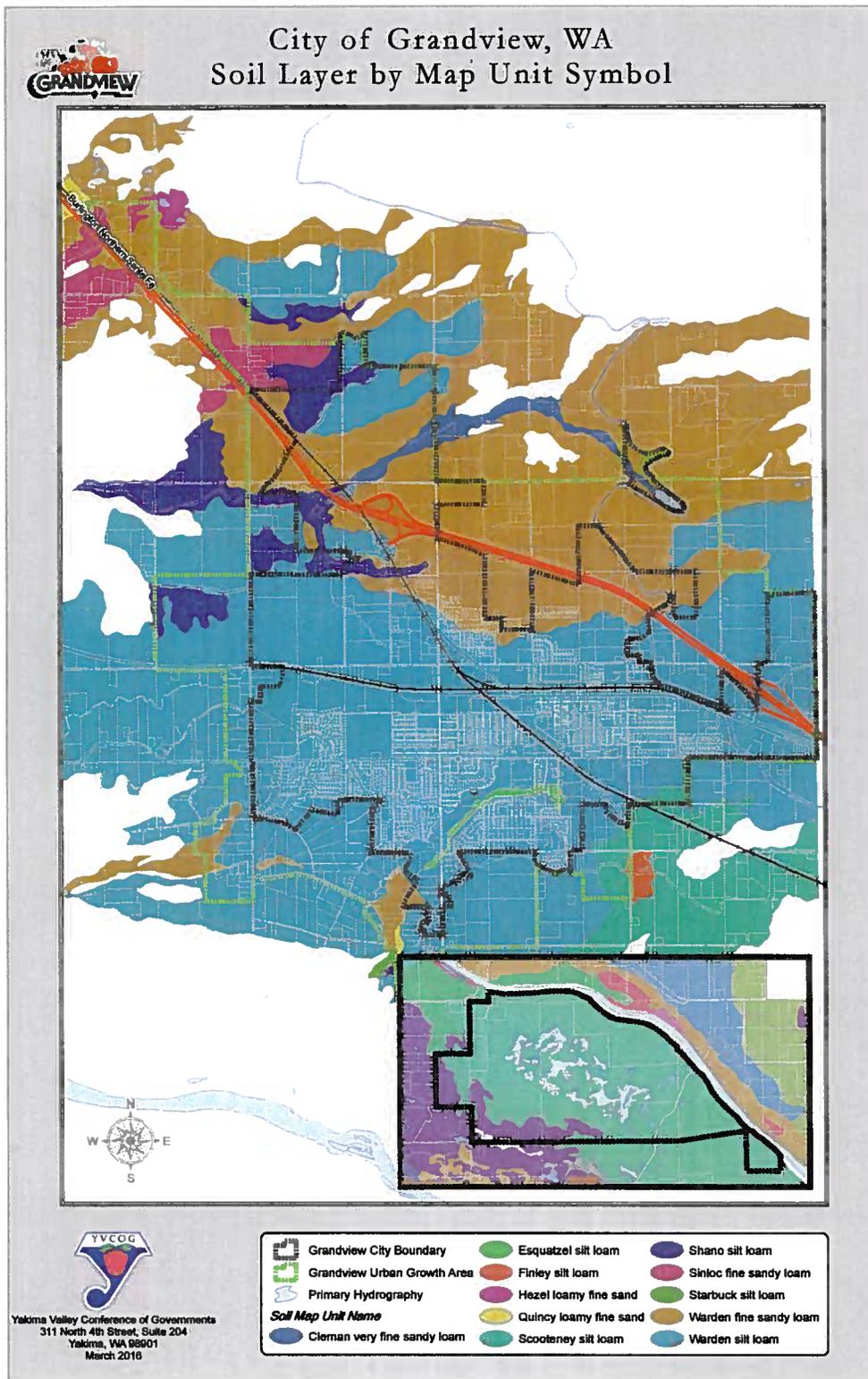


Figure Table 1-1. Soil Classifications and Limitations for the City of Grandview and Vicinity Table 2. Soil Classifications and Limitations for the City of Grandview and Vicinity

SOIL CLASSIFICATION				LIMITATIONS		
Soil Type No.	Series	Slope	Agricultural Rating	Agricultural Capacity	Septic Tank	Buildings
172	Warden fine sandy loam	0-2%	Ile, irrigated	<p>If irrigated, these soils are suited to corn, grain, grapes, hops, mint, peas, and tree fruits. Grasses and legumes are grown for hay, pasture and seed.</p> <p>The main limitation for irrigated crops is the hazard of soil blowing.</p> <p>Meets requirements for designation as prime farmland soil, if irrigated.</p>	Moderate: percs slowly	Soil blowing can be a problem on large building sites
173	Warden fine sandy loam	2-5%	Ile, irrigated and IVe, nonirrigated	<p>If irrigated, these soils are used for corn, grain, grapes, hops, mint, peas, and tree fruits. Grasses and legumes are grown for hay, pasture and seed.</p> <p>The main limitation for irrigated crops are the hazards of soil blowing and water erosion.</p> <p>Meets requirements for designation as prime farmland soil, if irrigated.</p>	Moderate: percs slowly	Soil blowing can be a problem on large building sites
176	Warden silt loam	0-2%	I, irrigated	<p>This unit has few limitations for crops. Irrigation systems are suited in this soil unit.</p> <p>The main irrigated crops are corn, grain, grapes, hops, mint, peas, and tree fruit. Grasses and legumes are grown for hay, pasture, and seed.</p>	This unit has few limitations for septic tank absorption	This unit is well suited to homesite development. Dustiness is a concern during construction on large building sites.

SOIL CLASSIFICATION				LIMITATIONS		
Soil Type No.	Series	Slope	Agricultural Rating	Agricultural Capacity	Septic Tank	Buildings
177	Warden silt loam	2-5%	Ile, irrigated and IVe, nonirrigated	<p>If irrigated, these soils are used for corn, grain, grapes, hops, mint, peas, and tree fruits. Grasses and legumes are grown for hay, pasture and seed.</p> <p>The main limitation for irrigated crops is the hazard of water erosion and low annual precipitation for non-irrigated crops.</p> <p>Meet requirements for designation as prime farmland soil, if irrigated.</p>	Moderate: Percs slowly	Dustiness can be a problem on large building sites
142	Starbuck silt loam	2-15%	IVe, irrigated and VIe, nonirrigated	<p>If irrigated, suitable for irrigated crops such as grain. Grasses and legumes are grown for hay, pasture and seed.</p> <p>The main limitations for irrigated crops are depth to rock, steepness of slope, and the hazard of water erosion.</p> <p>Does not meet requirements for designation as a prime farmland soil.</p>	Shallow depth to bedrock limits the capacity of septic tank absorption fields	Shallow depth to rock hinders excavation
143	Starbuck-Rock outcrop complex	0-45%	VIIIs, nonirrigated	<p>Not suitable for farming. These soils are used for rangeland and wildlife habitat.</p> <p>Does not meet requirements for designation as prime farmland soil.</p>	Severe: depth to rock, slope	Severe: depth to rock, slope

Source: USDA Soil Conservation Service, Soil Survey of Yakima County, May 1985.

Climate

The climate for the Yakima Valley is generally ~~described~~~~characterized~~ as being mild and dry, influenced by both the maritime and continental climates, and modified by the Cascades to the west and Rocky Mountains to the east.

Summers are sunny, with about 85 percent of the possible sunshine, while winters are generally cloudy with only a third of the possible sunshine. Daily temperatures for the summer months range from 65 to 90 degrees, but the dry air results in rapid temperature falls after sunset, providing cool evening temperatures, usually in the 50s. Temperatures of 100 degrees frequently occur in the months of July and August. ~~Table 3 below shows average temperature and precipitation recorded over the period 1951–1978 in nearby Sunnyside.~~

The growing season in the Yakima Valley varies depending on the immediate topography and the type of crops grown. The average date of the last freezing temperature in the spring is April 27, and the first in the fall is October 8. Temperatures below 32 degrees are infrequent during the period May 13 through September 26.

Irrigation is a basic necessity for nearly all crops grown in the Valley. Ample water is available from the snow melt and is collected in storage reservoirs in the Cascade Mountains for summer use in the Valley.

Snowfall is light, with average seasonal snowfall ranging from 10 to 15 inches.

Precipitation in the area follows the West Coast Marine Climate, exhibiting the typical late fall and early winter maximum rainfall. More than 50 percent of the annual precipitation occurs from October through February. Late June, July, and August are usually dry, averaging less than one inch of measurable precipitation during the three month period. It is not uncommon between the months of July and August to have no measurable rainfall (1925 recorded 88 consecutive days without rain). Average annual precipitation for the Grandview-Sunnyside area is between six and eight inches.

Winds are generally light, averaging approximately eight miles per hour on an annual basis. Stronger winds, ranging from 30 to 65 miles per hour, will occasionally occur during the spring months. The prevailing wind direction is from the northwest and west in the winter and west-northwest in the summer. Warm and dry “Chinook” winds characteristically occur several times a year, being most noticeable in the winter, resulting in a 20 to 30 degree rise in temperature within the space of a few hours.

Air Quality

During the winter months, overcast days with minimal sun result in periods of high pressure air stagnation and little air movement (thermal inversion). This thermal inversion condition, which can result in a build-up of pollutants, is accentuated in the Upper Yakima Valley (Yakima-Selah area) due to severe topography (hills rising 800 feet above the valley floor that tend to hinder air movement and increase the potential for thermal inversion). This set of circumstances combines to cause a build-up of particulate pollutants, resulting from space heating, burning from wood stoves, and industrial and transportation activities, bringing PM₁₀ and PM_{2.5} particulate pollution levels within the Yakima metropolitan area in excess of National Ambient Air Quality Standards (NAAQS). A smaller portion of the Yakima metropolitan area also has had past NAAQS violations with regard to carbon monoxide (CO). These are the only pollutants and areas within Yakima County that have had a history of NAAQS violations. Levels of other pollutants in the Yakima Valley are well below national standards.

The absence of major topographical features in the ~~Moxee Valley~~ Grandview area allows for air movement that reduces the potential for thermal inversion, and thus, these areas do not have a history of NAAQS violations due to their better air quality. The frequency of occurrence and severity of thermal inversions varies from year to year. The national Weather Service issues an Air Stagnation Advisory when poor atmospheric dispersion conditions exist and are forecast to persist for 24 hours or more. These advisories, which are issued for all of eastern Washington, are generally issued once or twice a year and typically last one to two days.

Air Quality Regulations and Monitoring

Three agencies have air quality jurisdiction in Yakima County: the United States Environmental Protection Agency (EPA), the Washington State Department of Ecology (WDOE), and the ~~Yakima County Regional Clean Air Authority Agency (YCCAA)~~ YRCAA. The ~~YRCAA~~ YRCAA, along with the EPA and WDOE, has primary air quality jurisdiction in Grandview and all of Yakima County. The ~~YRCAA~~ YRCAA has adopted the National Ambient Air Quality Standards (NAAQS) established by the EPA. The compounds identified in the NAAQS are termed “priority pollutants.” Three priority pollutants are of interest in the Yakima County area: particulates, carbon monoxide and ozone.

Particulate Matter

Particulate matter consists of fine particles of smoke, dust, pollen or other materials that remain suspended in the atmosphere for a substantial period of time. PM₁₀ is fine particulate matter, defined as smaller than 10 micrometers (µm) in diameter. Particles less than 2.5 µm in diameter, called PM_{2.5}, ~~pose a health concern because they~~ can be inhaled and accumulate deep in the lungs. They are called “fine” particles and pose the greatest health concerns. In 2012, the U.S. Environmental Protection Agency (EPA) strengthened the NAAQS for fine particles (PM_{2.5}) to 12.0 micrograms per cubic meter (µg/m³), while retaining the existing standards of 150 µg/m³ for PM₁₀. According to Ecology, the lower Yakima Valley does not exceed the NAAQS standards for PM_{2.5}. The YRCAA maintains one air quality monitoring station in the lower Yakima Valley. ~~This station is located in~~ in Sunnyside at Harrison Middle School (approximately 6.75 miles northwest of Grandview’s City center). ~~In 2014, the last full year of sampling, PM_{2.5} concentrations averaged 17 µg/m³. This average is close to the Yakima metropolitan area annual average, but there are significant differences in the seasonal values with the Yakima metropolitan area routinely exceeding NAAQS standards in the winter months. These monitors are not intended to determine compliance with NAAQS standards.~~

Carbon Monoxide

Carbon monoxide (CO) is an air pollutant generally associated with transportation sources. Carbon monoxide also is generated by processes involving incomplete fuel combustion, including home heating appliances and residential wood burning. Carbon monoxide pollution impacts are usually localized. The highest ambient CO concentrations often occur near congested roadways and intersections during periods of low temperatures, light winds, and stable atmospheric conditions.

Because the EPA and the YRCAA do not operate any CO monitoring stations in the lower Yakima Valley, it is not possible to determine CO concentrations for the Grandview area. However, because the traffic volumes on surface streets in the immediate vicinity are relatively low and rarely result in congestion, CO levels are not anticipated to exceed NAAQS standards. In addition, CO concentrations have been decreasing in many areas due to more stringent vehicle emission standards for newer cars and the gradual replacement of older, more polluting vehicles.

Ozone

Ozone is primarily a product of regional (urban) motor vehicle traffic. It is created during warm sunny weather when photochemical reactions occur involving hydrocarbons and nitrogen oxides. Unlike carbon monoxide, however, ozone and other reaction products do not reach their peak levels closest to the source of emissions, but rather at downwind locations affected by the urban air plume after the primary pollutants have had time to mix and react under sunlight.

~~The Lower Yakima Valley where Grandview is located is not considered an ozone-producing area; Because the City of Grandview is not located in the proximity to an ozone producing urban area, therefore, the EPA and the YRCAA do not monitor ozone in the Lower Yakima Valley.~~

Regional NAAQS Violations

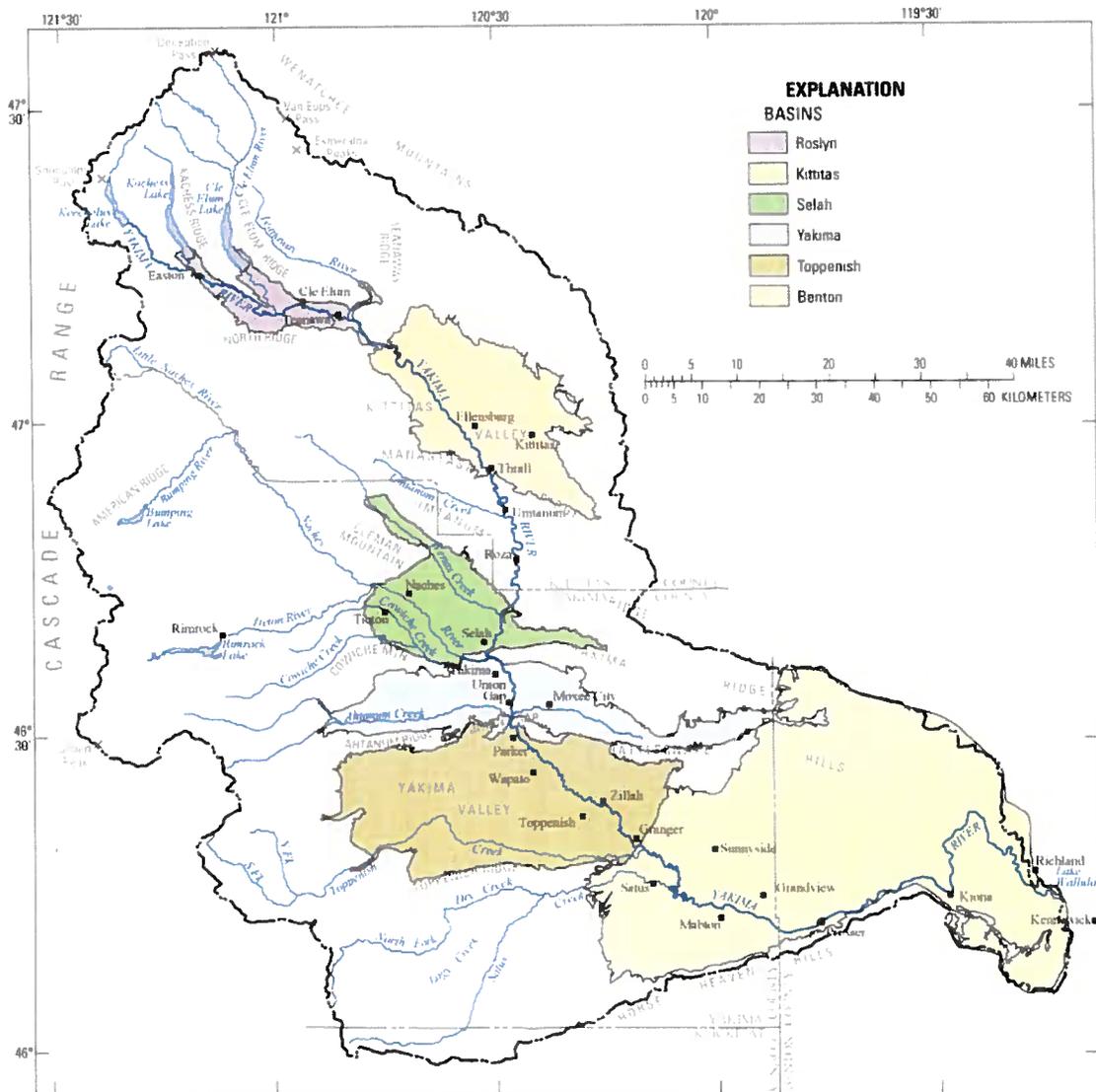
The upper Yakima Valley metropolitan area (Yakima, Selah, Union Gap) historically has had air quality problems related to PM₁₀ and carbon monoxide (CO). The PM₁₀ problems typically occur during the winter months when wood smoke and transportation pollution builds up due to the metropolitan area's topography (valley surrounded by steep hills) and thermal inversions. This set of circumstances causes a PM₁₀ pollution levels in the Yakima metropolitan area to periodically exceed NAAQS. Historical violations of NAAQS has led to portions of the Yakima metropolitan area being designated as non-attainment for both PM₁₀ and CO. Currently, the Yakima metropolitan area is in attainment for both pollutants and operating under Limited Maintenance Plans.

The absence of major topographical features in the lower Yakima Valley, particularly in the relatively flat Grandview area, allows for improved air movement. Increased air circulation reduces the potential for thermal inversions and thus Grandview has not had the same problems that the Yakima metropolitan area has had with regard to PM₁₀ and CO pollution. Because of this, Grandview ~~was located outside~~ is not part of the designated non-attainment areas and is not included in the current Limited Maintenance Plans for either PM₁₀ or CO.

Water Resources

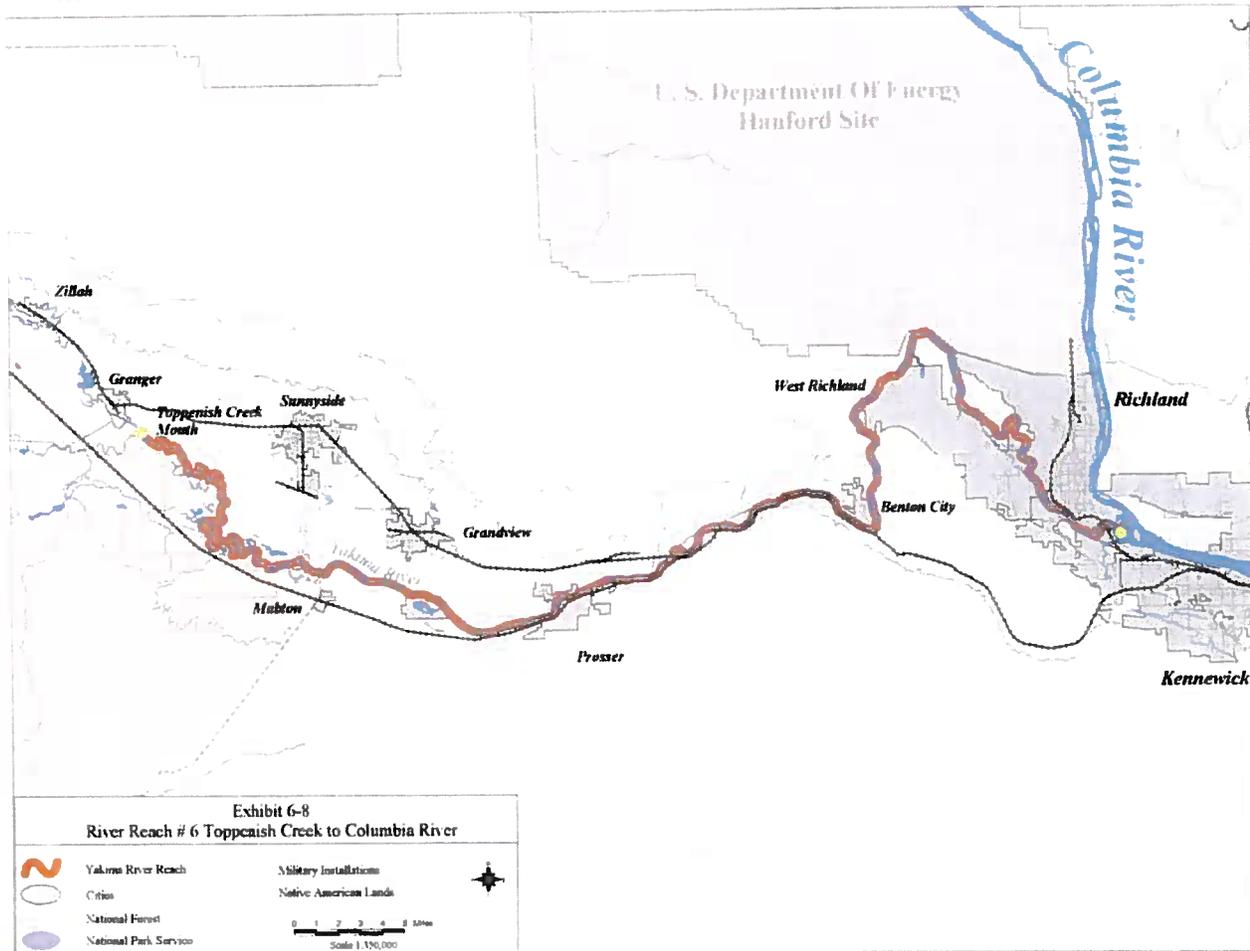
Grandview is located in the Benton sub-basin within the Yakima basin of the Yakima River Basin aquifer system, as designated by the U.S. Geological Survey (Figure 1-2). Grandview is most closely associated with Reach #6 of the Yakima River (Figure 1-3). This reach of the Yakima River runs from the mouth Toppenish Creek to the mouth of the Yakima River at the Columbia River in the Tri-Cities. Groundwater

Figure 1-2. Structural Basins within the Yakima River Basin Aquifer System



Source: U.S. Geological Survey. 2009. Hydrogeologic Framework of the Yakima River Basin Aquifer System, Washington, Report 2009-5152.

Figure 1-3. Reach #6 of the Yakima River, Yakima River Basin



Source: Watershed Management Plan Yakima River Basin. January 2003. Yakima River Basin Watershed Planning Unit and Tri-County Water Resources Agency, prepared by Economic and Engineering Services, Inc.

Groundwater

~~The Yakima Basin is divided into six independent groundwater basins. They are (from north to south): Roslyn, Kittitas, Upper Naches, Cold Creek, Upper Yakima and Lower Yakima basins. These groundwater basins occupy structurally low valleys separated by ridges. Geologic materials that are able to store and transmit groundwater are called aquifers. The Yakima River Basin has three major aquifer systems: the shallow, unconfined aquifer, near the surface; the post-basalt aquifer, somewhat deeper; and the basalt aquifer, the deepest. One or more of these systems may be present in a given sub-basin at a given location.~~

The shallow aquifer is found along Valley floors and is present throughout much of Grandview and its UGA. The post-basalt aquifer underlies much of the Lower Yakima basin. The basalt aquifer also underlies the entire basin. Groundwater flows in the post basalt aquifer are generally southerly. Flows in the basalt aquifer are generally south-southwesterly. Groundwater occurs within the unconsolidated

~~surficial deposits in most of the major stream and river valleys in the Yakima Basin. Groundwater conditions are generally unconfined (at atmospheric pressure) and influenced (hydraulically connected) by water levels in nearby streams, lakes, or rivers.~~

In the lower Yakima Basin, aquifers are the main source of groundwater for residences using individual wells. The depth of wells using aquifers ranges from approximately 10 to 200 feet below ground surface. Wells constructed in the unconsolidated sediments typically produce water at a rate of less than 100 gallons per minute (gpm), though production rates of up to 5,000 gpm are reported for wells in some areas.

~~Potential for groundwater contamination in these shallow aquifers is high, especially near ditches, canals and the Yakima River. Care must be taken to avoid contamination of groundwater when shallow wells are used in conjunction with septic tanks, as it is possible for septic effluent to seep into the well water supply. This condition typically occurs during peak irrigation periods in areas with high water tables.~~

Groundwater systems are replenished (recharged) by the addition of water to the zone of saturation (aquifer) through precipitation, runoff and infiltration from surface water bodies. An area in which water reaches an aquifer by surface infiltration, and where there is a downward component of hydraulic head (pressure head), is considered a recharge area. The likelihood that water will infiltrate and pass through the surface materials to recharge the underlying aquifer system (recharge potential) is dependent on a number of relatively static physical conditions, including soil permeability, surficial geological materials, depth to water and topography.

Potential for groundwater contamination in these shallow aquifers is high, especially near ditches, canals and the Yakima River. Care must be taken to avoid contamination of groundwater when shallow wells are used in conjunction with septic tanks, as it is possible for septic effluent to seep into the well water supply. This condition typically occurs during peak irrigation periods in areas with high water tables.

~~In the Yakima Basin, the main sources of aquifer recharge are from infiltration of precipitation and irrigation water; seepage losses from ditches, canals and rivers; and upward migration of water from lower aquifers. Groundwater discharges from aquifers are into rivers and other water bodies, or through evapotranspiration, pumping and upward flow of water into the shallower aquifers. The Lower Yakima Basin in the Grandview area possesses a moderate surficial recharge potential. The primary recharge zones for the basalt aquifers, are along ridges and in upland areas where basalt is exposed to the surface. Most of the infiltration for basalts occurs where fractures, interbeds, and other permeable zones intersect the ground surface.~~

Critical Aquifer Recharge Areas

Groundwater systems are replenished (recharged) by the addition of water to the zone of saturation (aquifer) through precipitation, runoff, and infiltration from surface water bodies. A recharge area is an area where surface water resulting from precipitation reaches an aquifer by surface infiltration. The likelihood that water will infiltrate and pass through the surface materials to recharge the underlying aquifer system (recharge potential) is dependent on a number of relatively static physical conditions. These conditions include soil permeability, surficial geological materials, depth to water and topography.

In general, the aquifers in the Yakima River Basin are recharged by precipitation, infiltration of surface water, irrigation water, seepage losses from ditches, canals and rivers, and upward migration of water

from lower aquifers. Groundwater discharges into rivers, lakes and streams, or through evapotranspiration, pumping, and upward flow of water into the shallower aquifers. ~~As Figure 1-4 (page 1-18) Figure 1.4 shows, nearly all of the~~ the critical aquifer recharge areas in the City of Granger Grandview and UGA, with estimated areas of moderate, high and extreme susceptibility to contamination, in addition to wellhead protection areas. ~~has~~ The CARA data was developed by Yakima County based on BAS, a high recharge potential.

Groundwater Quality

Water quality considerations vary for these different uses. For example, the quality of groundwater in the Yakima Basin is rarely a limitation if the water is used for agricultural purposes. However, groundwater quality must be much higher for drinking water purposes, and in some cases requires treatment to meet state and federal drinking water standards.

Groundwater is the main source of drinking water supplies in the Yakima River Basin, both for public water supplies, and individual domestic wells. With the exception of the Cities of Yakima and Cle Elum, all of the cities and unincorporated communities rely on groundwater for their indoor, domestic water supplies. Degradation of groundwater quality can pose public health threats, raise the cost of treating municipal supplies, and potentially force abandonment or limit the use of supplies.

The State's groundwater criteria serve as a baseline and reference to establish trends in water quality conditions. ~~The State's regulation in~~ WAC 173-200 establishes the criteria for all groundwater, based on the premise that it may be used for drinking water. In addition, the federal government has established National Primary Drinking Water Standards, which apply to water supplies delivered to the public by the public water systems.

The *Lower Yakima Valley Groundwater Quality: Preliminary Assessment (2010)* noted that groundwater quality can be affected by a wide variety of activities which introduce pollutants into the subsurface. Key parameters relative to drinking water supplies include fecal indicator bacteria, nutrients such as nitrate, and organic chemicals such as pesticides and industrial chemicals. Regulatory agencies across the U.S. have identified the categories of sources listed below:

- Natural contamination/dissolved salts and minerals (including arsenic and radon, which are the subject of current regulatory activity at the federal level)
- Point source contamination at the wellhead
- Septic systems
- Leaking underground storage tanks
- Application of fertilizers or pesticides
- Application of manure to agricultural lands or gardens
- Chemical or fuel spills
- Leaching from landfills
- Burial or dumping of wastes

Each of these sources is likely to be present in some degree within the Yakima River Basin. Groundwater quality problems such as elevated levels of nitrates occur in the Yakima River Basin in locales where the following two conditions are present: 1) there is relatively dense development that is not served by public sewer systems, and 2) there is a shallow water table. In addition, elevated nitrate levels may occur in areas

where irrigated agriculture is present in combination with a shallow water table.

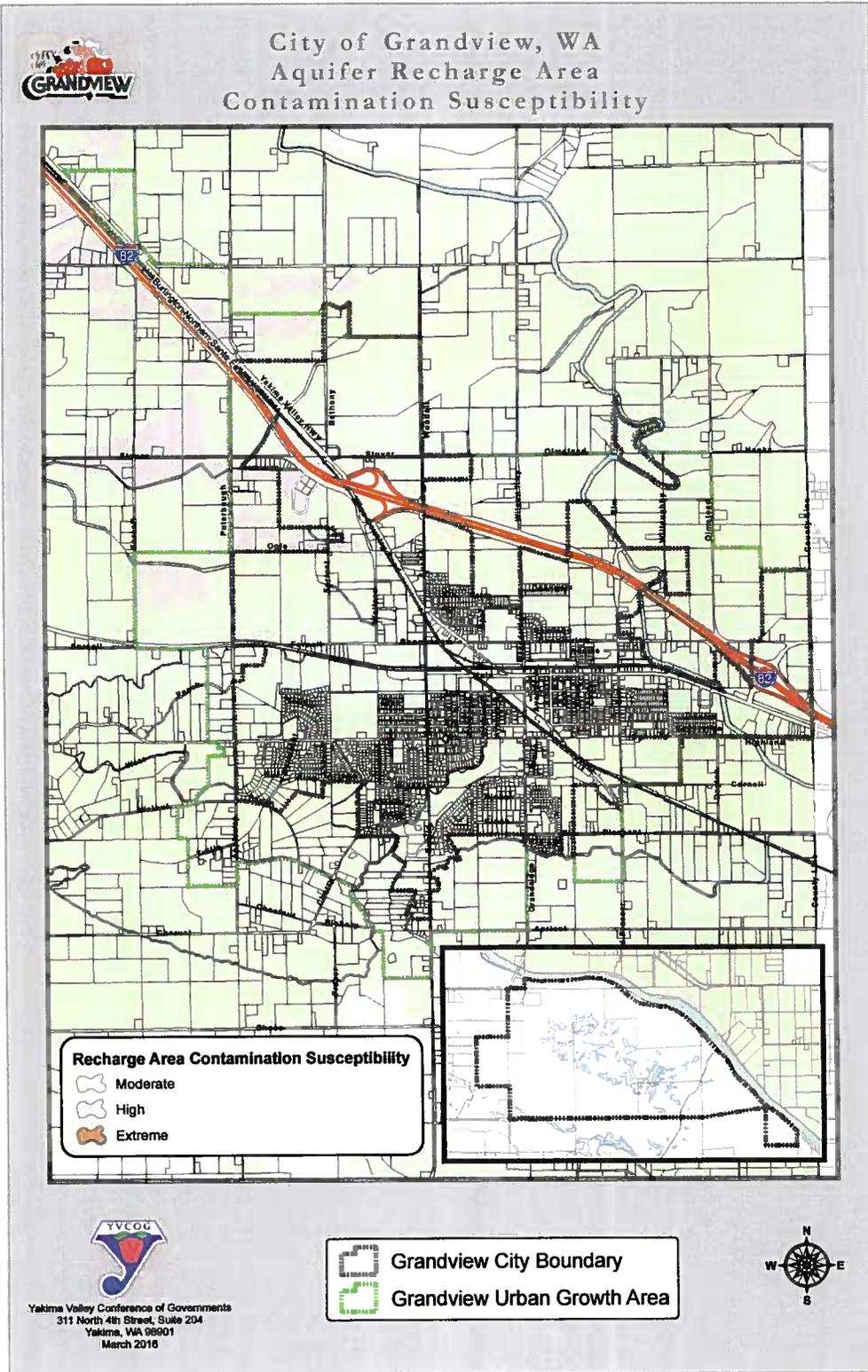
Yakima County does not actively track groundwater quality, and groundwater quality monitoring is not occurring on a regional basis within the Yakima River Basin. Where localized problems have been identified, monitoring activities have sometimes been implemented. In the absence of more comprehensive, long-term monitoring data, trends are unlikely to be quantifiable. In addition, if certain parameters have received little attention, they may pose a threat to drinking water supplies that goes undetected. This may be a limitation for watershed planning in terms of determining a safe and reliable water supply for municipal and domestic purposes.

~~Large and m~~Medium-sized public water systems (serving 10,000-100,000 people) such as the City of Grandview's have the ability to monitor, manage and protect the quality of their groundwater supplies. However, ~~small water systems, like the City of Grandview's, are dominated by some~~ individual households still rely~~ing~~ on their own wells for drinking water. Shallow and/or unprotected groundwater supplies are more susceptible to groundwater contamination, particularly from nitrates, than deep groundwater supplies. The USGS compiled well depth information for Yakima, Kittitas, and Benton Counties, and found that 50% of all wells were less than 151 feet deep. ~~According to the YBWRA, wells in the lower Yakima Valley, including Grandview, tend to be shallow, with a depth of 51 to 250 feet.~~

The Washington State Department of Ecology (Ecology) estimates that for shallow well use, the size of lots should be greater than two acres. Deeper wells would help a great deal to prevent these problems, but the added cost of well drilling and lack of state legislation requiring it (except for community wells) have prevented this from occurring.

The main uses of groundwater in the lower Yakima Basin are for domestic water supply, fire protection, commercial/industrial use, irrigation, orchard frost protection, stock watering, fish propagation, recreation and beautification, and heat exchange.

Figure 1-4. Critical Aquifer Recharge Areas, Grandview UGA



Surface Water

The Yakima River Basin occupies approximately 6,150 square miles. Its headwaters are situated along the crest of the Cascade Range. The mainstream Yakima River is joined by a number of tributaries and flows generally southeast until it joins the Columbia River.

Precipitation is seasonal throughout the Basin, with approximately 60 to 80 percent of annual precipitation occurring from October to March. Much of this precipitation falls as snow during the winter months and becomes stored in the Cascade Range as snow pack. As a result, runoff in the Yakima River Basin exhibits a pronounced spike from April to June, with lower levels of runoff occurring during the remaining months of the year.

WAC 222-16-031 establishes an “interim” water typing system to be used until a permanent typing system is established. Figure 1-7, page 1-30 illustrates the surface waters falling in the City and the unincorporated UGA. Water typing is established based on the structure and function of waterways. Grandview has one Type 4 stream identified in the noncontiguous portion of the City limits to the northeast. Type 4 streams are “all segments of natural waters within the bankfull width of defined channels that are perennial nonfish habitat streams. Perennial streams are flowing waters that do not go dry any time of a year of normal rainfall and include the intermittent dry portions of the perennial channel below the uppermost point of perennial flow.”
~~With the exception of the Yakima River, no streams occur within the City of Granger or its UGA. There is one Type 3 stream that flows west of Granger from the Yakima River (Figure 1.5).~~

The Yakima River is classified as a Type 1 Stream and is designated as a “Shoreline of the State,” falling under the purview of the Washington State Shoreline Management Act (SMA). In compliance with the SMA, ~~the Grandview adopted the Yakima County Regional Shoreline Master Program (SMP) was adopted December 18, 2007 and, effective on February 25 January 22, 2010. Shoreline Master Program designations in the Grandview vicinity are illustrated in~~ **Error! Reference source not found.**, ~~page~~ **Error! Bookmark not defined.**

~~On December 18, 2007 Yakima County adopted an updated SMP and Critical Areas Ordinance (CAO). It is anticipated that multiple municipalities throughout Yakima County may use Yakima County’s SMP and CAO as a template for their own local CAO. This approach would provide regional consistency in implementing a comprehensive CAO throughout the Yakima Valley. When adopted, the Granger CAO will contain criteria for classifying water bodies and their associated buffer widths for each classification.~~

~~**Type 4 stream. What adopted in CAO.** No perennial creeks or streams are found within the City of Grandview or its UGA. Several irrigation return flow ditches that pass through the City and UGA drain into the Sulfur Creek Wasteway which in turn drains into the Yakima River upstream from Grandview.~~

Major canal systems which pass through the Sunnyside-Benton sub-basin are the Sunnyside Canal and the Roza Canal. Only the Sunnyside Canal passes through the City and its UGA.

~~The Yakima River system includes salmon spawning, rearing and migration. Anadromous and resident fish found in the river, include spring chinook salmon, fall chinook salmonid, summer steelhead, rainbow trout, smallmouth bass and largemouth bass. A variety of wildlife can also be found in the Lower Yakima Sub-basin, including mule deer, bald eagles, osprey, Canadian geese, and valley quail.~~

Surface Water Quality ~~See Granger discussion to make this more cohesive.~~

Water quality is a key consideration in planning for the Yakima River Basin, and a wide variety of physical, chemical, and biological parameters have been studied with respect to surface water quality in the Basin. These include:

- Temperature
- Dissolved oxygen (DO)
- Nutrients (i.e. substances that stimulate growth of aquatic plants)
- Fecal indicator bacteria
- Suspended sediments and turbidity
- Pesticides

A number of previous studies and planning processes have addressed surface water quality in the Yakima River Basin. Reports prepared by the USGS under the National Water Quality Assessment (NAWQA) program provide the most extensive study of surface water quality in the Yakima River Basin. This information was compiled by the Yakima Basin Water Resources Agency (YBWRA) in their Watershed Plan, approved in 2003. The current planning process is the Yakima River Basin Integrated Water Resource Management Plan being developed by the U.S. Bureau of Reclamation and Washington State Department of Ecology, for which a Final Programmatic Environmental Impact Statement has been released.

The studies found that Reach #6 of the Yakima River, the reach most closely associated with the City of Grandview (Figure 1-3) is seriously degraded by toxics (metals, PCBs, pesticides) fecal coliform, and elevated temperatures. Sediments from agricultural drains blanket the river bottom. There are also localized deficiencies in riparian shade and off-channel habitat. Fall chinook spawn in Reach #6 and it is considered an important migratory corridor.

The federal Clean Water Act includes provisions for addressing surface waters that do not meet established water quality standards, and Washington State must identify surface-water bodies that do not achieve water quality standards. These water bodies comprise what is commonly known as the 303(d) list.

In the Yakima Basin, 150 listings have been placed on 70 water bodies listed on the 303(d) list. Ecology has a program to develop water quality cleanup plans for each listed stream segment. These cleanup plans are known as Total Maximum Daily Load (TMDL) reports. No water bodies within the City of Grandview are on the 303(d) list. The lower reaches of the Yakima River are on the 303(d) list with TMDLs related to PCBs, pesticides, and sediments.

A variety of legal requirements exist related to the quantity of instream flows (water flowing in a stream) in the Yakima River Basin. Generally these are based on court orders and federal legislation related to the Yakima Irrigation Project. The State of Washington has not established minimum instream flows for the Yakima River Basin. Instream flows in the Yakima River Basin mandated by the courts are not quantified. Rather, the amount of water necessary to maintain fish life is to be determined annually depending on existing prevailing conditions. Specific mandates from the state and federal courts include orders directed at United States Bureau of Reclamation's operation of the Yakima Irrigation Project to reduce negative impacts on the fisheries resource, orders with respect to treaty reserved rights for fish, and orders with respect to instream flows to support treaty fishing rights at "usual and accustomed places."

In addition to the quantity of instream flows mandated by the courts, “target flows” have been defined and mandated by Congress in 1994 (Public Law 103-434). The legislation provides that the Yakima Irrigation Project Superintendent shall estimate the anticipated availability of water supply to meet water entitlements, and provide instream flows in accordance with the biological needs of fisheries. The Yakima River in this area is considered a class “A” water under the State of Washington’s administrative classification. This class of water is rated as “excellent,” meaning that the Yakima River meets or exceeds standards established for all, or substantially all, designated water uses. The waters of Sunnyside Canal and the Roza Canal are also designated as class “A” waters. Only the Sulfur Creek Wasteway is rated as a class “B” water, meaning that this water meets or exceeds the requirements for most beneficial water uses except those related to domestic water supplies, salmonid spawning and primary contact recreation.

~~Most of the sites with median nitrite plus nitrate concentrations greater than 2 mg/L were also in the Sunnyside sub-basin. Almost all of the sites with median concentrations greater than 0.5 mg/L were associated with drains. These are also the sites with large nitrite plus nitrate concentrations. Specific standards have not been established for organic nitrogen compounds, but these compounds should be considered as potential water quality problem areas because they may undergo bacterial decomposition and oxidation to form more toxic forms of nitrogen (ammonia, nitrites, and nitrates).~~

~~According to a report released by the Roza-Sunnyside Board of Joint Control in 2009², the Sulphur-Creek channel functions as a wasteway with significant water quality problems including numerous pesticide exceedances and high water temperatures. Silty bottom substrates are also present. Salmonids need colder temperatures than many non-game fish and require higher dissolved oxygen concentrations particularly over spawning gravels.~~

~~Between 1997 and 2008, median yields of fecal coliform, nutrients, and discharge were higher in Sulphur Creek than the other waterways in the sub-basin. However, when a site downstream of the City of Sunnyside was removed, concentrations in Sulphur Creek became comparable to the other drains in the sub-basin.~~

~~Based on soil permeability, surficial recharge potential in the Sunnyside sub-basin is considered moderate.~~

~~The major surface water uses in the Sunnyside sub-basin include domestic water supply, irrigation, orchard frost protection and cooling, stock watering, fish propagation, wildlife propagation, and power generation.~~

Flooding

Although flooding is a problem that has significant impact upon the use of the land, the floodplain of the Yakima River in the Grandview area is narrow and of sufficient distance from the built-up portion of the City that it is not affected by this potential problem. The only area of the UGA or City limits that is affected by the 100-year or 500-year floodplain is a small section of the southern noncontiguous portion of the City that houses the wastewater treatment plant and sprayfields. This small section borders the Yakima River and does not affect the built-up portion of the City.

² ~~Water Quality Conditions in Irrigation Waterways within the Roza and Sunnyside Valley Irrigation Districts, Lower Yakima Valley, Washington, 1997-2008~~

The Yakima River Basin is subject to two types of floods – the more severe, but less frequent winter floods resulting primarily from rainfall; and the spring floods caused mainly by snowmelt. The more severe rain-type floods may be expected from November through March.

Prolonged warm temperatures during May and June, accompanied by rainfall, cause rapid snowmelt in the mountains, producing the lower-crested spring and early summer floods. These floods are of importance as they adversely affect farmlands after crops are beginning to grow.

Flooding is reduced in the floodplain area by the various reservoirs and diversion canals. The reservoirs serve to reduce flood discharges of the rain-type floods which come at a time when the reservoirs are drawn down after the close of the irrigation season. The effect of the reservoirs on the snowmelt, or spring floods depends on the reservoir filling program. It is possible for the reservoirs to be completely filled at the beginning of a spring flood, in which event no reduction in flood discharge could be effected. On the other hand, if unusually large late runoff from snowmelt is foreseen, and the reservoirs are left unfilled in order to capture the late runoff, a potential spring flood may be reduced to harmless proportions.

Controlling bank erosion and preventing damaging overflow are the main flood problems in the lower Yakima Valley. Levees and reservoirs have reduced the danger of considerable damage from flooding and have provided some degree of protection to homes and farms which have encroached on the floodplain. However, because there is great variability in the volumes and heights of flood waters, flooding will undoubtedly occur again in the future. The most recent large flood along the Yakima River in the lower Yakima Valley occurred in 1974. Damage to property at that time was very significant.

As indicated by the Federal Emergency Management Agency - Flood Insurance Rate Map, Community Panel No. 530217 2225 B for Yakima County and Community Panel No. 530218 0005 B for the City of Grandview, the only area within the 100-year floodplain within the City or its UGA is a narrow strip of land on either side of the Yakima River adjacent to the City limits on the south side of the Yakima River (see [Figure 1-6, page 1-26](#)).

Yakima County and the City of Grandview regulate building in floodplain areas. These permits require all development to be floodproofed; i.e., the elevation of the first inhabited floor must be one foot above the 100-year flood elevation. In addition, the City of Grandview and Yakima County also regulate shoreline management along the Yakima River. Within the City of Grandview, the only area within the 100-year floodplain and subject to flood control provisions is also City property.

Wetlands

Wetlands provide a broad spectrum of natural and physical functions. Freshwater wetlands have flood storage capacity, serve as groundwater recharge areas, and tend to moderate flow regimes of associated drainages. Wetlands also work to remove suspended solids from water, absorb and recycle mineral and organic constituents, and otherwise contribute to improved water quality. Biological functions include food chain production, general habitat, nesting, spawning, rearing, and resting sites for aquatic and land species.

Efficiency of wetland functions can be broadly described according to wetland type. Primary productivity is low to moderate in streams and drainages and moderate to high in marshes and swamps. Relative export efficiency of nutrients is generally rated high for perennial riverine marshes, seasonally flooded riverine swamps, and overflow systems; moderate for freshwater wetlands adjacent to or linked to

intermittently inland swamps and bogs, and freshwater wetlands adjacent to or linked to ephemeral riverine systems.

Many wetlands such as swamps, wet meadows, and riverine- and drainage-related wetlands, serve as groundwater discharge/recharge zones. Hydrologically isolated wetlands do not provide those functions unless linked to the groundwater system. Assessing water purification capabilities for wetlands is complicated, but in general, those wetlands with greater vegetative cover and an optimal ratio of aerated water surface to total wetland size have the most value.

In the Grandview CAO adopted 2012, wetlands are rated according to the Washington State Department of Ecology wetland rating system found in the Washington State Wetland Rating System documents *Washington State Wetland Rating System for Eastern Washington – Revised August 2014 (Ecology Publication #04-06-030)*, as updated or amended. ~~Revised (Publication No. 04-06-015, Hruby, T., 2004) or as revised. These documents contain the definitions and methods for determining if the criteria below are met.~~

~~Category I.~~

~~Characteristics of Category I wetlands are as follows:~~

~~Represent a unique or rare wetland type; or~~

~~Are more sensitive to disturbance than most wetlands; or~~

~~Are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; and~~

~~Provide a high level of function.~~

~~Category I wetlands are:~~

~~Alkali wetlands; or~~

~~Wetlands that are identified by scientists of the Washington Natural Heritage Program/DNS as high quality wetlands; or~~

~~Bogs; or~~

~~Mature and old-growth forested wetlands over ¼ acre with slow-growing trees; or~~

~~Forests with stands of aspen; and~~

~~Wetlands that perform many functions very well (scores of 70 points or more).~~

~~Category II.~~

~~Characteristics. These wetlands are difficult, though not impossible to replace, and provide high levels of some functions.~~

~~Category II wetlands are:~~

~~Forested wetlands in the floodplains of rivers; or~~

~~Mature and old-growth forested wetlands over ¼ acre with fast-growing trees; or~~

~~Vernal pools; and~~

~~Wetlands that perform functions well (scores between 51 and 69 points)~~

~~Category III.~~

~~Characteristics. Wetlands having a moderate level of function which do not satisfy Category I, II, or IV criteria.~~

~~Category III wetlands are:~~

~~Vernal pools that are isolated; and~~

~~Wetlands with a moderate level of functions (scores between 30-50 points).~~

~~Category IV.~~

~~Characteristics. These are wetlands with the lowest level of function but still provide functions that warrant protection. Often the low function is because they have been heavily disturbed. Replacement of these wetlands can sometimes provide improved function.~~

~~Category IV wetlands have a function score of less than 30.~~

Figure 1-7 (page 1-30) illustrates wetland data for the Grandview vicinity, which were mapped using the wetlands data set developed for the Yakima County CAO. The map includes information from the National Wetlands Inventory produced by the U.S. Fish and Wildlife Service and soil maps produced by United States Department of Agriculture National Resources Conservation Service that are useful in helping to identify potential wetland areas. The wetland map is used as a guide for the City, project applicants and/or property owners, and may be continuously updated as wetlands are more accurately identified, located and delineated.

The Grandview CAO provides standards and procedures for protection of wetlands.

Figure 1-5. Shorelines of the State Under the Shoreline Management Act, Grandview

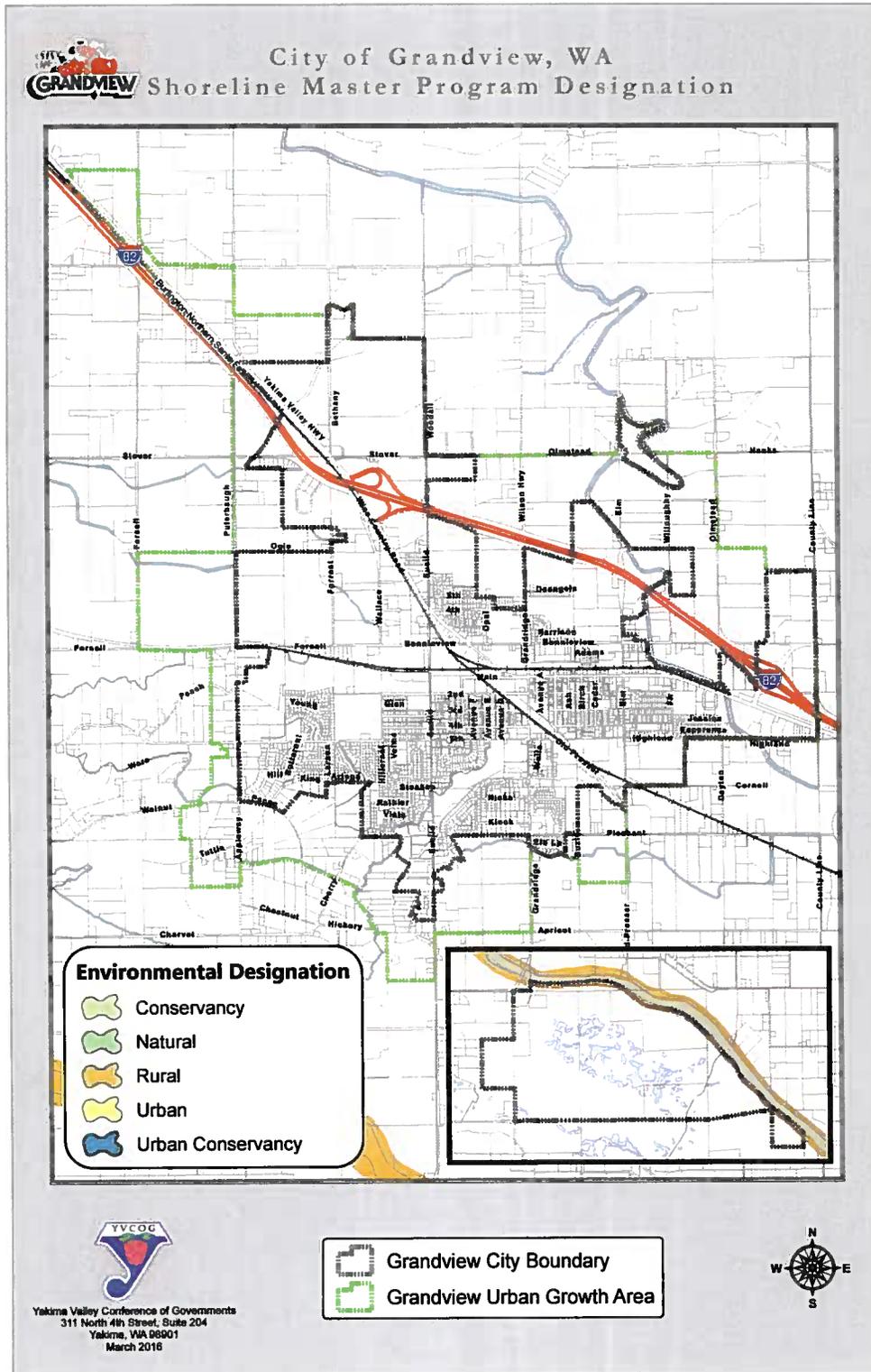
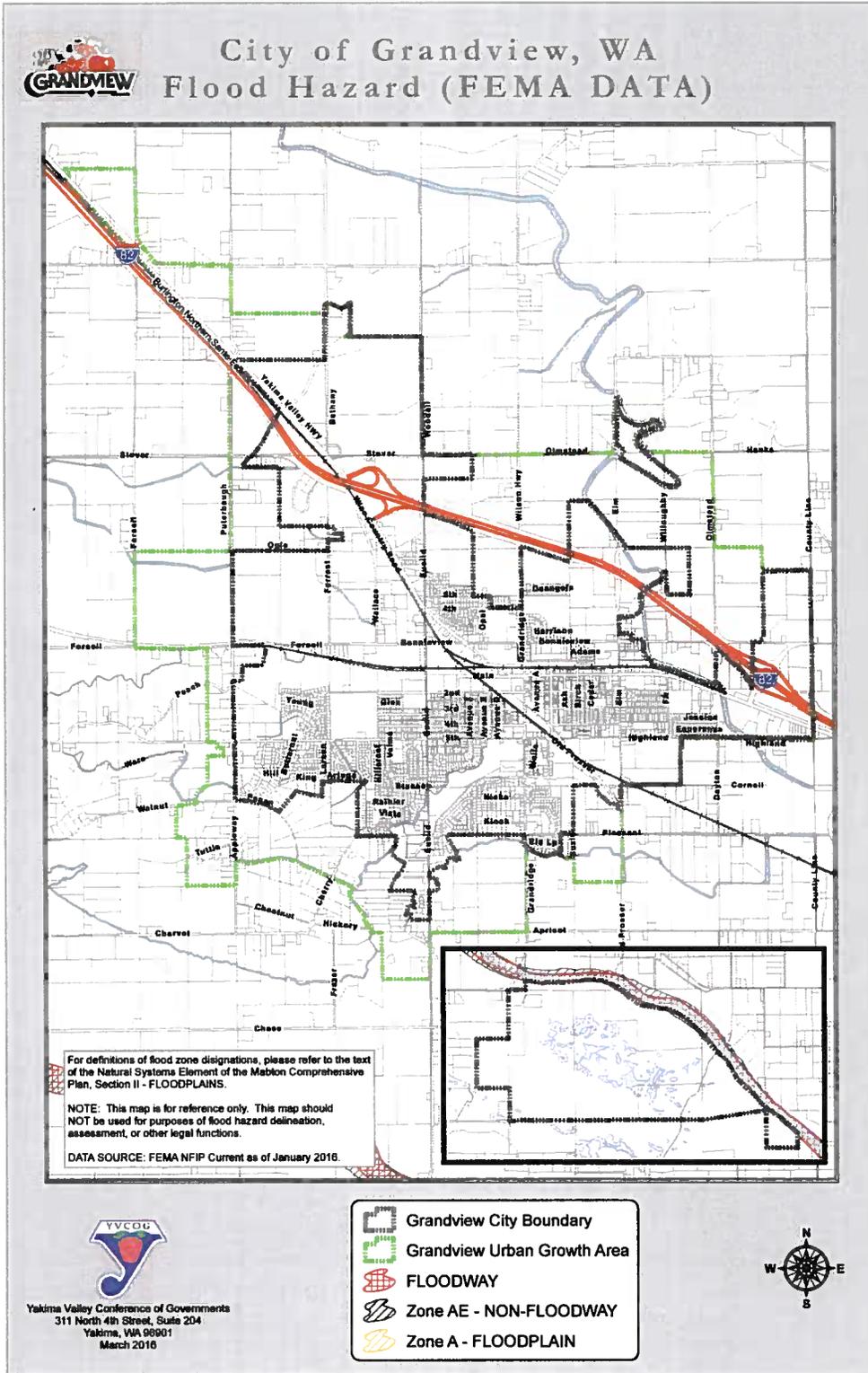


Figure 1-6. FEMA Flood Hazard Area, Grandview UGA



Plants and Wildlife

~~gathered from the United States Department of the Interior's Fish and Wildlife Service (USFWS). The USFWS gathers wetland data nationwide and compiles it in the National Wetland Inventory (NWI) map. The data contained in the NWI map for all of Yakima County and the Granger vicinity was gathered in the 1980s. NWI mapping was used by Yakima County CAO update and the City of Grandview CAO. The Grandview CAO contains performance standards for wetlands.~~

~~NWI wetlands in the vicinity of Grandview are mapped in Figure 1.5.~~

Plants and Animals

The Grandview area lies within the big sage brush-blue bunch wheatgrass (*Artemisia tridentate-Agropyron spicatum*) association of the Columbia Basin Province. This association is found in the driest part of the Columbia Basin Province and was historically composed of shrubs, grasses, forbs, and a surface crust of lichens and mosses. As previously stated, farming practices have resulted in alteration of vegetation over much of the landscape in the Grandview area. Very few native plants exist within the area with areas of invasive and noxious weeds present within and adjacent to the farmed portions of the area.

Some of the canals and ditches that traverse the Grandview area possess an overstory of young narrow-leaf willow (*Salix exigua* spp. *exigua*) and Russian olive (*Elaiagnus angustifolia*), with elm (*Ulmus* sp.) along the top of bank. Other canals and ditches that traverse the area have no overstory or shrubs and appear to be cleared of vegetation regularly. Emergent marsh vegetation within the ditches includes smartweeds (*Polygonum* spp.), watercress (*Rorripa nasturtium-aquaticum*), cattails (*Typha latifolia*), marshelder (*Iva xanthifolia*), and reed canarygrass (*Phalaris arundiances*). This habitat provides food, cover, and water as well as a movement corridor for birds and mammals. Small wetlands may also be found within the area. The vegetation of these wetlands is similar to that within the ditches. Amphibians may find limited breeding sites within the ditches and wetlands, though runoff of agricultural chemicals renders this somewhat less than desirable. The farmed portions of the area are used to grow corn, asparagus, mint, alfalfa and wheat. Little other vegetation is found among the crops and other species that occur are primarily noxious weeds such as puncturevine (*Tribulus terrestris*), redroot, pigweed (*Amaranthus retroflexus*), morning glory (*Convolvulus arvensis*), and kochia (*Kochia scoparis*). Farmed lands offer fluctuating levels of food and cover for wildlife in correlation with harvest regimes.

Some wetlands are created as a consequence of irrigation practices. These wetlands may be used as pasture for grazing cattle, thus decreasing their value for wildlife species. Vegetation within these wetlands is limited to herbaceous species such as smartweeds and quackgrass (*Agropyron repens*) and has been heavily grazed offering only limited cover and food. Other wetlands are formed from impoundments adjacent to roads and the railroad and receive runoff from these sources as well as irrigation, also decreasing their value for wildlife.

Information on rare plants was requested from the Washington State Department of Fish and Wildlife (WDFW) Priority Habitat and Species Program~~Washington Department of Natural Resources Natural Heritage Program~~. No rare plant populations were detected through the use of the database. One endangered and four threatened plants are known to occur in Yakima County. Little native vegetation is found within the area and it is unlikely that rare plants would have survived the severe alternations of the habitat; however, it should be noted that no formal rare plant survey has been completed for the Comprehensive Plan.

~~Information was requested from the Washington Department of Fish and Wildlife Priority Habitat and Species Program concerning priority habitats and species in the vicinity. No threatened, endangered, or candidate species were reported to occur within the area. There have been reports that golden eagles (*Aquila chrysaetos*) sometimes forage in the vicinity. Golden eagles are State candidates for endangered species listing.~~

~~Bird species observed in the Grandview area are those species that are common in grasslands and open areas. Species frequenting the area include American kestrel, western meadowlark, mourning dove, ruffed grouse, black-billed magpie, common snipe, California quail, killdeer, starlings, western kingbird, Brewer's blackbird, woodpeckers, robins, osprey, and ring-necked pheasant. Additionally, in the scrub/shrub habitat associated with the return flow ditches, yellow warblers and song sparrows are found. Some wetlands in the Grandview area have been observed with great basin spadefoot (*Scaphiopus intermontanus*) tadpoles. Other amphibians or reptiles may be present within the irrigation canals supported on the food, cover, water, and marginal breeding habitat these areas provide. Small mammals such as mice and voles appear to be abundant throughout the area. Ground squirrels may also occasionally be seen. Larger mammals make use of the canals and ditches, particularly the more vegetated edges, as a corridor leading to the more sheltered habitat found elsewhere. Signs of deer, coyote, and raccoons are found throughout the more rural portions of the area. Portions of the area are particularly valuable as a foraging area for raptors. Red-tailed hawks can be seen circling agricultural properties and other raptors including golden eagles may make use of the habitat.~~Wildlife

Information was requested from the WDFW Priority Habitat and Species Program concerning priority habitats and species in the Grandview vicinity. No threatened, endangered, or candidate species were reported to occur within the area. The WDFW has identified the following non-fish priority species or habitats within the City of Grandview:

1. Great Blue Heron – breeding area in ponds at the Byron Unit of the Sunnyside-Snake River Wildlife Area
2. Palustrine Aquatic Habitat³

The City of Grandview falls within the breeding range of the ferruginous hawk (*Buteo regalis*), a State threatened species; however, the ferruginous hawk is not known to occur in the City of Grandview or its UGA. Non-endangered bird species that may be present in the Grandview area are those species common in Eastern Washington grasslands and open areas. Species frequenting these areas include the American kestrel, western meadowlark, mourning dove, ruffed grouse, black-billed magpie, common snipe, California quail, killdeer, starlings, western kingbird, Brewer's blackbird, and ring-necked pheasant. Additionally, in the scrub/shrub habitat associated with the return flow ditches, ducks, yellow warblers and song sparrows are found. Eagles and great blue herons have also been observed along the Yakima River. The greater sage grouse (*Centrocercus urophasianus*) is a candidate species for listing under the federal Endangered Species Act (ESA). The sage grouse was common in pre-settlement times throughout central and eastern Yakima County; however, its known range in the County is now limited to the northeast corner of the County. The sage grouse is not known to occur in the City of Grandview or its UGA.

Amphibians or reptiles may be present within the irrigation canals supported on the food, cover, water, and marginal breeding habitat these areas provide. Small mammals such as mice and voles may be

³ Wetlands dominated by plants that persist throughout the year or the growing season.

abundant throughout the area. Ground squirrels may also occasionally be seen. Larger mammals make use of the canals and ditches, particularly the more vegetated edges, as a corridor leading to the more sheltered habitat found elsewhere. Signs of deer, coyote, and raccoons are found throughout the more rural portions of the UGA. Portions of the area are particularly valuable as a foraging area for raptors. Red-tailed hawks can be seen circling agricultural properties and other raptors including eagles may make use of the habitat.

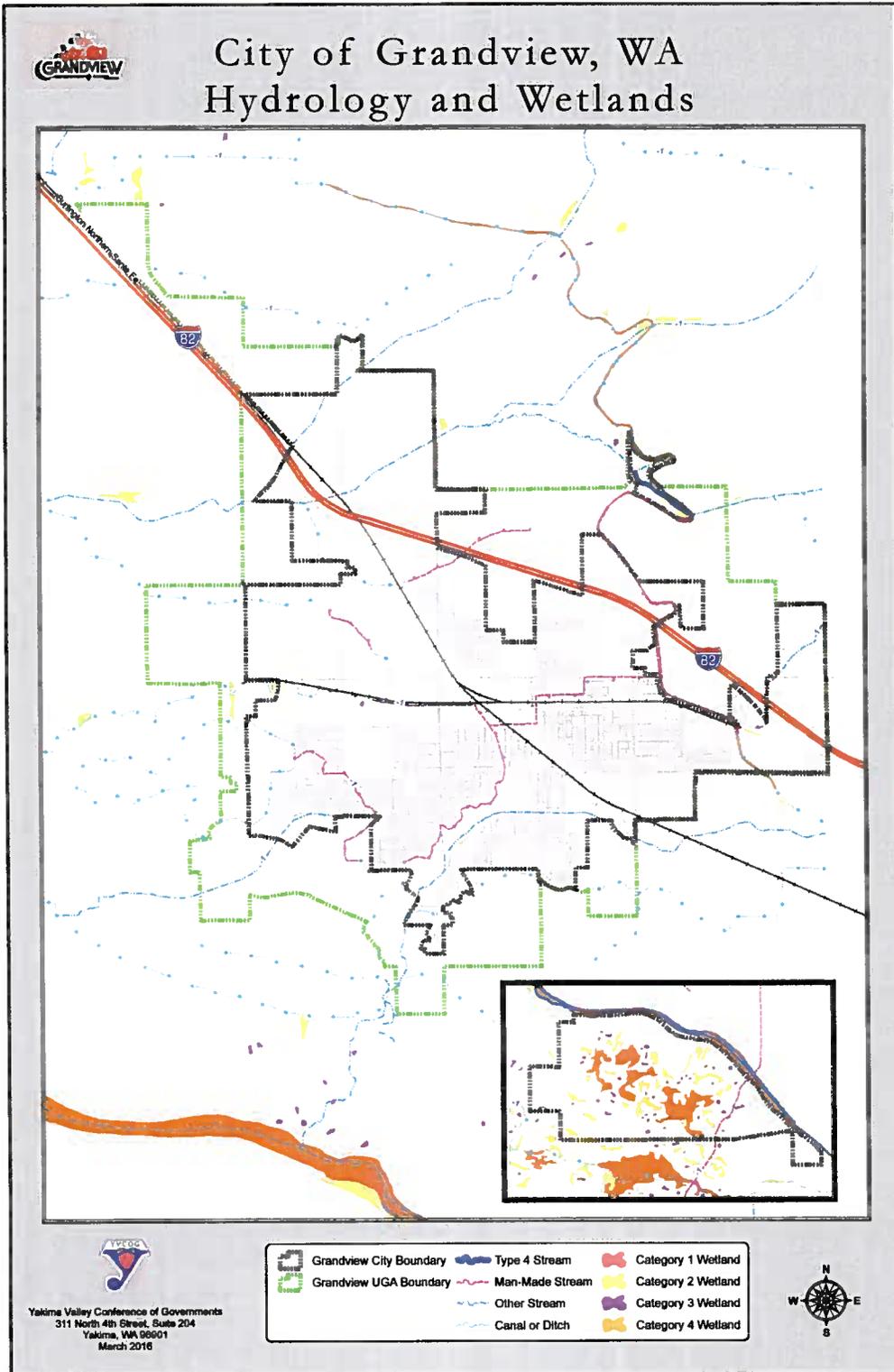
Fish

Fish have different habitat needs based in part on their life history stages. Anadromous fish migrate and have unique needs throughout the aquatic system which may be frustrated by the presence of dams or other barriers, low stream flow, and high temperatures during times of passage. Resident fish have year round requirements as well as specific habitat needs during critical times such as spawning. Salmonids need colder temperatures than many non-game fish and require higher dissolved oxygen concentrations particularly over spawning gravels. Successful salmonid reproduction requires channel and substrate stability and adequate winter water flow to prevent freezing. Channels to accommodate fish moving between safe wintering areas and summer foraging areas are also necessary.

Grandview is most closely associated with Reach #6 of the Yakima River. This reach of the Yakima River runs from the Toppenish Creek southeast of Granger, east to the confluence of the Yakima River and the Columbia River. Yakima River mainstream conditions are more suitable for fish habitat in Reaches #1-3 in the upper Yakima Valley, and generally deteriorate in a downstream direction. Reach #6 of the Yakima River is important as a migratory corridor for a number of fish species. According to the WDFW, the reach is a known spawning ground for fall chinook, and a known rearing ground for spring chinook. Coho and summer steelhead salmon are also documented in Reach #6. Bull trout are presumed to occur in the reach, but are not documented.

The National Marine Fisheries Service (NMFS) divides watersheds into evolutionary significant units (ESUs) for purposes of listing threatened or endangered fish species. The City of Grandview is located in the Mid-Columbia River ESU. The USFWS listed bull trout as threatened in the Columbia River Watershed in June 1997. The NMFS listed steelheads as threatened in the Mid-Columbia River ESU in March 1999. In June 2005, the NMFS listed coho salmon as threatened in the Lower Columbia River ESU. Spring chinook salmon are listed as endangered or threatened by the NMFS in some ESUs of the Columbia River Watershed. However, spring chinook salmon is not listed in the Mid-Columbia River ESU.

Figure 1-7. Hydrology and Wetlands, Grandview UGA



Fish

Information for this section was developed by Pentec Environmental Inc. Other than the Yakima River, no streams are located in the Grandview area that are listed in the Catalog of Washington Streams and Salmon Utilization.

The waterways in the Grandview area are similar in nature and for the purposes of aquatic biology were determined to contain similar species assemblages. The primary waterways consist of man-made irrigation ditches of approximately 8 feet in depth and 15 feet in width. Substrates consist of sand and mud fines. Vegetative cover consists mainly of weedy herbaceous species or low brush, though trees are found along the canals in some areas. Water levels and flow are dependent upon controlled irrigation demands and are not significantly influenced by natural water injection in all but the heaviest rain or runoff from snow melt. Observed aquatic species included opportunistic amphibians and insects. No fish were observed and due to the lack of vegetative cover and lack of direct access to natural streams, none were expected to be present.

III. GRANDVIEW NATURAL RESOURCE LANDS AND RESOURCE LANDS AND CRITICAL AREAS

Critical Areas

SEE GRANGER

An inventory of natural resource lands and critical areas was prepared in November 1991, and was used as the basis for the City's action on resource lands and critical areas. This document is incorporated here by reference.

On July 6, 1992, the Grandview City Council passed and approved Resolution No. 92-21, "A Resolution of the City of Grandview, Washington, with Regard to the Designation, Conservation, and Protection of Agricultural Lands, Forest Lands, Mineral Resource Lands, and Critical Areas." That resolution is incorporated here by reference. The City concluded at that time, that it was not appropriate to designate any agricultural lands, forest lands, mineral resource lands, frequently flooded areas, wetlands, areas with a critical recharging effect on aquifers used for potable water, fish and wildlife habitat conservation areas, or geologically hazardous areas within the City limits. Further investigation of frequently flooded areas found that a portion of the City may be within an area of special flood hazard as designated by the Federal Emergency Management Agency (FEMA). These findings are reflected in this section of the comprehensive plan.

Below are the conclusions reached in regard to the designation of resource lands and critical areas in the City of Grandview.

Agricultural Lands

Although there are areas of land currently in agricultural use within the Grandview city limits, the City views these areas as available for more intensive uses at the discretion of the landowner, in compliance with the City's development regulations. As such, the City is not required to have in place a Purchase of Development Rights or Transfer of Development Rights program as outlined under the Growth Management Act [RCW 36.70A.060(4)].

Forest Lands

The City of Grandview neither has commercial nor non-commercial forest lands. There are no lands within the City that are used to grow trees, including Christmas trees subject to the state excise tax that are imposed on harvesters of timber.

Mineral Lands

The City of Grandview has no commercial-grade deposits of gravel, or any other mineral, underlying the City, according to consulting geologist Newell Campbell. There are no active mineral extraction permit sites located within the City limits, according to the Washington State Department of Natural Resources (DNR).

Wetlands

Figure 1-7 (page 1-30) identifies Category 1, 2 and 3 wetlands inside City limits, as well as Category 2 and 3 wetlands in the unincorporated UGA. No wetland sites have been designated by the City of Grandview as critical areas. The wetlands which do exist are small, isolated depressions which contain established non-native plant species or are associated with man-made ditches and other structures which are not defined as regulated wetlands.

Critical Aquifer Recharge Areas

Critical Aquifer Recharge Areas in Grandview and UGA are illustrated in Figure 1-4 (page 1-18), which also shows that some of the recharge areas in the City and unincorporated UGA have a “high” susceptibility to contamination. The City of Grandview has determined that it is inappropriate for the City to designate areas with a critical recharging effect on aquifers used for potable water, as it has insufficient information for determining whether the City has these areas within its boundaries.

Drawdown rates, as tested at the various City wells are within acceptable limits and recover quickly. Recharge for the City wells appears to be in the upland areas away from the City toward the foothills and mountains of the Cascade Range.

Fish and Wildlife *Habitat* Conservation Areas

Fish and wildlife habitat conservation areas include:

- Areas with which state or federally designated endangered, threatened, and sensitive species have a primary association;
- Habitats of local importance, including but not limited to areas designated as priority habitat by the Washington Department of Fish and Wildlife;
- Naturally occurring ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat, including those artificial ponds intentionally created from dry areas in order to mitigate impacts to ponds;
- Waters of the state, including lakes, rivers, ponds, streams, inland waters,
- Underground waters, and all other surface waters and watercourses within the jurisdiction of the State of Washington;
- Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity.
- Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity.
- “Fish and wildlife habitat conservation areas” does not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of and are maintained by a port district or an irrigation district or company.

As discussed previously, the WDFW has identified the following non-fish priority species or habitats within the City of Grandview:

1. Great Blue Heron – breeding area in ponds at the Byron Unit of the Sunnyside-Snake River Wildlife Area
2. Palustrine Aquatic Habitat⁴

These areas are designated as Fish and Wildlife Habitat Conservation Areas.

The City of Grandview’s wastewater treatment ponds, though primarily man-made, provide habitat for many species of waterfowl. Under the Growth Management Act, the wastewater treatment ponds are not designated as wetlands because they are manmade. The Washington State Department of Fish & Wildlife (WDFW) have classified the ponds as urban natural open space which refers to areas that are not in, nor part of, a larger natural ecosystem, are adjacent to developed urban areas, yet provide significant habitat for priority species of wildlife.

The Long-Billed Curlew (a medium-size wading bird) and the Black-Necked Stilt have been identified as nesting in the Grandview treatment ponds area. These species are listed as State Monitor species by the Department of Wildlife because decreasing populations are found in Washington State.

The treatment ponds do provide important habitat for many species of waterfowl. However, because this area is not a wetland under GMA, and considering the relatively low classification of the birds in question, it does not appear prudent to recommend designation of Grandview’s wastewater treatment ponds at this time. Grandview is the sole owner of this property.

Frequently Flooded Areas

The 100-100-year floodplain of the Yakima River within the City is confined to a narrow strip of land along the northern boundary of the City’s wastewater treatment plant and sprayfield area. This strip of land has been designated an area of special flood hazard in the City’s Flood Control Ordinance. This area is designated as a frequently flooded area and development in this area is controlled by the provisions of the City’s Flood Control Ordinance. No other areas of the City or its UGA have been identified as areas of special flood hazard by FEMA. See Figure 1-6 page 1-26.

Geologically Hazardous Areas

Yakima County compiled geologic hazard data during the update to the Yakima County CAO. The geologic hazards inventory consists of areas of the county susceptible to hazardous geologic events. Geologic hazards are subdivided on the basis of risk. The categories used are high risk, intermediate risk, low risk, suspected risk, and unknown risk. The following hazards are depicted in the inventory: landslides, over steepened slopes, stream undercutting, alluvial fans/flash flooding, avalanche risk, and earthquake activity.

Figure 1-8, page 1-35 illustrates Geologically Hazardous Areas in the city of Grandview and unincorporated UGA. These hazards include areas in the category of “Intermediate Hazard – Over-steepened Slope.” Over-steepened slope hazard areas include areas with slopes steep enough to cause potential problems. Intermediate risk areas are less likely to fail than high risk areas, but are still potentially hazardous. The intermediate risk category includes some slopes between 30-40%.

⁴ Wetlands dominated by plants that persist throughout the year or the growing season.

Natural Resource Areas

Agricultural Lands

Agricultural lands were identified through the County Assessor's database of existing land use. There are 39 agricultural parcels (either follow or in current agricultural use) totaling 532 acres in the Grandview City limits (Figure 1-9, page 1-36). These parcels are on prime farmland soil. For the most part, they are also adjacent to residential, commercial, light industrial/manufacturing, and other urban development.

For the reasons stated as follows, the City has determined that it is not appropriate to designate these parcels of land as agricultural lands of long-term commercial significance.

- 1) A majority of the City's area is already built-up; and
- 2) These parcels are near the built-up area, are zoned for a more intensive land use, or are near infrastructure with the capacity to serve additional growth on these parcels. These parcels represent the next logical areas for residential, commercial, or light industrial/manufacturing urban growth; and
- 3) These parcels are within the City limits and as such are part of the UGA. State law does not allow agricultural lands within a UGA to be designated as "agricultural lands of long-term commercial significance," unless the governing jurisdiction already has in place a program for purchase or transfer of development rights.

Figure 1—Geologic Hazards, City of Grandview Urban Growth Area, shows geologic hazard areas within the City of Grandview. Geologic hazards identified include landsliding, oversteepened slopes, and stream undercutting. With the exception of oversteepened slopes, all of these hazards are associated with the Yakima River.

This identification of geologic hazards was not based on actual site inventories conducted in the study area, but on general published sources of information and maps, therefore these sites can only be considered potential geologic hazard areas. These geologic hazards are subdivided on the basis of risk. The categories used are: High Risk, Intermediate Risk, Low Risk, Suspected Risk, and Unknown Risk.

Mineral Lands

The City of Grandview has no areas of good economic potential for the extraction of commercial-grade deposits of gravel or any other mineral. There are no mineral extraction permit sites located within Grandview's borders. As illustrated in Figure 1-8, page 1-35, there is one mineral resource site identified outside of the City limits and UGA, to the northeast of the wastewater treatment plant area. No mineral resource lands of long-term commercial significance have been identified within the City of Grandview, therefore, no designation is necessary.

Forest Lands

In the City of Grandview, there are no lands (commercial or noncommercial) that are used to grow trees, including Christmas trees subject to the state excise tax that is imposed on harvesters of timber. Thus, no forest lands of long-term commercial significance have been designated within the City.

April 2016

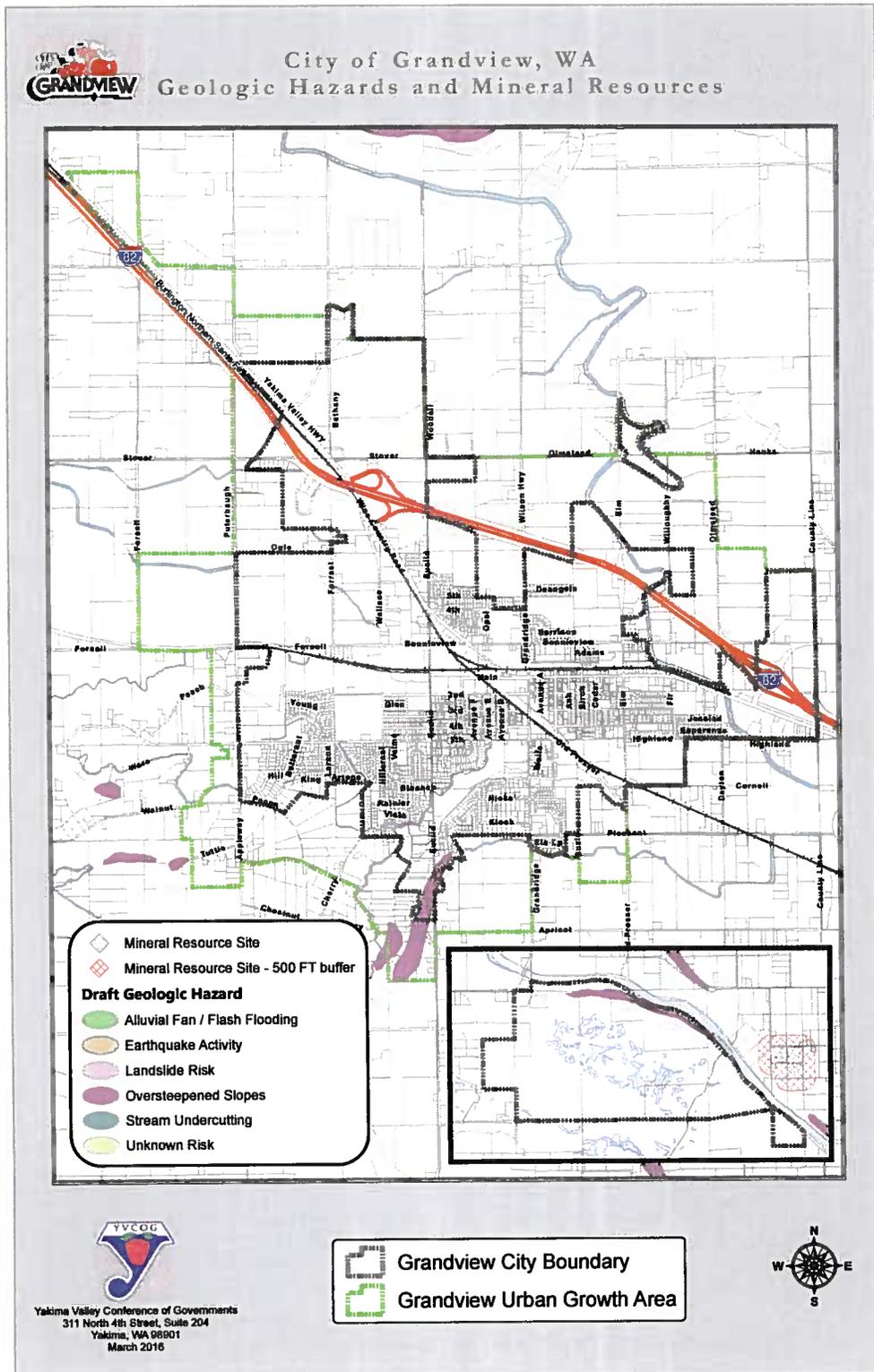
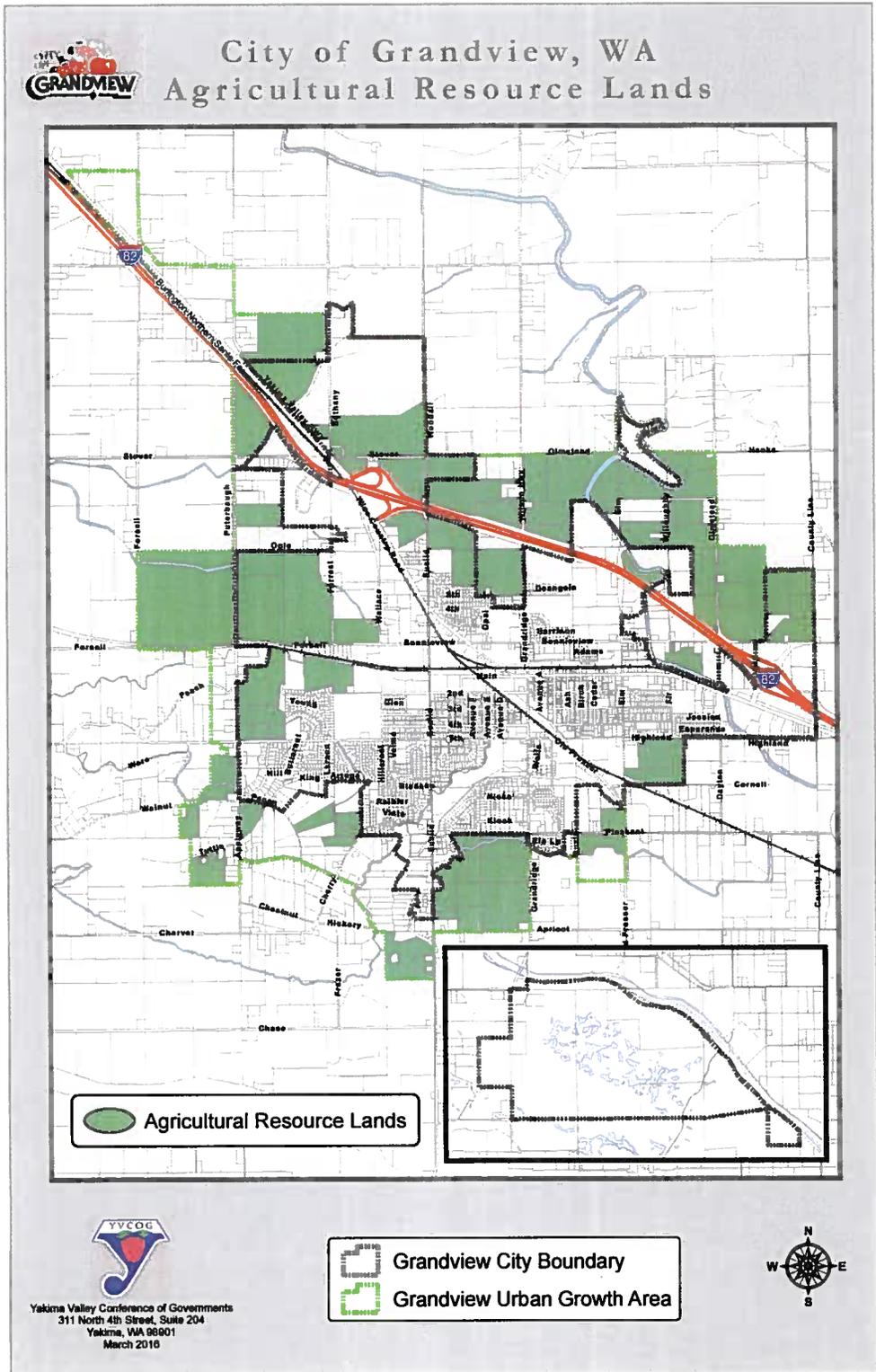


Figure 1- Geologic Hazard Areas within the Grandview UGA Figure 1-8 Geologic Hazard and Mineral Resource Areas, Grandview UGA

Figure 1-9 Current Agricultural Use, Grandview UGA



The following definitions of geologic hazards is taken from Yakima County as part of the 2006 update to the Yakima County Mineral Resources Plan.

- ~~LS (Landslides). Places where landslides, debris flows, or slumps that have already occurred, are considered to be designated landslide areas. Sliding presumed to be Holocene in age (10,000 years or less) is shown as High Risk (LS3).~~

~~OS (Oversteepened Slopes). Areas with slopes steep enough to create potential problems fall into the oversteepened slopes category. High risk areas (OS3), include slopes greater than 40 percent, areas of rock fall and creep, and places underlain with unstable materials.~~

~~SU (Stream Undercutting). These areas are confined to banks near main streams and rivers where undercutting of soft materials may result. High Risk areas (SU3), include steep banks of soft material adjacent to present stream courses. Intermediate Risk areas (SU2), are banks along the edge of a flood plain but away from the present river course. Low Risk areas (SU) are combined with other Low Risk areas on the map.~~

~~The City of Grandview has reviewed the information presented as part of Figure 1 and has determined that no high risk geologic hazards exist within the City of Grandview. Potential geologic hazard sites as indicated in Figure 1 are present in the UGA.~~

IV. IV. GOALS AND POLICIES

Goal 1: Manage development according to the severity of natural constraints in order to reduce risks and minimize damage to life and property.

Policy 1.1 The City will continue to amend and adopt land development regulations which ensure the protection of the attributes, functions and amenities of the natural environment under all projected growth scenarios.

Policy 1.2 Support the preservation and enhancement of natural resource lands and support occupations associated with agriculture, farming and tourism within agricultural areas adjacent to the City and its UGA.

Policy 1.3 Support the protection of agricultural and other resource lands within the Grandview area from incompatible development, keeping them available for recreational use and economic purposes.

Policy 1.4 Encourage new developments to locate in areas that are relatively free of environmental problems relating to soil, slope, bedrock, and the water table. Proposed developments should be reviewed by the appropriate City staff or consultants to identify site-specific environmental problems.

Policy 1.5 Development shall take adequate measures to minimize significant erosion and flash flooding conditions by:

- 1) Limiting the total amount of impervious surface to be created;
- 2) Planting sufficient vegetation to offset the effects of the impervious surfaces created; and/or
- 3) Providing sufficient drainage facilities to control storm runoff.

Goal 2: Maintain acceptable air quality standards.

Policy 2.1 Support the Yakima County Clean Air Authority in their efforts to prevent degradation of air quality.

Policy 2.2 Where there is a high probability of erosion, grading should be kept to a minimum and disturbed vegetation should be restored as soon as is feasible. In all cases, appropriate measures to control erosion and sedimentation shall be required.

Policy 2.3 Development shall take adequate precautions to avoid an increase in erosion potential by:

- 1) Requiring dust control of construction projects during and after construction;
- 2) Requiring vegetation to be replanted to increase the surrounding soils' capacity to withstand wind and water erosion; and
- 3) Require all roads in new subdivisions to be paved in accordance with Grandview's subdivision regulations.

Policy 2.4 Keep dust to a minimum on all public streets and alleys:

- 1) All streets and roads inside the City should be paved and maintained; and
- 2) Dust abatement programs should be continued for remaining unpaved roads until paving can be done.

Policy 2.5 Encourage alternatives to the use of the private automobile.

Policy 2.6 Approve the location and operation of potential new pollution producing activities (including light, noise, and odor), and after careful review for potential nuisance and/or compatibility with adjacent land use. Seek supplemental review, as needed by the:

- 1) Yakima County Clean Air Authority;
- 2) Washington State Department of Ecology; and/or
- 3) Washington State Department of Social and Health Services.

Goal 3: Maintain high ground water quality.

Policy 3.1 Coordinate with Yakima County to limit development outside the projected service area to a density where cumulative groundwater degradation for Grandview area residents will be prevented.

- 1) Ensure that lot sizes in areas lacking public sewer service are large enough to accommodate individual septic systems without cumulative degradation of water quality by continuing Yakima County Health District's requirement of on-site tests as a prerequisite for building permits; and
- 2) Require development to include provisions which ensure that increased runoff from

impervious surfaces does not damage the natural drainage system or deteriorate water quality.

Policy 3.2 Conduct and support educational efforts which inform citizens of measures they can take to reduce contaminant loading of groundwater systems.

Policy 3.3 The City shall consider the impacts of new development on water quality as part of its review process and will require any appropriate mitigating measures.

Policy 3.4 Encourage development and expansion of community public water systems within the Urban Growth Area to lessen the reliance on individual wells.

Policy 3.5 Ensure that abandoned wells are closed properly.

Goal 4: Protect surface waters from degradation.

Policy 4.1 Identify those natural conditions, land uses and practices that together could result in loss of water quality if not properly managed.

Policy 4.2 Evaluate the measures that are already in place to prevent degradation, and determine the best, cost effective means for protecting surface water from identified threats to water quality.

Policy 4.3 Adequate on-site disposal of surface water runoff shall be provided by all types of development.

Policy 4.4 Support efforts to encourage improved farming practices which will minimize runoff from farmlands and subsequent degradation of surface water by fertilizers, insecticides, sedimentation, etc.

- 1) Coordinate with the exiting conservation districts and support their planning and implementation effort by:
 - a) Supporting long-range planning efforts which address conservation in a variety of different areas; and
 - b) Implementing appropriate methods and techniques for conservation and
 - c) Using the Yakima County Extension Service, the Natural Resources and Conservation Service, the Bureau of Reclamation, etc., for more information on related subjects.

Policy 4.5 Review available best management practices which can be used to reduce erosion and sedimentation associated with development within Grandview. Investigate the need for additional erosion control measures for construction projects.

Policy 4.6 Maintain local control over water quality planning by: 1) providing guidance to state and federal agencies regarding water quality issues, priorities and needs; and 2) demonstrating progress in accomplishing the goals and objectives of locally developed

water quality plans, thereby pre-empting externally-imposed solutions to water quality problems as much as possible.

Policy 4.7 Encourage the implementation of best management practices through information dissemination and cooperation.

Policy 4.8 Investigate the need for additional measures to control storm drainage and improve the storm drainage system.

Policy 4.9 Work cooperatively with other jurisdictions and agencies to educate the public on the proper use and disposal of stored chemicals and hazardous materials.

Policy 4.10 Maintain commercially viable farmland in agricultural production.

Policy 4.11 Discourage urban density development on productive agricultural lands outside of areas needed for future growth and development.

Goal 5: Establish critical areas protection measures to protect environmentally sensitive areas, and protect people and property from hazards.

Policy 5.1: Use the best available science in a reasonable manner to develop regulations to protect the functions and values of critical areas. (WAC 365-195-900)

Policy 5.2: Ensure proposed subdivisions, other development, and associated infrastructure are designed at a density, level of site coverage, and occupancy to preserve the structure, values and functions of the natural environment or to safeguard the public from hazards to health and safety.

Shorelines

The goals and policies of the Yakima County Shoreline Master Program, adopted by the City of Grandview effective January 22, 2010, are hereby adopted by reference, as amended.

Critical Areas are an important part of the natural setting in City of Grandview. Their protection is required by the Growth Management Act and important to the quality of life of the residents of The City. Critical Areas include groundwater, fish and wildlife habitat (which includes surface waters), wetlands, frequently flooded areas, and geologic hazards. The protection of critical areas must include certain general approaches, which are provided for in the goals and policies below.

GOAL 1: Establish critical areas protection measures to protect environmentally sensitive areas, and protect people and property from hazards.

Policy 1.1: Use the best available science in a reasonable manner to develop regulations to protect the functions and values of critical areas. (WAC 365-195-900)

Policy 1.2: Ensure proposed subdivisions, other development, and associated infrastructure are designed at a density, level of site coverage, and occupancy to preserve the structure, values and functions of the

natural environment or to safeguard the public from hazards to health and safety. (WAC 365-195-825(2)(b))

~~Policy 1.3: Use a preference-based system of mitigation sequencing for the County's stream, lake, pond, wetland, floodplain, and fish and wildlife habitat critical areas that reduces impacts using approaches ranging from avoidance to replacement. (See section 16A.03.10 Mitigation requirements, WAC 197-11-768)~~

~~Policy 1.4: In order to encourage Critical Area protection and restoration, the density and lot size limits stipulated in other policies may be adjusted or exceeded to accomplish clustering and bonus provisions adopted under the CAO. The use of incentive-based programs is encouraged.~~

~~GROUNDWATER AND CRITICAL AQUIFER RECHARGE AREAS (CARAs)~~

~~Groundwater is the primary source of drinking water for most rural County residents. Grandview currently uses groundwater (wells) as its primary source of water. Once groundwater is contaminated it is difficult, costly, and often impossible to clean up. Some contaminants like microbial organisms can cause sickness and discomfort while others like organic chemicals, inorganic metals, and radio-nuclides can cause neurological disorders, cancer, mutations and death.~~

~~Wells provide a potential source of contamination of both the shallow and deeper aquifers. The proliferation of individual domestic and irrigation wells increases the risk that contamination may find its way into the groundwater. Although the quality of groundwater resources used for drinking water in City of Grandview is generally good, the potential for problems exists because many wells tap shallow aquifers (less than 100 feet) which are extremely susceptible to surface contamination. The following goal and policies address these concerns by encouraging the identification of aquifers and taking steps to reduce potential contamination.~~

~~WATER QUALITY AND QUANTITY~~

~~GOAL 2: — Maintain and manage the quality of the groundwater resources in City of Grandview as near as possible to their natural conditions and in compliance with state water quality standards.~~

~~Policy 2.1: — Identify and map important aquifers, critical aquifer recharge areas, and surface waters.~~

~~Policy 2.2: — Develop performance standards and regulate uses for activities which adversely impact water quantity and quality in aquifers, wetlands, watersheds and surface waters.~~

~~Policy 2.3: — Evaluate the potential impact of development proposals on groundwater quality, and require alternative site designs to reduce contaminant loading where site conditions indicate that the proposed action will measurably degrade groundwater quality.~~

~~Policy 2.4: — Continue data collection and evaluation efforts to better understand the City's groundwater system and its vulnerability to contamination.~~

~~Policy 2.5: — Encourage the retention of natural open spaces in development proposals overlying areas highly susceptible for contaminating groundwater resources.~~

~~Policy 2.6: — Conduct and support educational efforts which inform County citizens of measures they~~

~~can take to reduce contaminant loading of groundwater systems.~~

~~Policy 2.7: — Encourage development and expansion of community public water systems within the Urban Growth Area to lessen the reliance on individual wells.~~

~~Policy 2.8: — Ensure that abandoned wells are closed properly.~~

~~Policy 2.9: — Ensure sufficient water quantity exists to support land use activities.~~

~~SURFACE WATER~~

~~The Yakima River and its many tributaries are perhaps the most dynamic and used natural features in Yakima County. Throughout its 200-mile course, water from the Yakima is withdrawn to feed agricultural operations that drive our economy. Irrigation and other water uses developed both inside and outside the Yakima Irrigation Project, developed under the 1903 Reclamation Act, are relatively unique in that all of the water for irrigation is generated, stored and distributed in the Valley. The tributaries, the Naches River and the Yakima River are used as the conduit for the water distributions system in the Valley. The Yakima River is used as the trunk of the water distributions system, is the most important component of the Yakima Project, and probably is the most important piece of infrastructure in the Valley. Agriculture, industry, recreation and the City of Grandview are dependent on this distribution system for water supply for domestic, industrial, agricultural and residential uses. The demands of this economy are continuing to increase, while existing operations return flows of a far lesser quality. The combined historic actions of over withdrawal, pollution and vegetation removal have produced a waterway that exits near the City of Grandview is completely altered from the condition in which it begins near Snoqualmie Pass. To deal with the situation, efforts by many parties have been made to improve stream corridors within the County, especially in the areas of water quality and habitat. The following goals and policies address actions and attitudes that should guide decisions related to surface water.~~

~~GOAL 3: — Enhance the quantity and quality of surface water.~~

~~Policy 3.1: — Improve water conservation through education and incentives.~~

~~Policy 3.2: — Protect water quality from the adverse impacts associated with erosion and sedimentation.~~

~~Policy 3.3: — Encourage the use of drainage, erosion and sediment control practices for all construction or development activities.~~

~~Policy 3.4: — Identify future needs and promote increased water supplies through coordinated development and conservation efforts.~~

~~Policy 3.5: — Support local and regional cooperative efforts which help to accomplish this goal.~~

~~GOAL 4: — Restore, maintain or enhance the quality of the Yakima River Basin's surface water.~~

~~Policy 4.1: — Maintain local control over water quality planning by: 1) providing guidance to state and federal agencies regarding water quality issues, priorities and needs; and 2) demonstrating progress in accomplishing the goals and objectives of locally developed water quality plans, thereby pre-~~

~~emptying externally imposed solutions to water quality problems as much as possible.~~

~~Policy 4.2: — Make use of local and regional data sources to assess water quality progress.~~

~~Policy 4.3: — Participate in water quality improvement planning and implementation efforts by local, regional, state, federal, and tribal agencies, as well as coalitions such as local watershed planning efforts.~~

~~STORMWATER~~

~~While stormwater management may be of less concern in City of Grandview than in areas that receive more precipitation, localized flooding does occur in certain areas. If the amount of impervious area in a watershed increases, and provisions are not made for retaining stormwater on-site, up watershed areas can contribute to the flooding hazards of their down-stream neighbors, and flooding becomes more frequent~~

~~and more severe. If the natural drainage courses are obstructed with fill material, buildings, or roads that lack adequately sized culverts, stormwater can cause localized flooding, with property damage and disruption of services.~~

~~City of Grandview is subject to state and federal water quality and Underground Injection Control (UIC) regulations. Some Urban Areas within City of Grandview are also subject to state and federal stormwater regulations.~~

~~GOAL 5: Prevent increased flooding from stormwater runoff.~~

~~Policy 5.1 Require on-site retention of stormwater.~~

~~Policy 5.2 Preserve natural drainage courses.~~

~~Policy 5.3 Minimize adverse stormwater impacts generated by the removal of vegetation and alteration of land forms.~~

~~GOAL 6: Improve water quality through improved stormwater management.~~

~~Policy 6.1 Review the recommendations of locally adopted stormwater management plans, and develop a realistic implementation schedule.~~

~~Policy 6.2 Control stormwater in a manner that has positive or neutral impacts on the quality of both surface and groundwater, and does not sacrifice one for the other.~~

~~FISH AND WILDLIFE HABITAT, WETLANDS, AND FREQUENTLY FLOODED AREAS~~

~~The City of Grandview contains some of the most diverse and unique fish and wildlife habitat found anywhere in the country. These environments provide places where animals can find food, water, shelter, and security, and act as gene pools to assure continued genetic diversity. The following goal and supporting policies encourage the protection of fish and wildlife habitat in order to protect the environment for multiple uses. While fish and wildlife habitat includes upland habitat, state administrative code (WAC 365-190-080(5)) focuses on habitat that is related to water.~~

~~Stream corridors, lakes, ponds, wetlands, flood plains and other areas subject to flooding perform important hydrologic functions including storing and slowly releasing flood waters, reducing floodwater velocities, settling and filtering of sediment and nutrients, shading surface waters, and other functions. These areas also provide natural areas for wildlife and fisheries habitat, recreation areas and rich agricultural lands. Development in these areas diminishes their functions and values and can present a risk to persons and property on the development site and/or downstream from the development. Building in frequently flooded areas also results in high costs for installing flood protection measures to protect life and property and to repair flood damages.~~

~~Wetlands are an economically, biologically, and physically valuable resource. They are the most biologically productive ecosystems in nature, even though they constitute only a small percentage of the total landscape. They provide important nursery and spawning areas, which in turn support a strong commercial and recreational industry. Wetlands also play an important function in local and regional hydrologic cycles.~~

The following goals and policies work toward preserving, protecting and managing fish and wildlife habitat and wetlands by adopting, boundaries, and a data system to track them, and establishing development regulations for their protection. These goals and policies also seek to reduce the hazards and impacts of development through comprehensive flood-control planning, directing facility development away from these areas, and developing site development standards.

FISH AND WILDLIFE HABITAT

~~GOAL 7: Provide for the maintenance and protection of habitat areas for fish and wildlife.~~

~~Policy 7.1 Encourage the protection of fish and wildlife habitat from a region-wide perspective to ensure that the best representation and distribution of habitats remains to protect the natural values and functions of those habitats. Fish and wildlife habitat protection considerations should include: The physical and hydrological connections between different habitat types to prevent isolation of those habitats;~~

~~Diversity of habitat types both on a local and regional scale;
Large tracts of fish and wildlife habitat;
Areas of high species diversity;
Locally or regionally unique and rare habitats; and
Winter range and migratory bird habitat of seasonal importance.~~

~~Policy 7.2 Direct development away from areas containing significant fish and wildlife habitat areas, especially areas which are currently undeveloped or are primarily dominated by low intensity types of land uses such as forestry.~~

~~Policy 7.3 Encourage the retention of sustainable natural resource based industries such as forestry and agriculture in order to protect important fish and wildlife habitat.~~

~~Policy 7.4 Coordinate fish and wildlife protection efforts with state and federal agencies and the Yakama Nation to:
Avoid duplication of effort;
Ensure consistency in protecting fish and wildlife habitat which crosses political boundaries;
Facilitate information exchanges concerning development proposals which may impact fish and wildlife habitat; and
Take advantage of any available financial, technical, and project review assistance.~~

~~Policy 7.5 Protect the habitat of Washington State Listed Species of Concern and Priority Habitats and Species in order to maintain their populations within City of Grandview.~~

~~Policy 7.6 Work with the resource agencies to prioritize habitats and provide appropriate measures to protect them according to their relative values.~~

~~GOAL 8: Conserve, protect and enhance the functions and values of stream corridors to provide for natural functions and protect hydrologic connections between features. (WAC 173-26-221(2)(C)(iv)(b))~~

~~Policy 8.1 Development projects should not be authorized if they obstruct fish passage or result in the unmitigated loss or damage of fish and wildlife resources.~~

~~Policy 8.2 Encourage and support the retention of natural open spaces or land uses which maintain hydrologic functions and are at low risk to property damage from floodwaters within frequently flooded areas.~~

~~Policy 8.3 Protect public and private properties by limiting development within hazardous areas of the stream corridor.~~

~~Policy 8.4 Give special consideration to conservation and protection measures necessary to preserve or enhance anadromous fisheries. (RCW 36.70A.172, WAC 365-195-925)~~

~~Policy 8.5 Establish a system of vegetative buffers landward from the ordinary high water mark of streams, lakes and ponds and the edge of wetlands.~~

FREQUENTLY FLOODED AREAS

~~GOAL 9: Prevent the loss of life or property and minimize public and private costs associated with repairing or preventing flood damages from development in frequently flooded areas.~~

~~Policy 9.1 Support comprehensive flood control planning.~~

~~Policy 9.2 City of Grandview should conduct additional analysis and mapping of frequently flooded areas in cases where the 100-year floodplain maps prepared by the Federal Emergency Management Agency do not adequately reflect the levels of risk or the geographic extent of flooding.~~

~~Policy 9.3 Direct new critical facility development away from areas subject to catastrophic, life-threatening flood hazards where the hazards cannot be mitigated.~~

~~Policy 9.4 Where the effects of flood hazards can be mitigated require appropriate standards for subdivisions, parcel reconfigurations, site developments and for the design of structures. {Amended 12/98}~~

~~Policy 9.5 Plan for and facilitate returning Shoreline rivers to more natural hydrological conditions, and recognize that seasonal flooding is an essential natural process. (WAC 173-26-221(3)(b)(v))~~

~~Policy 9.6 When evaluating alternate flood control measures on Shoreline rivers: consider the removal or relocation of structures in the FEMA 100-year floodplain; where feasible, give preference to nonstructural flood hazard reduction measures over structural measures; structural flood hazard reductions measures should be consistent with the County's comprehensive flood hazard management plan. (WAC 173-26-221(3)(b))~~

WETLANDS

~~GOAL 10: Provide for long term protection and no net loss of wetland functions and values.~~

~~Policy 10.1 Preserve, protect, manage, and regulate wetlands for purposes of promoting public health, safety and general welfare by:
Conserving fish, wildlife, and other natural resources of City of Grandview;
Regulating property use and development to maintain the natural and economic benefits provided by wetlands, consistent with the general welfare of the County;
Protecting private property rights consistent with the public interest; and
Require wetland buffers and building setbacks around regulated wetlands to preserve vital wetland functions and values.~~

~~Policy 10.2 Adopt a clear definition of a regulated wetland and a method for delineating regulatory wetland boundaries.~~

~~Policy 10.3 Classify regulated wetland areas to reflect their relative function, value and uniqueness.~~

~~Policy 10.4 Develop a wetlands database.~~

~~Policy 10.5 Manage and mitigate human activities or actions which would have probable adverse impacts on the existing conditions of regulated wetlands or their buffers.~~

~~Policy 10.6 Require mitigation for any regulated activity which alters regulated wetlands and their buffers. Develop ratios, performance standards, monitoring, and long term protection. (WAC 173-26-221(2)(c)(i)(F), Existing CAO principle)~~

GEOLOGIC HAZARDS

~~Geologic hazards pose a threat to the health and safety of City of Grandview residents when incompatible commercial, residential, or industrial development and associated infrastructure is sited in areas of significant hazard. The following goal and policies address the risk associated with these areas by encouraging engineering designs or modified construction practices that will mitigate problems, and prohibiting building where problems cannot be mitigated.~~

~~GOAL 11: Protect the public from personal injury, loss of life or property damage from geologic hazards.~~

~~Policy 11.1 Ensure that land use practices in geologically hazardous areas do not cause or exacerbate natural processes which endanger lives, property, or resources.~~

~~Policy 11.2 Locate development within the most environmentally suitable and naturally stable portions of the site.~~

~~Policy 11.3 Classify and designate areas on which development should be prohibited, conditioned, or otherwise controlled because of danger from geological hazards.~~

~~Policy 11.4 Prevent the subdividing of known or suspected landslide hazard areas, side slopes~~

of stream ravines, or slopes 40 percent or greater for development purposes.

SHORELINES

The goals and policies of the Shoreline Master Program are directed towards land and water uses and their impact on the environment. As the population continues to increase, the pressures upon our shorelines will also increase. The goal of the Shoreline Master Program is to protect the shorelines of the state.

~~GOAL 12: — Implement the general policy goals of the Shoreline Management Act as listed below (WAC 173-26-176(3)):~~

~~Utilize Shorelines for economically productive uses that are particularly dependent on Shoreline location or use.~~

~~Utilize Shorelines and the waters they encompass for public access and recreation.~~

~~Protect and restore the ecological functions of Shorelines.~~

~~Protect the public right of navigation and corollary uses of waters of the state.~~

~~Protect and restore buildings and sites having historic, cultural, and educational value.~~

~~Plan for public facilities and uses correlated with other shoreline uses.~~

~~Prevent and minimize flood damages.~~

~~Recognize and protect private property rights.~~

~~Preferentially accommodate single family uses.~~

~~Coordinate shoreline management with other relevant local, state, and federal programs.~~

~~GOAL 13: — Protection measures for local Shorelines should use the following Shoreline Management Act principles in order of preference as listed below (RCW 90.58.020):~~

~~Recognize and protect the state-wide interest over local interest;~~

~~Preserve the natural character of the shoreline;~~

~~Result in long term over short term benefit;~~

~~Protect the resource and ecology of the shoreline;~~

~~Increase public access to publicly owned areas of the shorelines;~~

~~Increase recreational opportunities for the public in the shoreline;~~

~~Provide for any other element as defined in RCW 90.58.100 deemed appropriate or necessary.~~

~~GOAL 14: — Maintain, restore and where necessary improve the shoreline terrestrial and aquatic ecosystems so that they maintain viable, reproducing populations of plants and animals while providing the maximum public benefit of limited amounts of shoreline areas. Accomplish this through the policies in the required shoreline elements listed below.~~

SHORELINE ENVIRONMENTS

~~GOAL 15: — Shorelines areas should be classified into specific environmental designations. The designation system should be based on the existing and future land use pattern as well as the biological and physical character of the shoreline. These environments should include the Urban, Rural, Conservancy, Urban Conservancy, Natural and Floodway / Channel Migration Zone (CMZ) environments. Land uses and activities should be limited to those that are consistent with the character of the environment designation.~~

URBAN ENVIRONMENT POLICIES

~~Policy 16.1: ————— The Urban environment is to be used for the most intensely developed areas, or areas where intensive development is desirable or tolerable. The basic principle in an Urban Environment is oriented toward quality of development in harmony with the shoreline. The Urban Environment should insure optimum utilization of shorelines occurring within urbanized areas by providing for public access and by managing development so that it enhances and maintains the shorelines for a multiplicity of uses.~~

~~Policy 16.2: ————— The following criteria should be used for the designation of Urban Environments:
Areas presently supporting high intensity land use including residential, commercial, industrial and recreational uses.
Areas which are planned to accommodate urban expansion of residential, commercial, industrial and recreational uses.
High land values.
Major public or private capital investments.
Close proximity to services and utilities.
Few biophysical limitations to development.
Potentially low flood hazard.~~

~~Policy 16.3: ————— Water oriented commercial, industrial, and recreation uses should be given high priority in the Urban Environment, and may be accompanied by non water oriented uses in mixed use developments. Residential uses should be discouraged. Recreational uses are preferred uses within the urban environments.~~

RURAL ENVIRONMENT POLICIES

~~Policy 17.1: ————— The Rural Environment should restrict intensive development along undeveloped shoreline areas that might interfere with the normal operations or economic viability of an agricultural activity located on adjacent associated shoreline areas. The Rural Environment maintains open spaces and provides opportunities for recreational uses compatible with agricultural activities.(SMP p. 10)~~

~~Policy 17.2: ————— The following criteria should be used for the designation of Rural Environments (SMP p. 10):
Intensive agricultural or recreational uses.
Those areas with potential for agricultural use.
Those undeveloped natural areas that lie between agricultural areas.
Low density residential development.
Moderate land values.
Potential low demand for services.~~

~~Policy 17.3: ————— Generally, allowed uses in the Rural environment should focus on resource and recreation uses. Commercial and industrial uses should be carefully limited. Residential uses should sustain shoreline functions (SMP 15.00, WAC 173 26 211 (5)(b)).~~

CONSERVANCY ENVIRONMENT POLICES

~~Policy 18.1: The Conservancy Environment classification should be used for areas where maintenance of the existing character of the area is desirable. This does not necessarily mean preservation, but rather a use of natural resources on a sustained yield basis. Thus, the harvesting of timber as well as recreational activities are to be the primary uses permitted. Also, areas that are isolated from services, have poor drainage, high flood danger, poor ground for septic tanks, unstable earth, or steep slopes should be designated Conservancy.~~

~~Policy 18.2: The following criteria should be used for the designation of Conservancy Environments.~~

~~Very low intensity land uses; primarily sustained yield activities or pasture range land.~~

~~Larger acreages.~~

~~Relatively low land values.~~

~~Relatively minor public or private capital investment.~~

~~Considerable biophysical limitations, making commercial, industrial, or medium to high-density residential development unsuitable.~~

~~Policy 18.3: Generally, commercial and industrial uses should not be allowed in the Conservancy Environment, except when they are water-oriented. Resource uses should be of low enough intensity to sustain shoreline functions with preference for non-permanent structures. Low density residential development should sustain the character of the shoreline. Diffuse recreational uses are preferred use. Uses should avoid hazardous areas.~~

NATURAL ENVIRONMENT POLICIES

~~Policy 19.1: The Natural Environment should protect those shoreline areas which are considered unique by virtue of their existence and valuable only to the extent that the natural integrity is preserved for the benefit of future, as well as, present generations. Prime targets for classification into the Natural Environment will be certain shorelands owned or controlled by the various Federal and Tribal wildlife management agencies with limited access and certain private lands which are seen to be proper for Natural classification, and the owner of which will be interested in the promise of very low taxation.~~

~~Policy 19.2: The following criteria should be used for the designation of Natural Environments~~

~~The presence of a natural, historical, cultural, scientific, or educational feature considered valuable by virtue of its existence in a natural or original state and thereby warranting preservation for the benefit of present and future generations.~~

~~Those areas generally intolerant of intensive human use.~~

~~Areas with severe biophysical limitations.~~

~~Natural areas with strong limits on access.~~

~~Policy 19.3: Generally, commercial, industrial, mining, non-water oriented recreation, roads, utilities, and parking areas should not be located in Natural Environment. Other uses, including residential, should be carefully limited in the Natural environment. Restrict activities that may degrade the actual or potential value of this environment, and severely restrict development in hazardous areas (SMP 15.00, WAC 173-26-211(5))~~

~~Policy 19.4: — The Floodway/Channel Migration Zone environment should protect the water areas; islands, associated overflow channels, and channel migration areas. This environment acknowledges the river's need to move within parts of its floodplain, and emphasizes the preservation of the natural hydraulic, geologic and biological functions of the county's shorelines that are constrained by severe biophysical limitations.~~

~~Policy 19.5: — A Floodway/Channel Migration Zone designation should be assigned to shoreline areas that are within mapped Channel Migration Zones and/or within a designated FEMA Floodway. The extent of the Floodway/Channel Migration Zone should never extend beyond the 100-year flood plain.~~

~~Policy 19.6: — Generally, commercial, industrial, mining, non-water oriented recreation, roads, utilities, parking areas, and residences should not be located in the Floodway/Channel Migration Zone Environment. Other uses (recreation, resource uses, etc.) should be carefully limited to protect shoreline functions. Restrict activities that may degrade the actual or potential value of this environment, and severely restrict development in hazardous areas. Modifications that harden or fix stream banks and channels should be discouraged.~~

~~URBAN CONSERVANCY ENVIRONMENT POLICIES~~

~~Policy 20.1: — The Urban Conservancy environment should protect and restore ecological functions of open space, floodplain and other sensitive lands where they exist in urban and developed settings, while allowing a variety of compatible uses.~~

~~Policy 20.2: — The following criteria should be used for the designation of Urban Conservancy Environments;~~

- ~~— 1) Areas that lie in incorporated municipalities and urban growth areas;~~
 - ~~2) Areas appropriate and planned for development that is compatible with maintaining or restoring of the ecological functions of the area;~~
 - ~~3) Areas those are suitable for water enjoyment uses;~~
- ~~areas that are open space or floodplain, or that retain important ecological functions that should not be more intensively developed;~~

~~Policy 20.3: — Generally, allowed uses should focus on recreational uses. Commercial, industrial and residential uses should be carefully limited, and when allowed should result in restoration of ecological functions. Uses that preserve the natural character of the area or promote the preservation of open space, floodplain or sensitive lands (either directly or over the long term) should be the primary allowed uses. Public access and public recreation objectives should be implemented whenever feasible and significant ecological impacts can be mitigated.~~

~~GENERAL SHORELINE POLICIES~~

~~Policy 21.1: — New development or new uses, including the subdivision of land, should not be established when it would be reasonably foreseeable that the development or use would require structural flood hazard reduction measures within the channel migration zone or floodway.~~

~~Policy 21.2: — Only allow new structural flood hazard reduction measures in shoreline jurisdiction when it can be demonstrated that they are necessary to protect existing development, that nonstructural measures are not feasible, that impacts on ecological functions and priority species and habitats can be~~

~~successfully mitigated so as to assure no net loss, and that appropriate vegetation conservation actions are undertaken.~~

~~Policy 21.3: Protect all shorelines of the state so that there is no net loss of ecological functions from both individual permitted development and individual exempt development.~~

~~Policy 21.4: In development of the Shoreline Master Program, evaluate and consider cumulative impacts of reasonably foreseeable future development on shoreline ecological functions and other shoreline functions to ensure no net loss of ecological function. Develop a means to allocate the burden of addressing cumulative effects.~~

~~Policy 21.5: Provide, where feasible and desirable, restoration of degraded areas along the shorelines of Yakima County.~~

~~Policy 21.6: Critical areas within shoreline jurisdiction should be protected with the critical area policies and standards protecting all of the County's critical areas, including those for CMZ's and Flood Control.~~

~~Policy 21.7: Protect shoreline streams, lakes, ponds, and wetlands with a vegetative buffer as described in the Critical Areas Ordinance.~~

~~Policy 21.8: For existing agriculture encourage through a variety of voluntary means the maintenance of a permanent vegetative buffer between tilled areas and associated water bodies to reduce bank erosion, retard surface runoff, reduce siltation, improve water quality and provide habitat for fish and wildlife. For new agriculture, buffer requirements should be applied.~~

~~Policy 21.9: Natural vegetation within shoreline jurisdiction should be retained to the greatest extent feasible. This should be accomplished by applying the stream corridor and wetland buffer requirements. Activities covered by the State Forest Practices Act should not be subject to vegetation conservation standards, but should be subject to buffer requirements when under County jurisdiction. Require developers to indicate how they plan to preserve shore vegetation and control erosion (WAC 173-26-221(5)(a-b)).~~

~~Policy 21.10: Selective pruning of trees for safety and view protection, and the removal of noxious weeds should be allowed. (WAC 173-26-221(5)(c))~~

~~Policy 21.11: Upon completion of construction/maintenance projects on shorelines, disturbed areas should at a minimum be restored to pre-project configuration wherever possible, replanted with native species and provided maintenance care until the newly planted vegetation is established.~~

~~PUBLIC ACCESS POLICIES — PHYSICAL AND VISUAL~~

~~Policy 22.1: Protect navigation of waters of the state, the space needed for water dependent uses, and views of the water through development standards. (WAC 173-26-221(4)(b)(ii-iv)).~~

~~Policy 22.2: Transportation and parking plans within Shoreline jurisdiction shall include systems for public access, including pedestrian, bicycle, and public transportation where appropriate.~~

~~Policy 22.3: To provide public access planning in conformance with WAC 173-26-221(4), Yakima County uses the following approach to provide public access to Shoreline areas:~~

~~1) Yakima County has a very high proportion of federal, state and other publicly owned or conservancy owned lands in Shoreline areas. These publicly owned Shoreline areas constitute a large portion of the county's total shoreline area. Yakima County emphasizes the use of those public lands to provide public access.~~

~~2) Many of the above lands have improved sites and locations to promote physical access to shorelines. Yakima County relies on these agencies to develop new public access facilities as they deem appropriate.~~

~~3) Many of the above lands are open to unimproved public access, as well.~~

~~4) Many Shoreline areas are also along transportation corridors which provide visual access to much of the County's shoreline areas.~~

~~5) Due to the nature of Yakima County's shorelines, commercial water oriented uses, existing and new, tend to be highly related to water enjoyment uses and recreation.~~

~~6) Due to the nature of Yakima County's shorelines, recreational uses, existing and new, tend to be highly oriented toward the water, thereby providing access to shoreline areas.~~

~~7) Yakima County relies on the development of commercial water oriented uses and recreational uses to provide additional public access opportunities.~~

~~8) Development standards for dedicated and improved public access to the shoreline and visual quality should be required for public developments, with few exceptions. Public projects should provide public access, except where it is demonstrated to be infeasible due to reasons of safety, security, or impact to the shoreline environment. Private projects should provide public access in limited situations. (WAC 173-26-221(4)(d)(ii-iii))~~

~~Policy 22.4: Promote and enhance diversified types of public access to shorelines in Yakima County which may accommodate intensified use without significantly impacting fragile natural areas intolerant of human use and without infringing on rights of private ownership.~~

~~Policy 22.5: Access to recreational areas should emphasize both aerial and linear access (parking areas and trails or bicycle paths, for example) to prevent concentrations of use at a few points. Linkage of shoreline parks and public access points by means of linear access should be encouraged.~~

~~Policy 22.6: Development standards should be established to assure preservation of unique, fragile, and scenic elements and to protect existing views from public property or large numbers of residences. Where aesthetic impacts are not avoidable, provide mitigation. (WAC 173-26-221(4)(d)(iv))~~

~~Policy 22.7: Where there exists a conflict between public access or a water dependent use, and the maintenance of an existing view from adjacent properties, the physical public access or water dependent use should have priority unless there is a compelling reason to the contrary. (WAC 173-26-221(4)(d)(iv)).~~

~~Policy 22.8: Proper design, location, and construction of road and railroad facilities should be exercised to provide to the degree practical, scenic corridors, rest areas, view points, and other public oriented facilities in public shoreline areas.~~

~~Policy 22.9: Wherever feasible, utility facilities should be placed underground.~~

~~Policy 22.10: Outdoor sign size, spacing and lighting should conform to the Scenic Vistas Act (RCW 47.42) and standards in the Zoning Ordinance.~~

ARCHAEOLOGICAL AND HISTORIC RESOURCES

~~Policy 23.1: Encourage the protection and restoration of areas and sites in Yakima County having historic, archaeological, cultural, educational or scientific value. Wherever possible, sites should be permanently preserved for scientific study and public observation.~~

~~Policy 23.2: Development along shorelines should include consultation with professional archaeologists, historians, and biologists to identify areas containing potentially valuable data, and to establish procedures for salvaging the data or maintaining the area in an undisturbed condition.~~

~~Policy 23.3: Shoreline permits should contain special provisions which require developers to immediately stop work and notify local governments, the Office of Archeological and Historic Preservation, and affected tribes, if any possible archaeological or historic resources are uncovered during excavations (WAC 173-26-221(1)(c)(i)).~~

~~Policy 23.5: Development which would destroy archaeological or historical sites or data may be delayed for a reasonable time to allow the appropriate agency or organization to purchase the site or to recover the data.~~

WATER QUALITY, STORMWATER, AND POLLUTION

~~Policy 24.1: Shoreline water quality should be protected as follows:—~~

- ~~1. Rely on a County stormwater program meeting state and federal stormwater control requirements where possible;~~
- ~~2. Use Critical Aquifer Recharge Area protection measures in the Critical Areas Ordinance;~~
- ~~3. Control drainage and surface runoff from all non-agricultural facilities requiring large quantities of fertilizers and pesticides (such as golf courses and play fields) to prevent contamination of water areas;~~
- ~~4. All developments shall comply with County Health regulations, when applicable;~~
- ~~5. Handle and dispose of pesticides in accordance with provisions of the Washington Pesticide Application Act (RCW 17.21) and the Washington Pesticide Act (RCW 14.47);—~~
- ~~6. Proper design, location, and construction of all facilities should be exercised to prevent the entry of pollutants or waste materials into the water body.~~
- ~~7. When earthen materials are moved within shoreline areas, measures to adequately protect water quality should be provided.~~
- ~~8. Water quality protection measures should not impact recreation opportunities (WAC 173-26).~~

~~Policy 24.2: Agricultural erosion control measures should conform to rules and standards established by the Conservation Districts of Yakima County.—~~

~~Policy 24.3: In planning for marina location and design, special water quality considerations should be given to:~~

~~Fuel handling and storage facilities to minimize accidental spillage;~~

~~Proper water depth and flushing action for any area considered for overnight or long-term moorage facilities;~~

~~Adequate facilities to properly handle wastes from holding tanks.~~

~~Policy 24.4: Prohibit sanitary landfills along shoreline areas. Otherwise the disposal of all solid wastes should proceed in accordance with the Yakima County Solid Waste Management Plan.~~

SHORELINE USE POLICIES

~~Policy 25.1: Establish a system of shoreline uses that (WAC 173-26-241(2)); Gives preference to uses with minimal impacts and that are dependant on the proximity to the water; Protects the public's health, safety, and welfare; ecological functions; and property rights; Establishes conditional uses to provide extra protection for the shoreline.~~

~~Policy 25.2: Assure that new shoreline development in Yakima County is consistent with a viable pattern of use suitable to the character and physical limitations of the land and water.~~

~~Policy 25.3: Encourage sound management of renewable and nonrenewable natural resources.~~

Recreation

~~Policy 25.4: Assure the preservation and expansion of diverse, convenient recreational opportunities along the public shorelines of Yakima County for public use, consistent with the capacity of the land to accommodate such activity. Accomplish this by ensuring that shoreline recreational development is given priority and is primarily related to access, enjoyment and use of the water and Shorelines of the State (WAC 173-26-241(3)(i)).~~

~~Policy 25.5: Where the uses designated for a specific recreational area are planned to satisfy a diversity of demands, these uses must be compatible with each other and the environment of the area.~~

~~Policy 25.6: Where feasible and desirable, encourage the use of public lands for recreational facilities as a more economical alternative to new acquisitions by local agencies.~~

~~Policy 25.7: Locate, design, construct and operate recreational facilities to prevent undue adverse impacts on natural resources of an area and on adjacent or nearby private properties.~~

Transportation and Parking

~~Policy 25.8: Encourage a transportation network in Yakima County capable of delivering people, goods, and services, and resulting in minimal disruption of the shorelines' natural system.~~

~~Policy 25.9: When it is necessary to locate major highways, freeways and railways along stream drainages or lake shores, such facilities should be sufficiently set back so that a useable shoreline area remains. Care should also be taken to insure that a minimum land area is consumed.~~

~~Policy 25.10: To avoid wasteful use of the limited supply of shore land, locate access roads and parking areas upland, away from the shoreline whenever such options are available. Access to the water should be provided by pathways or other methods. Parking facilities in shorelines are not a preferred use and should be allowed only as necessary to support an authorized use. (WAC 173-26-241(3)(k))~~

~~Policy 25.11: Proper design, location, and construction of road and railroad facilities should be exercised to:~~

- ~~1. Minimize erosion and permit the natural movement of water;~~

~~2. Use existing topography to maximum advantage and preserve natural conditions to the greatest practical extent.~~

~~Policy 25.12: Extensive loops or spurs of old highways with high aesthetic quality or bicycle route potential should be kept in service as pleasure bypass routes.~~

~~Agriculture~~

~~Policy 25.13: Allow lawfully established agricultural activities occurring on agricultural lands to continue as they historically have. New agricultural activities on land not currently used for agriculture, conversion of agricultural lands to other uses, and other development on agricultural land that does not meet the definition of agricultural activities (including any agricultural development not specifically exempted by the provisions of RCW 90.58.030(3)(e)(iv)) should meet shoreline requirements. (WAC 173-26-241(3)(a)(ii, iii, & v))~~

~~Policy 25.14: Encourage animal feedlot operations to locate away from shorelines.~~

~~Aquaculture~~

~~Policy 25.15: Consider aquaculture a preferred shoreline use when consistent with the control of pollution and prevention of damage to the environment. (WAC 173-26-241(3)(b))~~

~~Policy 25.16: Ensure that aquacultural uses do not conflict with other water dependent uses or navigation, spread disease, and establish non-native species that cause significant ecological impact, or significantly impact the aesthetic qualities of the shoreline. Protect spawning areas designated by the Department of Fish and Wildlife from conflicting uses. (WAC 173-26-241(3)(b))~~

~~Boating Facilities and Marinas~~

~~Policy 25.17: Ensure that boating facilities are located only at sites with suitable environmental conditions, shoreline configuration, access, and neighboring uses. All marinas should be developed and operated in accordance with all state and local requirements (WAC 173-26-241(3)(c)(i))~~

~~Policy 25.18: In planning for marina location and design, special consideration should be given to necessary facilities such as adequate access, parking, and restroom facilities for the public. Such facilities should be located away from the immediate water's edge.~~

Forest Practices

~~Policy 25.19:— Shoreline areas having well-known scenic qualities (such as those providing a diversity of views, unique landscape contrasts, or landscape panoramas) should be maintained as scenic views in timber harvesting areas. Timber harvesting practices, including road construction and debris removal, should be closely regulated so that the quality of the view and viewpoints along shorelines of statewide significance in the region are not degraded.——~~

~~Policy 25.20:— Forest management shall proceed in accordance with regulations established by the Washington State Forest Practices Act, including coordination with Yakima County on forest practice conversions and other Class IV forest practices where there is a likelihood of conversion to non-forest uses.~~

~~Policy 25.21:— Ensure that timber harvesting on shorelines of statewide significance does not exceed the limitations established in RCW 90.058.150 (regarding selective harvest requirements), except as provided in cases where selective logging is rendered ecologically detrimental or is inadequate for preparation of land for other uses.~~

Mining

~~Policy 25.22:— Remove sand, gravel, and minerals from only the least sensitive shoreline areas. Due to the risk of avulsion and mine pit capture by the river, mining within the stream channel and channel migration zone should not be allowed. In special cases where it is allowed, it should be a conditional use. Restoration or enhancement of ecological function is encouraged. (WAC 173-26-241(h)(ii)(d-e), WAC 173-26-211(5)(e), WAC 173-26-221 (2)(c)(iv), SMP 15.04, SMP 15.16)~~

~~Policy 25.23:— Require land reclamation plans of any mining venture proposed within a shoreline. Mining reclamation shall be done in conformance with the Washington State Surface Mining Act (RCW 78.44).~~

~~Policy 25.24:— Ensure that mining and associated activities are designed and conducted consistent with the applicable environment designation and the applicable critical areas ordinance. (WAC 173-26-241(h)(ii)(a))~~

~~Policy 25.25:— Ensure that proposed subsequent use of mined property and the reclamation of disturbed shoreline areas is consistent with the applicable environment designation and that appropriate ecological functions are provided consistent with the setting. (WAC 173-26-241(h)(ii)(C))———~~

Residential Development

~~Policy 25.26:— Design subdivisions at a density, level of site coverage, and occupancy compatible with the physical capabilities of the shoreline and water, and locate them to prevent the need for new shore stabilization or flood hazard reduction measures. (WAC 173-26-241(3)(j))~~

~~Policy 25.27:— Restrict subdivisions in areas subject to flooding.~~

~~Policy 25.28:— Encourage cluster development wherever feasible to maximize use of the shorelines by residents, maximize both on-site and off-site aesthetic appeal, and minimize disruption of the natural shorelines.~~

Commercial Development

~~Policy 25.29:— Limit commercial development to those activities that are particularly dependent upon a shoreline location. Other commercial uses should be encouraged to locate upland. Give first preference to water dependent commercial uses over non-water dependent commercial uses; and give second preference to water related and water enjoyment commercial uses over non-water oriented commercial uses. Allow non-water oriented commercial uses in limited situations. (WAC 173-26-241(3)(d)).~~

Utilities

~~Policy 25.30:— New utility production and processing facilities, such as power plants and sewage treatment plants, or parts of those facilities that are non-water oriented should not be allowed in shoreline areas unless it can be demonstrated that no other feasible option is available. Expansion, updating, and maintenance of existing facilities is allowed but should be designed to minimize the impacts as much as possible. (WAC 173-26-241(3)(l))~~

~~Policy 25.31:— Wherever possible, transmission facilities for the conveyance of services, such as power lines, cables, and pipelines, should be located outside of the shoreline area. If location within the shoreline cannot be prevented, confine utilities in a single corridor or within an existing right-of-way. (WAC 173-26-241(3)(l))~~

~~Policy 25.32:— Locate new sewage treatment, water reclamation, and power plants where they do not interfere with and are compatible with recreational, residential or other public uses of water and shore lands. New waste treatment ponds for industrial waste should be located upland when feasible. (Note: this policy was originally in the Industrial Facilities section, but is proposed to be located here.)~~

Industry

~~Policy 25.33:— Allocate sufficient quantities of suitable land for water related industry. Give preference to water dependent industrial uses over non-water dependent industrial uses; and second, give preference to water related industrial uses over non-water oriented industrial uses. Allow non-water oriented industrial development in limited situations. (WAC 173-26-241(3)(f))~~

~~Policy 25.34:— Discourage industries which have proven to be environmentally hazardous from locating along the shorelines.~~

In-stream Structural Uses

~~Policy 25.35:— The location and planning of in-stream structures should give due consideration to the full range of public interests, watershed functions and processes, and environmental concerns, with special emphasis on protecting and restoring priority habitats and species. (WAC 173-26-241(3)(g))~~

~~Policy 25.36:— All in-stream structures should provide for the protection and preservation of ecosystem-wide processes, ecological functions, and cultural resources, including, but not limited to, fish and fish passage, wildlife and water resources, shoreline critical areas, hydrogeological processes, and natural scenic vistas. (WAC 173-26-241(3)(g))~~

SHORELINE MODIFICATION POLICIES

General Shoreline Modification Policies

~~Policy 26.1: Allow shoreline modifications only where they are shown to be necessary to support or protect an allowed primary structure or a legally existing shoreline use that is in danger of loss or substantial damage, or they are necessary for mitigation or enhancement work. (WAC 173-26-231(2)(a))~~

~~Policy 26.2: Limit shoreline modifications to the minimum necessary to accomplish the objective, while still protecting ecological functions. Give preference to shoreline modifications that have a lesser impact on ecological functions. (WAC 173-26-231(2)(b-d))~~

Shore Stabilization

~~Policy 26.3: New structural stabilization measures should only be allowed for the following instances, and then only when meeting specific criteria:~~

- ~~1. When necessary to protect an existing primary structures;~~
- ~~2. In support of new and existing development;~~
- ~~3. To protect projects for the restoration of ecological functions or hazardous substance remediation projects. (WAC 173-26-231(3)(a)(iii))~~

~~Policy 26.4: Avoid flood protection and stabilization measures which result in or tend toward channelization of streams such as, hardening of stream banks, or fixing channel locations. (WAC 173-26-211(5)(C) & (WAC 173-26-221(2)(C)(iv))~~

~~Policy 26.5: All shore stabilization activities must be designed and constructed to accepted engineering standards.~~

Fill

~~Policy 26.6: Allow normal and reasonable land grading and filling where necessary to develop a land area for a permitted use. There should be no substantial changes made in the natural drainage patterns and no reduction of flood water storage capacity that might endanger other areas. Allow fill within the ordinary high water mark only when necessary to support water dependent uses, public access, transportation facilities, mitigation, restoration, enhancement, and certain special situations listed in WAC 173-26-231(3)(c).~~

~~Policy 26.7: In evaluating fill projects, such factors as total water surface reduction, navigation restriction, impediment to water flow and circulation, impediment to irrigation systems, reduction of water quality, and destruction of fish and wildlife habitat should be examined.~~

~~Policy 26.8: Locate and design shoreline fills or cuts to avoid creating a hazard to adjacent life, property, and natural resources systems, and to provide all perimeters of fills with vegetation, retaining walls, or other mechanisms for erosion prevention.~~

Dredging

~~Policy 26.9: Dredging should only be permitted for maintaining existing navigation uses, not for obtaining fill material or mining. (WAC 173-26-231(3)(f); SMP 15.16)~~

~~Policy 26.10: — Permit deposit of spoils in water areas only to improve habitat or when the alternative is more detrimental than depositing in water areas.~~

~~Piers and Docks~~

~~Policy 26.11: — Piers and docks should only be allowed for water dependent uses and public access, except that water enjoyment and water related uses may sometimes be included as part of a mixed use development. New piers and docks must have a specific need and must be the minimum size necessary. (WAC 173-26-231(3)(b)) Encourage the cooperative use of shared docks.~~