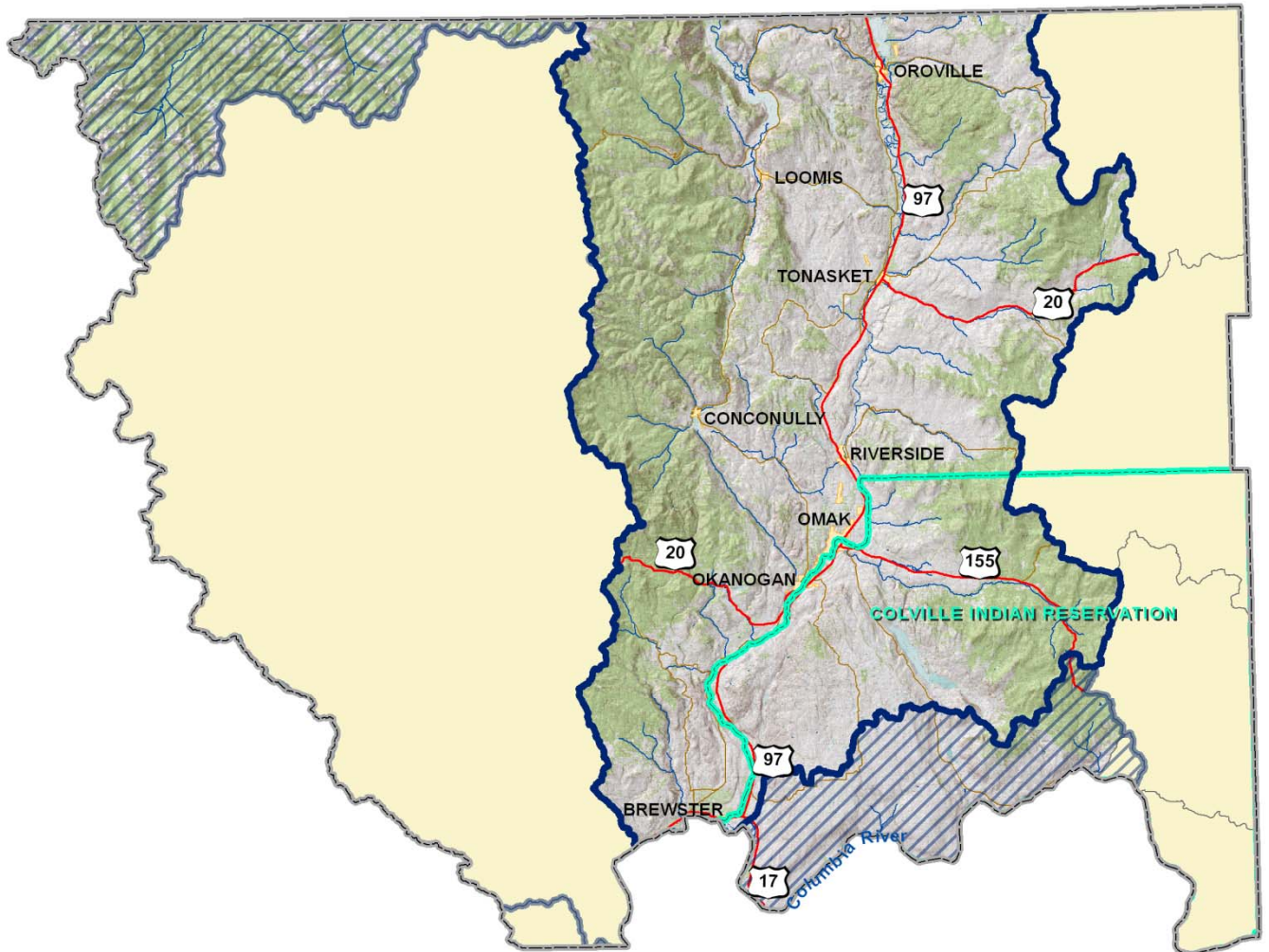


OKANOGAN WATERSHED PLAN

Glossary and Acronyms



CHAPTER CONTENTS

- Special terminology and letters or groups of letters used in the plan and appendices to represent a word or phrase in shortened form are explained and defined in this section



GLOSSARY & ACRONYMS

acre-foot: *A measurement of water. The volume of water required to cover 1 acre of land to the depth of 1 foot.*

afy: *acre-foot year*

Anadromous fish: *live in the ocean mostly, and breed in fresh water. Species, such as salmon and steelhead, which hatch in fresh water, spend a large part of their lives in the ocean, and return to fresh water rivers and streams to reproduce.*

Ambient air temperature: *surrounding air temperature*

Appropriation: *The process of legally acquiring the rights to specific amounts of water for application to beneficial uses. (WAC 173-500-050)*

ASR: *Aquifer Storage and Recovery -A water resource management technique whereby a confined aquifer is artificially recharged via surface spreading and percolation or an injection well. The water is stored for a period of time and subsequently recovered to meet water demands. The same well is used for both recharge and recovery. Water stored in these subsurface reservoirs is protected from losses associated with evaporation, transpiration, seepage, and contamination.*

Aquifer: *The underground layer of rock or soil in which groundwater resides capable of yielding a significant amount of water to wells or springs. Aquifers are replenished or recharged by surface water percolating through soil.*

Basin: *The area of land that drains water, sediment and dissolved materials to a common point along a stream channel.*

Baseline: *1. A line serving as a basis, as for measurement, calculation, or location. 2. A measurement, calculation, or location used as a basis for comparison.*

BOR: *Bureau of Reclamation is an agency under the U.S. Department of the Interior and oversees water resource management, specifically as it applies to the oversight and/or operation of numerous water diversion, delivery, and storage and hydroelectric power generation projects it built throughout the western United States.*

CCT: *The Confederated Tribes of the Colville Reservation - The Colville Indian Reservation land base covers 1.4 million acres or 2,100 square acres located in North Central Washington, primarily in Okanogan and Ferry counties.*

CDAP: *Cumulative Departure of Average Precipitation One way that water managers assess historic rainfall patterns to predict potential water availability in the future is to produce "cumulative departure from average precipitation curves". These are simple plots of annual rainfall, minus average annual rainfall, cumulatively added and plotted over time. Thus if any year has 20" of precipitation and average annual rainfall is 15", the departure from average for that year is $20" - 15" = +5"$. If the annual*



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precipitation is 10", the departure from average would be $10'' - 15'' = -5''$. Then you simply add all of the years (cumulatively, one at a time, from year 1-???) and plot them to look for wet and dry periods.

cfs: cubic feet per second – units assigned to the volume of water that flows past a fixed point in a river channel every second; discharge or rate of flow; equivalent to 449 gallons per minute (gpm).

Chinook: A species of anadromous fish in the salmon family.

CI : Commercial and Industrial

Confluence: *the flowing together of two or more streams* **b:** *the place of meeting of two streams* **c:** *the combined stream formed by conjunction*

Conservation: (1) *Increasing the efficiency of energy use, water use, production, or distribution.* (2) *The careful and organized management and use of natural resource, for example, the controlled use and systematic protection of natural resources, such as forests, soil, and water systems in accordance with principles that assure their optimum long-term economic and social benefits. Also, preservation of such resources from loss, damage, or neglect.*

Cropland: *land that is suited to or used for crops.*

DDD: (Dichlorodiphenyldichloroethane) *is an organochlorine insecticide that is slightly irritating to the skin. DDD is a metabolite of DDT. DDD is colorless and crystalline; it is closely related chemically and is similar in properties to DDT, but it is considered to be less toxic to animals than is DDT.*

DDE: (Dichlorodiphenyldichloroethylene) *This compound is formed by the loss of hydrogen chloride (dehydrohalogenation) of DDT of which it is one of the more common breakdown products.*

DDT: (Dichloro-Diphenyl-Trichloroethane) *is one of the most well-known synthetic pesticides.*

Dissolved Oxygen (DO): *Oxygen which is present (dissolved) in water and therefore available for fish and other aquatic animals to use. If the amount of DO in the water is too low, marine animals suffer from suffocation. Wastewater often contains oxygen-demanding substances that can consume dissolved oxygen if discharged into the environment. (Minimum allowed reading at any time 8.0 mg/L)*

DOE: *Department of Ecology*

Drainage basin: *The land area that gathers water and contributes it to a body of surface water. Also called the watershed of the receiving water body.*

Ecological site: *is typified by a characteristic hydrology, particularly infiltration and runoff, which has developed over time.*

Endangered: *A population of an organism which is at risk of becoming extinct because it is either few in numbers, or threatened by changing environmental or predation parameters. Means any species which is in endanger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta as determined by the Secretary to constitute a pest whose protection under would provide an overwhelming and overriding risk to man. (7 U.S.C. §136; 16 U.S.C. §460 et seq. (1973))*



Evapotranspiration: *That portion of the precipitation returned to the air through direct evaporation and by transpiration of plants (including crops, trees, and other vegetation).*

Enhancement: *Emphasis on improving the value of particular aspects of water and related land resources.*

Exempt wells: *Domestic water wells not requiring a water right permit from Dept. of Ecology. Under current law, use from one well must be less than 5000 gallons per day and used for domestic purposes and/or the irrigation of no more than one-half acre of lawn or non-commercial garden.*

Fatal flaw: *An event or condition that could cause an unanticipated problem or prevent an opportunity from achieving its objectives and goals. A fatal flaw can be relatively transparent and associated with assumptions made or can be intangible and difficult to identify. A fatal flaw analysis can apply to any aspect of a project.*

Fecal coliform: *A group of bacteria passed through the excrement of wildlife, livestock, and humans that can enter aquatic environments through the waste from mammals and birds, agricultural and storm runoff, and from untreated human sewage that may enter streams through leaking septic systems or storm water overflows. Fecal coliform by themselves are usually not pathogenic; they are indicator organisms, which means they may indicate the presence of other pathogenic bacteria that can cause infection or disease in humans.*

Fluvial: *deposits and landforms created by the action of rivers or streams and the processes associated with them.*

gpm: *gallons per minute - is a unit of volumetric flow rate of liquids.*

Geomorphology: *is the scientific study of landforms and the processes that shape them.*

Glaciation: *Alteration of the earth's solid surface through the action of glaciers.*

Groundwater flow: *The movement of water through openings in sediment and rock.*

Group A water system: *A residential water delivery system that has more than 15 individual connections—typically these are municipalities.*

Group B water system: *Group B public water systems are very small water systems. Most Group B water systems serve two to 14 homes. Other Group B water systems serve small businesses that employ fewer than 25 people or have no more than 25 customers per day.*

Habitat: *The specific area or environment in which a particular type of plant or animal lives. An organism's habitat must provide all of the basic requirements for life and should be free of harmful contaminants.*

Hydrology: *is the study of the movement, distribution, and quality of water throughout the Earth, and thus addresses both the hydrologic cycle and water resources.*



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Instream flow: *A base flow adopted into Washington State regulations used to condition water rights. A water right for instream resources such as fish, wildlife, recreation, esthetics, navigation, stock watering, and water quality with a priority date set when the instream flow rule was adopted.*

Junior right: *A water right that is more recent in relation to other water rights, and in times of limited water is legally able to be satisfied only after senior water rights have been fulfilled.*

Large Woody Debris (LWD): *Any large piece of relatively stable woody material having a diameter greater than 10 cm and a length greater than 3 meters. LWD is an important part of the structural diversity of streams. The nature and abundance of LWD in a stream channel reflects past and present recruitment rates, which are largely determined by the age and composition of past and present adjacent riparian stands.*

Lead Agency: *Under RCW 90.82, an organization designated by the initiating governments for the purposes of receiving and administering State grant funds related to watershed planning.*

MAF: *Mean annual flow*

Mainstem: *is defined as the principal river within a given drainage basin, in the case where a number of tributaries discharge into a larger watercourse.*

Metals: *Elements, such as mercury, lead, nickel, zinc, and cadmium, that are of environmental concern because they do not degrade overtime. Although many are necessary nutrients, they are sometimes magnified in the food chain, and they can be toxic to life in high enough concentrations.*

mgy: *million gallons year*

Morphology: *the external structure of rocks in relation to the development of erosional forms or topographic features*

MWH: *Montgomery Watson Harza*

NPDES: *National Pollution Discharge Emission System*

NRCS: *Natural Resource Conservation Service*

Nephelometric turbidity units (NTU): *A unit of measure for the turbidity of water resulting from the use of a Nephelometer and based on the amount of light that is reflected off the water.*

OCD: *Okanogan Conservation District*

Okanogan PUD: *Okanogan Public Utility District*

OTID: *Oroville-Tonasket Irrigation District*



PCB's: (Polychlorinated biphenyls) PCB production was banned in the 1970s due to the high toxicity of most PCB congeners and mixtures. PCBs are classified as persistent organic pollutants which bioaccumulate in animals.

pH: A measure of the number of free hydrogen (H^+) positive ions in solution compared to the number of hydroxide (OH^-) negative ions in solution. A lower pH value indicates more H^+ ions and a more acid medium. A higher pH value means more OH^- ions and a more basic or alkaline medium. (criteria 6.5 to 8.5 with no human caused change allowed to alter background pH by more than 0.5 units)

PRISM: (Parameter-elevation Regressions on Independent Slopes Model) climate mapping system, developed by Dr. Christopher Daly, PRISM Climate Group director. PRISM is a unique knowledge-based system that uses point measurements of precipitation, temperature, and other climatic factors to produce continuous, digital grid estimates of monthly, yearly, and event-based climatic parameters. Continuously updated, this unique analytical tool incorporates point data, a digital elevation model, and expert knowledge of complex climatic extremes, including rain shadows, coastal effects, and temperature inversions. PRISM data sets are recognized world-wide as the highest-quality spatial climate data sets currently available. PRISM is the USDA's official climatological data.

Recharge: The addition of water to groundwater through either 1) direct recharge with surface water injection wells or spreading basins, or 2) in-lieu recharge whereby surface water is used instead of groundwater and the water not extracted is considered stored.

Redd: The spawning area or nest of salmonids. The nest is dug into stream gravel to allow water to provide oxygen to the developing embryos and flush out biological wastes.

Relinquishment: Water rights reverting to the State for reappropriation because of failure to beneficially use all or part of the right for a five year period. (see RCW 90.14.160)

Resident fish: Fish species that complete their entire life cycle in freshwater.

Return flows: That part of a diverted flow that is not consumptively used and returned to its original source or another body of water. (2) (Irrigation) Drainage water from irrigated farmlands that re-enters the water system to be used further downstream. (USGS)

Riparian: Relating to or living or located on the bank of a natural watercourse (as a river) or sometimes of a lake or a tidewater Pertaining to the banks and other adjacent, terrestrial (as opposed to aquatic) environs of freshwater bodies, watercourses, and surface-emergent aquifers, whose imported waters provide soil moisture significantly in excess of that otherwise available through local precipitation – soil moisture to potentially support a mesic vegetation distinguishable from that of the adjacent more xeric upland.

Runoff: The portion of precipitation or irrigation water that moves across land as surface flow and enters streams, ditches, drains, or other surface receiving waters. Runoff occurs when the precipitation rate exceeds the infiltration rate.

Salmonid: A fish belonging to the family Salmonidae, including salmon, trout, char, and allied freshwater and anadromous fishes.



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Senior right: *A water right that is older in relation to other water rights, and is legally able to be satisfied before others in times of limited water.*

Shrub-steppe: *is a type of low rainfall natural grassland. Shrub-steppes are distinguishable from deserts, which are too dry to support a noticeable cover of perennial grasses or other shrubs, while the shrub-steppe has sufficient moisture levels to support a cover of perennial grasses and/or shrubs. Rainfall range is approximately 9 to 25 inches depending upon elevation, aspect, soils, and slope.*

Steelhead trout: *an anadromous rainbow trout; Federally listed, August 1997, as an endangered species in the Okanogan River subbasin.*

Temperature: *Temperature is a complex criteria that is naturally affected by many variables, including local climate, the hydrology of the waterbody, and elevation. Temperature is important because it governs the kinds of aquatic life that can live in a stream. Temperature is reported in degrees on the Celsius temperature scale (C). (The criteria is 17.5°C (63.5°F) not to exceed the average of maximum temperatures for the three previous and following days).*

Threatened: *having an uncertain chance of continued survival <a threatened species> ; specifically : likely to become an endangered species(7 U.S.C. §136; 16 U.S.C. §460 et seq. (1973))*

Total Maximum Daily Limit (TMDL): *An amount of a particular element or contaminant that can be in a water body, the value of which, if exceeded, will be more than what is allowable under current water quality regulations or that exceed safe levels for humans.*

Total suspended solids (TSS): *Solids, found in waste water or in a stream, which can be removed by filtration.*

Turbidity: *A measurement of the amount of material suspended in the water. Increasing the turbidity of the water decreases the amount of light that penetrates the water column. High levels of turbidity are harmful to aquatic life and fail federal water quality standards. (5 NTU over background, though background may not have been established on the Okanogan River)*

Urban Growth Boundary: *A regional boundary, set in an attempt to control urban sprawl by allowing the area inside the boundary for higher density urban development and the area outside for lower density development. RCW 36.70A provides the legal framework for setting urban growth boundaries.*

USGS: *United States Geological Survey*

Water Exchange: *A transfer of water from willing sellers to other water users, usually from a low-valued use to higher-valued uses. Most banking occurs within a localized region due to the cost and infrastructure requirements to transport water long distances as well as regulatory provisions that limit the transfer and movement of water. Water banking involves many functions, including determining the quantity of bankable water, limiting who can purchase or rent from the bank, setting contract terms, and dealing with any regulatory agencies.*

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Water right: *The legal right to use a specific quantity of water on a specific time schedule, at a specific place and for a specific purpose. In 1917 legislation was passed providing that all surface water (and in 1945 all ground water) within the State belonged to the State, and any right to use the water could be obtained by filing an application and being granted a permit for the development of the water system*

Water right claim: *A water right claim is not a water right. It is a registration with the State by the property owner regarding water use not authorized by a permit or certificate. A claim may represent a valid water right if it describes a water use existing prior to water codes: 1917 for surface water and 1945 for ground water. Claims registered are evaluated for sufficient evidence to satisfy the Dept. of Ecology that a valid water right would be confirmed if the claim were adjudicated.*

Water right permit: *An approval of an application by the Washington State Department of Ecology, allowing construction of a water system and use of water.*

watershed: *The geographic region within which water drains into a particular river, stream, or body of water. A watershed includes hills, lowlands, and the body of water into which the land drains. Watershed boundaries are defined by the ridges of separating watersheds.*

water year: *The 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends.*

wetland: *Lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface and the lands covered either seasonally or permanently by shallow water.*

WRATS/GWIS database: Water Rights A Tracking System/Ground Water Information System – Washington Department of Ecology computerized method of keeping track of all water rights documents.

WRIA 49: Water Resource Inventory Area – Washington State Department of Ecology has established 62 of these areas that encompass all watersheds in Washington State. With a few exceptions, the boundaries of these WRIAs following watershed divides.

