EVALUATION OF THE ADEQUACY OF THE FINAL ENVIRONMENTAL IMPACT STATEMENT FOR WATERSHED PLANNING UNDER CHAPTER 90.82 RCW (ECOLOGY 2003) IN MEETING SEPA REQUIREMENTS ASSOCIATED WITH ADOPTION OF THE KLICKIRAT RIVER WATERSHED MANAGEMENT PLAN, WRIA 30

Klickitat County Planning Department

March 27, 2006

Evaluation of the Adequacy of the Final Environmental Impact Statement for Watershed Planning Under Chapter 90.82 RCW (Ecology 2003) in Meeting SEPA Requirements Associated with Adoption of the Klickitat River Watershed Management Plan, WRIA 30

Prepared for

Klickitat County Planning Department

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1.0 OVERVIEW OF WASHINGTON DEPARTMENT OF ECOLOGY'S STATEWIDE NON-PROJECT EIS

In 2003, Washington Department of Ecology (Ecology) developed an Environmental Impact Statement (EIS) addressing the development and approval of watershed plans under provisions of the Watershed Planning Act (Chapter 90.82 Revised Code of Washington (RCW)) and rule making undertaken by state agencies to support implementation of such watershed plans. The EIS was intended to serve two purposes:

- To assist local planning units, lead agencies, and legislative authorities in satisfying State Environmental Policy Act (SEPA) environmental review requirements necessary for approval of individual watershed plans prepared under authority of Chapter 90.82 RCW; and
- To assist state agencies in satisfying SEPA environmental review requirements for any rule making that may be needed to implement individual watershed plans, including instream flow rules.

The EIS developed by Ecology is a statewide, non-project EIS. As a statewide document, the EIS does not contain site specific information concerning individual watersheds within which watershed planning is occurring under Chapter 90.82 RCW. It does, however, provide basic information to local decision makers regarding the Watershed Planning Act (Chapter 90.82 RCW), pertinent laws, regulations, and programs, general state of Washington's environments, possible recommended actions, and potential significant adverse environmental impacts and mitigation measures.

The EIS is intended to assist local decision makers in meeting SEPA requirements, but does not eliminate the need to comply with SEPA. The SEPA rules allow for adoption of existing environmental documents that analyze all or part of the environmental impacts of a proposed action (Chapter 197-11-600 Washington Administrative Code (WAC)). In this context, the statewide, non-project EIS can be adopted to meet part or all of the SEPA requirements associated with adoption and implementation of the Klickitat River Watershed Management Plan in Water Resource Inventory Area (WRIA) 30.

All actions specified in the Klickitat River Watershed Management Plan (WRIA 30 Plan) are adequately addressed in the Statewide EIS, are addressed other SEPA evaluations, or were determined to have no environmental impacts. Hence, the Klickitat County Planning Department intends that this document be adopted as an addendum to the Statewide EIS in fulfillment of the requirements specified in Chapter 90.82 RCW and SEPA.

2.0 SUMMARY OF THE KLICKITAT RIVER WATERSHED MANAGEMENT PLAN

2.1 FRAMEWORK

Water Resource Inventory Area (WRIA) 30 consists of the Klickitat River basin and the watershed area draining into the Columbia River between the mouth of the Klickitat River and the John Day Dam in Washington State. Roughly the southern half of the WRIA is in Klickitat County and the northern half is in Yakima County.

The WRIA 30 Plan addresses that portion of WRIA 30 that is outside of the Yakama Indian Reservation. The WRIA 30 Plan identifies key water resource issues regarding water quantity, water quality, and fish habitat within this water resource management area and the agreed-upon strategies to address those issues.

2.1.1 LEGAL FRAMEWORK

The WRIA 30 Plan was developed and approved in accordance with Chapter 90.82 RCW. The planning effort was initiated in 1999 with the concurrence of Klickitat County, Yakima County, City of Goldendale, and Public Utility District No. 1 of Klickitat County (KPUD). While supportive of watershed planning for WRIA 30, Yakima County elected not to participate in the process and opted out with the concurrence of the other Initiating Governments in accordance with the provisions of the statute. The Yakama Nation was invited to participate in the planning effort as an initiating government, but did not affirmatively accept the invitation.

2.1.2 VISION FOR WATER RESOURCES

The following is the vision statement for water resources within WRIA 30: "Water resources within Water Resource Inventory Area 30 are managed pursuant to a Watershed Management Plan developed through a community-based partnership. The quantity of water available is sufficient to meet the needs of current and future populations and support economic growth and agricultural needs. Aquatic and riparian habitats are properly functioning at levels that enhance fish and wildlife populations and provide recreation and other cultural benefits. The quality and management of water resources are contributing to the quality of life and long term economic wellbeing of the citizenry, community sustainability, and habitats."

2.1.3 PLANNING UNIT ORGANIZATION

As determined by the Initiating Governments, the composition of WRIA 30 Planning Unit, which developed this plan and will monitor its implementation, is representative of a wide range of water resource interests. The representatives of the following water resource interests were appointed as members representing units of government: the Washington State agencies, the City of Goldendale, KPUD, Klickitat County, the Central Klickitat Conservation District (CKCD), and the Klickitat County Water Conservancy Board. Other Planning Unit members represent large industry, small business, irrigators, timber

interests, environmental interests, and citizens at large. Invitations to participate as unit of government members of the WRIA 30 Planning Unit were extended to the Yakama Nation and the Klickitat County Health Department, and these invitations remain open should either body elect to participate on the Planning Unit in the future, subject to Klickitat Board of County Commissioners' appointment procedures.

2.1.4 SCOPE (WATER QUANTITY, QUALITY, AND FISH HABITAT)

The Initiating Governments chose to include three elements in the scope of planning: Water Quantity, Water Quality, and Habitat. In accordance with Chapter 90.82 RCW, assessments were completed to support the development of the WRIA 30 Plan. The assessments addressed the data and information regarding water quantity, water quality, and fish habitat that were available at the time the assessment was completed. Additional studies on multi-purpose water storage options, water quality, and future water demand were also completed.

2.1.5 PLANNING AREA

WRIA 30 is located in Klickitat and Yakima Counties, in south central Washington. The City of Goldendale and the communities of Lyle, Dallesport, Murdock, Wishram, Klickitat, Centerville, High Prairie, and Glenwood are located within the WRIA. The border of Washington and Oregon at the Columbia River is WRIA 30's southern boundary. For the purpose of the watershed assessment and planning activities, WRIA 30 was divided into six subbasins: Upper Klickitat, Middle Klickitat, Little Klickitat, Swale, Lower Klickitat, and Columbia River Tributaries. The Upper Klickitat Subbasin and the eastern part of the Middle Klickitat Subbasin are largely within the Yakama Indian Reservation, which is outside the geographical scope of this watershed management plan (Figure 1).

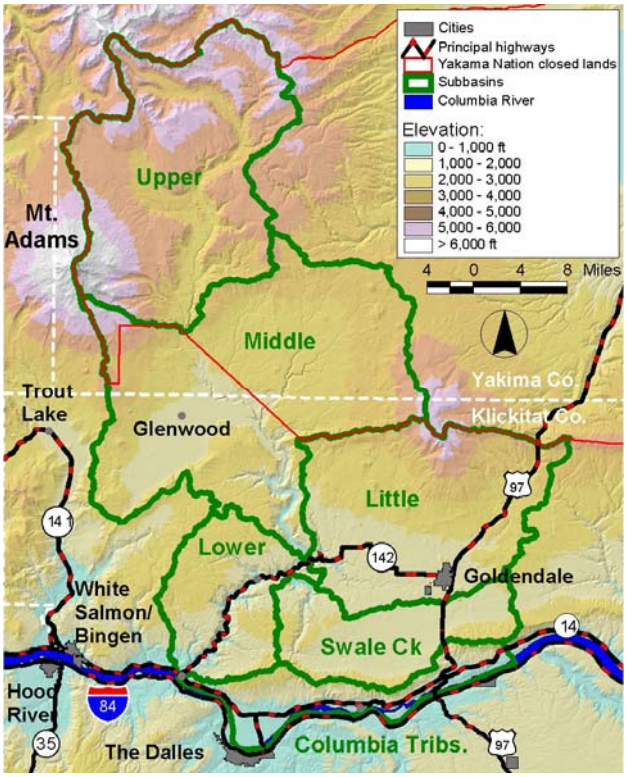

Figure 1. Map of WRIA 30 depicting major subbasins in the watershed.

2.1.6 APPROACH

The approach to development of the WRIA 30 Plan started with the identification of issues. The WRIA 30 Planning Unit developed a list of primary issues/problems regarding water quantity, water quality, and fish habitat in the WRIA based upon the results of the watershed assessment and public input.

Implementation of the WRIA 30 Plan is envisioned to be an adaptive management approach. Modifications of the WRIA 30 Plan may be developed in response to additional

information. Modification of the WRIA 30 Plan or the Detailed Implementation Plan will follow the process specified in the WRIA 30 Plan.

2.1.7 WATERSHED MANAGEMENT PLAN LIMITATIONS

Chapter 90.82.120 RCW sets forth several provisions that limit watershed management plans. These limitations are recognized and adhered to within the WRIA 30 Plan.

2.1.8 PLAN APPROVAL AND AMENDMENT PROCESS

As provided in Chapter 90.82.130 RCW, the WRIA 30 Plan was approved by consensus among the members of the WRIA 30 Planning Unit appointed to represent units of government and a majority vote of the nongovernmental members of the WRIA 30 Planning Unit. Following plan approval, the WRIA 30 Planning Unit (to be renamed the Water Resource Planning and Advisory Committee) will develop a Detailed Implementation Plan, as provided in Chapter 90.82.043 RCW and Chapter 90.82.048 RCW.

Amendment of an approved watershed management plan is addressed in Chapter 90.82.130(5) RCW and provides that Ecology may develop and adopt modifications to a watershed management plan or obligations imposed by a watershed management plan only through a form of negotiated rule making that uses the same processes that applied in the watershed for developing the plan. Approval of modifications to the WRIA 30 Plan or obligations under the Plan includes approval by the legislative authority of Klickitat County following a public hearing.

2.2 EXISTING CONDITIONS

2.2.1 PHYSICAL SETTING

The Upper Klickitat Subbasin contains many areas of high topographic relief, particularly near Mount Adams. Many of the headwater areas of the Little Klickitat River are also relatively steep. The remainder of WRIA 30 consists primarily of low rolling hills with the exception of areas where water features have dissected the underlying bedrock creating steep canyon areas. Such canyons can be found in the lower reaches of the Little Klickitat River, the lower Klickitat River Subbasin, the lower portion of Swale Creek, near the mouths of most of the tributaries to the Klickitat and Little Klickitat Rivers, and in the smaller tributaries along the Columbia River. There are several waterfalls in these reaches.

Mean annual precipitation generally increases with elevation and from east to west. Mean annual precipitation is as little as nine inches per year in the eastern end of the Columbia Tributaries Subbasin and as high as 105 inches per year on Mount Adams in the Upper Klickitat Subbasin.

Geology in the watershed is primarily of volcanic sources. Alluvium is present in depositional areas along lower gradient sections of streams. Additionally, a deposit of alluvium that is up to 250 feet deep is present in the Swale Valley. A fault on the western edge of the Swale Valley acts as a barrier to ground water flow out of this alluvial plain.

The majority of the watershed is forested. Shrublands are the second most common vegetation type in the watershed. Developed areas (commercial and residential) cover less than one percent of the land in the watershed.

2.2.2 POPULATION AND ECONOMY

In 1990, the total population of Klickitat County was 16,616 people (U.S. Census Bureau). The population grew to 19,547 persons in 2000. This is a 17.6 percent increase in population over ten years, but includes areas outside of WRIA 30. Subsequent to the year 2000 Census, the Washington State Department of Financial Management has estimated no growth for Klickitat County.

The area has traditionally relied on agricultural crop, livestock, and timber production as its primary economic sectors. Manufacturing, aggregate mining, tourism, and wholesale and retail trade also help support the local economy. Klickitat County, the City of Goldendale, KPUD, and others are actively seeking to increase economic diversity and employment opportunities in the area.

2.2.3 SURFACE WATER RESOURCES

Portions of the mainstem of the Klickitat River originate from Mount Adams, the Goat Rocks Wilderness area, and the foothills of the Cascades Mountains. Klickitat River flow is primarily fed by snowmelt in spring and early summer and by glacial meltwater in late spring and summer. Peak flows in the mainstem tend to occur in late May and early June. The Little Klickitat River flows from the Simcoe Mountains and is largely fed by snowmelt supplemented by base flow from ground water sources. Snow melts out of the Simcoe Mountains earlier than in the Cascade Mountains and snow pack tends to be substantially lower. Hence, peak flows in the Little Klickitat River tend to occur in late February or early March, roughly three months earlier than in the mainstem Klickitat River.

2.2.4 GROUND WATER RESOURCES

Ground water in WRIA 30 occurs both within the basalt bedrock units and in the surficial alluvium. The geologic units of primary significance with respect to WRIA 30 ground water are the alluvium, Quaternary volcanics (including the Simcoe volcanics), Wanapum basalt, and Grande Ronde basalt. Alluvial deposits tend to be found in depositional (flatter) areas. There are two known alluvial areas that provide substantial amount of ground water. These are located in the Swale Creek Valley and in the Camas Prairie area (Middle Klickitat Subbasin).

Quaternary-aged Simcoe Volcanics, which form the Simcoe Mountains, represent an important source of ground water. The majority of the documented springs in this subbasin discharge from the Simcoe Volcanics.

The Wanapum Basalt is the largest source for ground water supply, particularly for large irrigation and municipal withdrawals across the mid and southern portion of WRIA 30.

Yields from this aquifer are normally less than 500 gallons per minute (gpm), although a few of the deeper wells are capable of producing greater than 1,000 gpm. Relatively few wells within WRIA 30 produce ground water from the Grande Ronde Basalt, and those that do are typically deep wells (greater than 400 feet deep) used for irrigation in the southern portion of the watershed.

The United States Geologic Survey (USGS) estimated that recharge for the current land use is nearly 60 percent greater than under pre-development land uses, primarily due to irrigation return flows.

There are varying degrees of hydraulic continuity between ground water and surface water in WRIA 30. Although some inferences can be made with existing information, continuity between surface and ground waters has been identified as a data gap in need of additional study.

2.2.5 WATER RIGHTS, WATER USE, FUTURE DEMAND, AND WATER AVAILABLE FOR ALLOCATION

Water Rights, Claims, and Applications

A total of 59,577 acre-feet/year of water is allocated to 881 water right certificate and permit holders in WRIA 30. The vast majority (77 percent) of water allocated within the watershed is for irrigation use. Water rights allocated for municipal, domestic, commercial/industrial, heat exchange, and railway uses collectively make up an additional 22 percent of the total allocation. The majority of the water right certificates and permits are located in the Little Klickitat, Swale, and Columbia Tributaries Subbasins.

There are 1,178 claims in WRIA 30 for a total of 91,062 acre-feet of water per year. The overwhelming majority of water claimed is for irrigation use. There are also 92 water right applications for new appropriations (ground water and surface water) pending in WRIA 30. The cumulative rate of diversion/withdrawal encompassed by these applications is approximately 1,170 cubic feet per second (cfs). The largest number of applications is for irrigation use.

Water Use

Typically, actual water use will be lower than water right appropriations because recorded water rights may be inactive or development of the allocated resources may be constrained by a variety of factors. Irrigation represents the overwhelming majority (approximately 92 percent) of the total water use in WRIA 30, which is consistent with the results of the water rights analysis. Residential (including exempt wells) and non-residential uses comprise roughly seven and one percent of the total water use, respectively.

Future Demand

There is currently little or no human population growth in WRIA 30. For the foreseeable future, water consumption for residential use is likely to continue to be nominal relative to irrigation use. At present, water consumed by commercial/industrial uses is only one

percent of the total volume used in the WRIA. Future changes in commercial demand are not projected, but substantial change could occur if additional water-dependent industries move into the WRIA. The number of irrigated acres in the WRIA has declined over the last decade, but future water demand for irrigation is unknown.

Water Available for Allocation

Additional information is necessary to adequately assess the quantity of ground water available for allocation. Estimates of annual recharge are available, but the quantity of ground water discharged to streams is unknown in most areas. The portion of the estimated irrigation use that is drawn from ground water is also uncertain in some areas. Ground water appears to be abundant in the Camas Prairie (Glenwood) area and the Simcoe volcanics located in the northern portion of the Little Klickitat basin. The Wanapum basalts are also quite productive. Surface water available for allocation is uncertain due to lack of data regarding actual water use in some areas and uncertainties regarding the quantity of water needed to provide for specified beneficial uses.

2.2.6 WATER QUALITY

Surface Water

Twelve streams and stream segments in WRIA 30 have been included on Ecology's 1998 list of impaired water bodies (303d list). Most of the listings are in the Little Klickitat Subbasin or the Columbia River. The identified impairments include segments impaired due to temperature, instream flows, dissolved oxygen, dioxin, pH, and chlorine.

Big Muddy Creek, a tributary to the West Fork Klickitat River, originates on the east flank of Mount Adams, and Little Muddy Creek originates at the Wilson glacier. There are occasional natural glacial outbursts that feed a significant volume of sediment into these creeks in summer.

The Lower Klickitat Subbasin is the area that lies below the confluence with the Little Klickitat with the mainstem Klickitat River. The water quality issues identified in the Lower Klickitat Subbasin are elevated stream temperatures, periodic high sediment loads, elevated fecal coliform bacteria, and nutrient loading. Information on most of these situations is supported by limited data.

Several stream segments in the Little Klickitat Subbasin are listed on Ecology's 1998 303(d) list due to exceedance of the State temperature criteria and low in-stream flows. A Technical Report supporting a Total Maximum Daily Load (TMDL) for the Little Klickitat River was completed in July of 2002 (Brock and Stohr, 2002). A Detailed Implementation Plan was released in March of 2005 (Anderson, 2005). Actions addressing shade levels and stream flow in the Little Klickitat have been implemented since the TMDL Technical Report was completed. The TMDL Technical Report information should be updated to reflect those actions. In addition to the temperature TMDL, a TMDL addressing total residual chlorine and biochemical oxygen demand (BOD) discharges from the Goldendale Wastewater Treatment Plant was developed by Ecology in 1993. The treatment plant has undergone significant changes since that TMDL was completed.

Surface waters in the Little Klickitat Subbasin were tested for fecal coliform and nitrate content in 2003. All nitrate samples were well below the State criteria for drinking water (there is no nitrate standard for surface water). Elevated fecal coliform concentrations were found at one location in Blockhouse Creek and one location in Bloodgood Creek. These measurements of fecal coliform concentrations were based on single grab samples. Additional sampling to determine the scope of the problem, if any, is warranted.

A segment of Swale Creek near the confluence with the Klickitat River is listed on Ecology's 1998 303(d) list as impaired due to exceedance of water temperature criteria. The temperature criterion of 16^{o}C was exceeded at all stations monitored in 2003. Under current conditions, the upper two reaches of the canyon (covering roughly nine miles) are largely dry, with isolated bedrock dominated pools. In this area, shade tends to be very sparse around the pools. The lower three miles of Swale Creek (excluding the mouth), is continuously wet in summer, though flow is negligible. The lack of soils and water in Swale Creek downstream of Warwick is the primary limiting factor on the development of riparian vegetation. The survey notes from the Government Land Office (GLO) surveys conducted from 1861 to 1872 indicate that vegetation in the area was either non-existent or "scattered" along most of the creek. The weight of evidence strongly suggests that the stream flow conditions in Swale Creek are unchanged relative to conditions prior to development.

The Columbia River is listed on Ecology's 1998 303(d) list due to exceedances of the State standards/criteria for total dissolved gas, temperature, and instream flow.

Ground Water

Most ground water data were collected by water purveyors as part of their routine monitoring of water supply wells. Since the mid-1990s, one time testing of newly constructed residential wells has been required, and this testing provided another source of ground water quality data. There is no large-scale ground water monitoring plan in place that can be used to evaluate potential effects of land use on ground water quality or long-term trends in water quality. The available data indicate that most ground water and monitored water supplies are well within drinking water standards, although some aquifers have high concentrations of sediments and the alluvial aquifer in the Swale Creek and lower Little Klickitat Subbasins has localized areas of elevated nitrate levels. Higher concentrations of nitrate tend to be found in wells that tap the upper 150 feet of the aquifer. Wells with elevated nitrate concentrations are correlated with elevated chloride concentrations, suggesting a septic source for the nitrate.

2.2.7 FISH HABITAT

Fish Populations

Currently, there are three stocks of chinook salmon (spring, tule, upriver bright), coho salmon, two stocks of steelhead (summer, winter), bull trout, rainbow/redband trout, and mountain white fish in the Klickitat watershed, as well as several non-salmonid fish species. Steelhead (both winter and summer) and bull trout are listed under the

Endangered Species Act as threatened. Summer steelhead are known to be native to the Klickitat watershed. Winter steelhead were not observed in the basin before the early 1980s, but are presumed in various documents to have been present historically. Tule fall chinook and coho were introduced starting in the 1940s and early 1950s. Upriver bright fall chinook are also considered to be an introduced stock. They were first found in the basin in 1989. Information on current population size is not available.

Currently, hatchery spring and fall bright chinook salmon, coho salmon, and summer steelhead are released into the Klickitat River, and hatchery rainbow trout are released in the Goldendale area of the Little Klickitat River. These hatchery released are primarily, if not entirely, for harvest augmentation purposes.

To date, the carrying capacity of the watershed for salmonid species has not been determined and the risks to indigenous wild fish populations posed by the release of large numbers of hatchery fish have not been evaluated. A recent evaluation (Independent Scientific Review Panel (ISRP), 2005) of proposed changes to hatchery programs and hatchery and fish passage facilities in the Klickitat basin indicates that the hatchery releases and fish harvest levels in the Klickitat River may be limiting recovery of the indigenous wild spring chinook and steelhead stocks. Additional data and information on the fish aquaculture programs in the Klickitat basin is needed.

Twelve races of four species of anadromous salmonids are found in the Columbia River within the WRIA waters (including those passing through to upstream watersheds). Seven of these races are listed as threatened or endangered under the Endangered Species Act. The Columbia River also supports a diversity of native and introduced resident fish species and a few additional anadromous species.

Fish Passage

One of the major limitations on anadromous fish production is the presence of a number of natural migration barriers in the watershed. The Klickitat River flows through a deep, steep walled canyon with historically impassable or marginally passable falls and cascades where the river flows over resistant bedrock. Access to many of the tributaries is restricted because there are impassably high gradients close to the tributary mouths. In addition to the naturally occurring barriers, several culverts have been identified as total or partial barriers to fish passage in WRIA 30.

Habitat Conditions

There is little specific information available regarding habitat in the Middle Klickitat Subbasin. Much of the Klickitat mainstem within the Middle Klickitat Subbasin flows through the Klickitat Wildlife area. Habitat quality in this subbasin is largely unaffected by land use. Habitat quality in the subbasin is generally in good to excellent condition. An adjacent road and grazing in the area may have some unquantified effect on habitat associated with sediment inputs and local reductions in shading. Some minor development has occurred along the lower reaches of the subbasin. The Klickitat Hatchery is also

located within this subbasin. The highest density of *O. mykiss* (steelhead and/or rainbow trout) is reportedly found in the Middle Klickitat area.

The Little Klickitat Subbasin is on the drier side of the Klickitat watershed. Anadromous access above RM 6.1 is questionable. Some diking and channelization has occurred in the Little Klickitat River between river miles 10 and 18. Grazing occurs in some areas along the mainstem Little Klickitat River above river mile 12 and more extensive rural residential developments are present above river mile 17.4, including the City of Goldendale. These land uses may affect riparian conditions and floodplain function in some areas. North of the town of Goldendale, Highway 97 parallels the stream for short distances. In these areas, some local modification of floodplain function may have occurred. Information regarding the tributaries to the Little Klickitat River downstream of Goldendale is sparse.

Limited habitat data is available for the Lower Klickitat Subbasin. Lyle Falls, located at RM 2.2, creates difficult passage for salmon and steelhead stocks entering the Klickitat River. The road SR 142 and an abandoned rail line parallel the river along much of the mainstem Klickitat. In the Snyder Creek watershed, a tributary to the Klickitat River within the subbasin, an old lumber mill site has a 2400-foot concrete sluiceway that forms a depth and/or velocity barrier to all anadromous species. A major passage restoration project was completed in 2004 and is expected to enable fish passage past the old mill site.

Swale Creek flows through the one of the driest portions of the watershed. During summer, there is no stream flow upstream of Warwick. Habitat upstream of Warwick is limited to a few pools. Although hatchery fish were released upstream of Warwick decades ago, no fish have been documented in this section of the subbasin in recent years. Downstream of Warwick, summer flows are also negligible. The first seven miles downstream of Warwick are virtually dry with scattered pools that are sustained by small seeps. Stream temperatures exceed 23^{o}C (73.4^{o}F) annually. The only continuously wetted portion of the creek lies within the lowest three miles of the subbasin. In summer, stream flow here is negligible and temperatures are high. The mouth of the creek is isolated from the mainstem Klickitat River by alluvial deposits, prohibiting the movement of fish out of the subbasin in summer.

No information on the Columbia tributaries was available in the reviewed documents. Generally, the tributaries tend to be steep streams. Most are dry or have little flow in the summer and are unlikely to contain significant fish habitat.

No assessment was completed as part of this watershed planning effort for the Columbia River itself or its adjacent riparian habitats.

2.3 OVERVIEW OF IDENTIFIED DATA GAPS

Several data gaps were identified during the watershed assessment and planning processes. These gaps limit the understanding of water resources in WRIA 30. The WRIA 30 Plan identifies approaches to address issues identified in the basin.

Major data gaps include the following:

Water Quantity

- Estimates of actual water use and water budgets are uncertain.
- Estimates of current and historical Little Klickitat River stream flows are out of date or unavailable.
- Snow level information and relationships between snow levels and subsequent summer water availability are not available in sufficient detail to support efforts to forecast drought conditions.

Water Quality

- Uncertainty exists regarding the levels of shade that can be achieved along the Little Klickitat River and the stream temperatures that can be attained.
- Limited data is available regarding sediment concentrations in streams and the sources of sediment inputs.
- Uncertainty exists regarding the potential to increase shade with modifications of the Swale Creek railroad bed.
- Further sampling of older wells to identify water sources with elevated nitrate concentrations is recommended.
- Temperature and dissolved oxygen levels in the lower Klickitat River exceed State criteria. Additional information is needed to quantify the extent of the situation.
- There is little water quality data available for the Middle Klickitat Subbasin.
- Limited data are available regarding the concentration of fecal coliform bacteria in surface waters of the watershed.
- The feasibility of bringing public water supplies to Centerville needs to be assessed.
- An assessment of pollution trading options is needed.
- A need to develop indicators of changes in peak flows and sediment inputs over time has been identified. These indicators can be used to evaluate the need to initiate actions to further quantify these processes.

Fish Habitat

- Little numeric information has been documented regarding the quality of fish habitat in the watershed.
- Culvert inventories need to be updated in some locations.
- There is little known about how often (or if) the Little Klickitat Falls is passable to steelhead or other migratory fish species.
- At present, information regarding fish abundance is limited.
- The carrying capacity of the Klickitat basin for salmonid species is unknown.
- Interactions between and risks posed by hatchery/introduced salmonid stocks and native naturally spawning fish populations have not been assessed.

2.4 OVERALL MANAGEMENT OF PLAN

The WRIA 30 Plan addresses identified key issues regarding water quantity, water quality, and fish habitat. The WRIA 30 Plan assumes that existing programs will be implemented and monitored. While regulatory approaches are discussed in this WRIA 30 Plan, the Planning Unit urges the implementation of voluntary and positive incentive-based

approaches to address issues covered under this plan. The WRIA 30 Planning Unit recognizes that integration of the WRIA 30 Plan with other state and local level processes will benefit implementation of the plan through expanded participation and will result in efficient use of public funds.

2.4.1 CONSTRAINTS

Cost-Effectiveness: The WRIA 30 Planning Unit is committed to focusing efforts on actions that have the greatest cost efficiency possible.

Quality Assurance and Reporting: The WRIA 30 Planning Unit is committed to the application of quality assurance principles in the implementation of the WRIA 30 Plan. The WRIA 30 Planning Unit is also committed to ensuring that information developed during studies and monitoring programs is available for public use.

Funding: The WRIA 30 Plan recognizes that implementation of the plan will be funding dependent.

Applicable Law: Nothing in the WRIA 30 Plan supersedes any Federal, State, or County regulations. All actions in the WRIA 30 Plan are subject to applicable law.

2.5 WATER QUANTITY MANAGEMENT

In general, the WRIA 30 Plan does not provide complete details of water management in the basin. The WRIA 30 Planning Unit recognizes that additional details regarding water management will be developed during the implementation planning process. Holders of water rights for municipal supply purposes will be invited to participate with the Planning Unit in the process of defining milestones and timelines for plan implementation.

The following three key issues regarding the availability of water were identified and prioritized during the development of the WRIA 30 Plan.

1. Current and Future Water Demand in WRIA 30 (High Priority)
2. Climate Effects on Water Availability (Moderate Priority)
3. Summer Stream Flow in the Little Klickitat River (Moderate Priority)

2.5.1 CURRENT AND FUTURE WATER DEMAND IN WRIA 30

Situation: There is a strong need to develop a system that will facilitate the approval of new water rights and/or ensure that current and future water needs can be met. It has not been possible to obtain new water rights within WRIA 30 in recent decades. Water purveyors have current and future needs for additional water to meet demands of their customers. Applications for new water rights to support irrigation uses have been difficult or impossible to obtain. The economy of the WRIA is heavily dependent upon agricultural land uses. Hence, the availability of water for agricultural uses can have a large effect on the economic viability of the region. The goal for management is to ensure adequate water supply to meet the current and future needs of the citizens of WRIA 30. Priority for this situation is high.

General Approach

There are several approaches that the citizens and governments of WRIA 30 may take to address water quantity issues. Evaluation of options will necessarily include assessment of legal, political, and economic considerations. The preferred approach to addressing water demand issues will be identified during the first year of the plan implementation. Options under consideration are summarized below.

Obtain Information Needed to Quantify Water Available for Allocation

A high priority objective of the WRIA 30 Planning Unit is the quantification of the amount of water available for allocation. Information needed to fill the data gaps includes the following:

- ❑ Refine estimates of actual water use;
- ❑ On a subbasin scale, refine understanding of ground water/surface water interactions;
- ❑ Delineate specific aquifer zones within subbasins;
- ❑ Estimate storage volume within each aquifer;
- ❑ Improve water budgets;
- ❑ Evaluate the spatial distribution of needs; now and in the future;
- ❑ Establish permanent gauging locations to measure stream flow;
- ❑ Complete comparative analysis of historical versus current stream flow in subbasins;
- ❑ Complete mapping of water rights and correct WRTS database; and
- ❑ Other studies as determined through interactions with Ecology.

Public Education and Outreach

Public education regarding water rights is critical. The public needs to be informed regarding existing water right law, particularly with regard to statutory relinquishment and the rules and regulations regarding water rights transfers and obtaining water rights. The public also needs to be informed regarding existing and future programs available to help them manage water.

Develop Options for Water Management in WRIA 30

Options for meeting water demand may involve some or all of the following:

- ◆ **Water Conservation**
  - ❑ Irrigation Efficiency Projects
  - ❑ Irrigation Scheduling
  - ❑ Use of High Efficiency Irrigation Systems
  - ❑ Use of Soil Inoculants
  - ❑ Improvements in Water Transport Systems
  - ❑ Reuse of Irrigation Tailwater
  - ❑ Mulching and Cultivation Techniques
  - ❑ Implementation of Federal and State Conservation Programs

- Urban Water Conservation Projects
- Water Reclamation

- **Water Right Transfer, Relinquishment, and Appropriation**
  - Appropriation of New Water Rights
  - Water Right Transfer/Trading
  - Water Use Metering
  - Local Water Bank
  - Washington State's Water Trust Program
  - Adjudication

- **Water Storage**
  - Surface Reservoirs
  - Aquifer Storage and Recovery

In addition to the above, a statute addressing off-channel watering of livestock to protect water quality may be pursued. This statute would place into law an existing Ecology policy.

Monitoring

Monitoring programs addressing water demand in the WRIA may be extensive and will be dependent upon the options selected to manage water resources. The quality assurance and reporting requirements discussed previously will apply to all monitoring programs.

2.5.2 CLIMATE FLUCTUATION AND WATER AVAILABILITY

Situation: The problem that has been identified is that inter-annual, decadal, and global fluctuations in climate affect the amount of water available for use each year. Periodic droughts affect water users and impact the WRIA's economy. Currently, the basin has no storage capacity and is particularly vulnerable to droughts. The management goal identified for this issue is to obtain extra capacity to provide water in low water years. The priority for this situation is moderate.

Approach

Many of the approaches discussed in Section 5.1 of the WRIA 30 Plan are also applicable to addressing water shortages during periods of drought, including all water conservation and water storage options. Additional actions to be taken to address drought situation are discussed below.

- **Drought Forecasting:** Collect necessary information to support local drought forecasting.

- **Drought Declaration:** Work with Ecology and the Governor's office regarding local declarations of drought and implementation of emergency response options.

- **Water Leases**: In 2005, Ecology offered to lease irrigation water from senior water right holders in the Yakima Basin so that junior water right holders facing cutoff will still have water for drinking and other domestic uses. Water may also be leased to improve flows for fish and to offset some of the effects of transferring water diversions during the drought emergency. Ecology is asked to extend this program to WRIA 30 during drought years.

- **Water Restrictions**: Water purveyors may choose to restrict water use for certain applications such as watering of lawns.

- **Documentation of Non-Use of Water:** Provide a means to record and document water not used in time of drought.

- **Public Education and Outreach:** Inform the public regarding predicted drought situations, emergency measures, and conservation options.

Monitoring

The monitoring described in Section 5.1 of the WRIA 30 Plan is applicable to this issue as well. Monitoring will also include the development of a method to forecast drought.

2.5.3 SUMMER STREAM FLOW IN THE LITTLE KLICKITAT RIVER

Summer stream flow is currently low in summer. Fish habitat and water quality would be benefited by increased flows. Increase summer stream flow in the Little Klickitat River to the extent that is reasonably possible, while balancing the needs of competing demands. The priority for this situation is moderate.

Approach

The approach to addressing the low summer flows in the Little Klickitat River is highly dependent upon data collection to identify the extent and sources of land use effect on stream flows. The data collection effort will provide insight into the degree of change that is possible, the uses that have the greatest effect on stream flows, and the projects that are likely to have the greatest benefit in terms of improving flows. In the interim, all actions that reduce water use previously summarized may improve stream flows.

Address Data Gaps

Obtain information needed to identify current land use effects on summer flows in the Little Klickitat River. Data collection described in Section 5.1.3.1 of the WRIA 30 Plan will also aid in evaluation of the actions that should be taken to improve stream flow. Actions described in Section 5.1.3.1 of the WRIA 30 Plan that are also applicable to this issue include:

- ❑ Refine estimate of actual use;

- ❏ On a subbasin scale, refine understanding of ground water/surface water interactions;
- ❏ Identify losing and gaining reaches in areas where additional water is needed;
- ❏ Delineate specific aquifer zones within subbasins;
- ❏ Estimate storage volume within each aquifer;
- ❏ Improve water budgets;
- ❏ Establish permanent gauging locations to measure stream flow;
- ❏ Evaluate historical and current stream flow in subbasins, focusing initially on the Little Klickitat Subbasin;
- ❏ Review cadastral survey notes from the mid-1800s to determine what information can be obtained regarding the historic water levels; and
- ❏ Evaluate the effects of channelization of summer flows.

Details regarding project objectives and scope will be developed on a schedule determined during the first year of plan implementation.

Identify and Implement Actions

The information obtained in the studies described above will provide sufficient information to assess the effects of land use on summer stream flow and to identify those actions that have the greatest potential benefit. If reduction of surface water use proves to be a viable strategy for addressing stream flow, selection of projects to implement may include purchase or lease of water rights, encouragement of participation in water trust programs, and/or implementation of water conservation actions. If a water banking program is developed, water lying in the water bank will effectively become available to enhance flow and may be placed temporarily in trust.

Evaluate Storage Options

Water storage projects in the Little Klickitat Subbasin may be used to enhance instream flows, subsequently improving water quality and fish habitat. If the development of storage options is pursued, options that provide benefits to multiple uses, including stream flows, are preferred.

Public Outreach and Education

Public outreach to inform the public about the importance of increasing summer flows will help the public understand why funds are being expended to conduct studies. Public education can also be used to encourage water conservation and inform water right holders regarding options for water in trust and other programs that may increase stream flow. Once the interaction between land use and stream flow is better understood, public education to inform the public regarding the scope of the problem will also be required.

2.5.4 MANAGEMENT OF ACTIONS ADDRESSING WATER QUANTITY

The management of the quantity of surface and ground water in WRIA 30 is addressed in this section. In general, the WRIA 30 Plan does not provide in-depth discussion of water

management in the basin. Details regarding water management will be developed during the implementation planning process.

Action Items

Action items related to water quantity to be addressed during watershed management plan implementation include a large number of activities. In all cases, Ecology may be asked to provide guidance regarding appropriate approaches and/or rules and regulations and may also be asked to provide review of project proposals, plans, and study documents. Ecology will also be asked to act as the liaison between the various other State agencies regarding water quantity issues that may benefit from input from those other agencies.

Management Options

The details regarding the management and oversight of the implementation of the water quantity portion of the plan will be developed during development of the Detailed Implementation Plan. Many of the action items listed in the previous section are currently at least partially addressed by existing programs; hence, the assistance of entities with existing programs may be requested by the plan management entity. Possible entities that could be asked to assist with various aspects of the WRIA 30 Plan that address water quantity issues are summarized within the Plan. The WRIA 30 Plan will remain consistent with the comprehensive water system plans developed by the major water purveyors in the WRIA and submitted to the State Department of Health.

Funding

Numerous options are available for funding water management programs addressing water quantity issues. Commonly used funding sources are summarized in the WRIA 30 Plan.

2.6 WATER QUALITY MANAGEMENT

Four key issues regarding the quality of water were identified and prioritized during the planning phase. The four water quality issues and level of priority are:

1. Little Klickitat River Temperature (High Priority)
2. Nitrates in Ground Water (Swale Creek Valley) (Moderate Priority)
3. Swale Creek Temperature (Low Priority)
4. Elevated Fecal Coliform Levels (Low Priority)

An adaptive management approach to addressing water quality issues is envisioned. The approach will include documentation of baseline conditions and tracking of progress against the baseline. Baseline conditions will include the starting conditions of the water quality parameter in question and upland conditions that may be affecting water quality. In some circumstances, control sites may be desirable, especially in situations where variations in climate may affect the water quality parameter. Changes relative to baseline conditions will be monitored to evaluate the effectiveness of actions taken to address the identified water quality situations. The management strategy may be revised in response to the information gained over time. The WRIA 30 Planning Unit urges the

implementation of voluntary and positive incentive-based approaches to addressing water quality issues.

2.6.1 LITTLE KLICKITAT RIVER TEMPERATURE

Situation: Water temperature in the Little Klickitat River exceeds the applicable State water quality criterion. The goal regarding this issue is to reduce temperature in the Little Klickitat River to the standard or to an attainable level. The approach that has been identified strives to 1) determine and refine estimates of attainable temperatures and shade, 2) increase shading to attain the goals specified in the TMDL where reasonably attainable by 2090, 3) increase summer flows, 4) create refuge areas if possible, and 5) protect existing shade. The priority for this situation is high.

Assumptions and Constraints:

Temperature improvement in the Little Klickitat River will be a long-term effort. Response may be slow due to funding constraints, but more importantly will be affected by the time required for vegetation to grow. The Little Klickitat TMDL assumes that the specified targets can be met. Additional information is needed to either validate or correct some of the assumptions in the Little Klickitat TMDL. Modification of targets in the TMDL may be appropriate if the additional information indicates such a need.

Approaches

An adaptive management approach to addressing the stream temperature situation in the Little Klickitat Subbasin is envisioned. Changes in stream temperature, riparian conditions, flow, and sediment inputs will be monitored relative to baseline conditions. The effectiveness of actions taken to address stream temperature will be evaluated using the baseline information and data from control sites. The change in baseline conditions relative to actions taken will provide useful information regarding the effectiveness of various actions. The management strategy may be revised in response to the information gained over time

Approaches have been identified that address the goals for this situation. These are briefly summarized below.

Determine and Refine Estimates of Attainable Temperatures and Shade Using Appropriate Methodologies

The WRIA 30 Planning Unit identified a need to conduct additional analysis to address questions raised in the community regarding assumptions in the TMDL and to evaluate attainable shade and stream temperatures. Baseline information is also needed to evaluate trends over time, evaluate effectiveness of actions, and to facilitate the adoption of the management plan to improve effectiveness of the overall program. Details of the scope of work will be developed during development of the Detailed Implementation Plan. Implementation of the scope of work will be subject to the availability of funding and other resources.

It is the intent of the WRIA 30 Planning Unit to work with Ecology to update analyses and potentially update the TMDL when the next review cycle for the TMDL approaches. Hence, implementation of the WRIA 30 Plan includes an obligation for Ecology to contact the Initiating Governments prior to scoping the next review of the TMDL and allow local participation in the review process.

Evaluate Cost Effectiveness of Actions

Initially, existing literature will be used to identify the relative effect that various factors (sediment, width/depth ratio, shade, etcetera) have on stream temperature. This information will be used to prioritize general classifications of actions. Additional studies may be identified to fill gaps not addressed in the existing literature. Projects will be prioritized by the greatest expectation of benefit relative to project costs.

Increase Shading to Attain the Goals Specified in the TMDL where Reasonably Attainable by 2090

Approaches to address shading in the Little Klickitat Subbasin may include control of livestock access to riparian areas, encouragement of participation in programs that protect and/or enhance riparian areas, development and implementation of a riparian area revegetation program, enhancement of hyporheic zones through improving channel complexity, and implementation of pertinent state and local rules and regulations.

Increase Summer Flows

The approaches previously described to address water quantity issues directly affect stream flow in the Little Klickitat River. Included among these are conservation strategies, transfers of water rights from surface to ground water sources, and development of storage projects designed to provide summer stream flow. Other actions may include increasing wetland storage and protection of existing wetlands.

Create Thermal Refuge Areas

Temperature refuge areas may occur where ground water seeps into streams, where subsurface flow resurfaces, or where water flows through hyporheic zones. Localized refuges may also be found at confluences with cooler tributaries and in extended areas with high levels of effective shade.

An inventory of refuge areas in the Little Klickitat River is warranted. Identified refuge areas can be protected to maintain this important habitat and/or targeted for early enhancement actions. Additionally, approaches to increase the number of refuge areas will be explored.

Reduce Sediment Inputs

Sediment inputs can be reduced through the following:

- Encourage appropriate grazing management practices that avoid over-utilization of grazing areas, including adoption of the Natural Resource Conservation Service (NRCS) specifications for prescribed grazing;
- Follow Forest and Fish Agreement rules;
- Evaluate and quantify sediment delivered to streams from unpaved roads, upgrade roads that are contributing high volumes of sediment, and follow Forest and Fish agreement rules regarding forest road systems;
- Follow County regulations regarding setbacks from streams, follow sediment control requirements on construction sites, and encourage developers and others to voluntarily follow storm water system guidelines;
- Participation in the Conservation Reserve Enhancement Program or other voluntary actions that protect and/or enhance lands in riparian areas;
- Use of filter strips to reduce sediment runoff;
- Use of sediment basins where appropriate;
- Direct seed or reduced tillage operations to reduce sediment runoff from tilled lands where appropriate;
- Implementation of suitable BMPs on concentrated animal feeding operations (CAFO) and follow CAFO requirements;
- Facilitation of education and training of conservation district personnel to provide local public education, technical support, and assistance;
- Increase riparian vegetation, which will subsequently reduce bank erosion;
- Use BMPs to minimize or prevent livestock damage of stream banks;
- Stabilize actively eroding stream banks; and
- Identify funds to assist with conservation easements (including urban areas) to enhance degraded areas and protect existing areas that are functioning.

Channel Width

All actions described above to increase shade and reduce sediment inputs will also help to defer degradation of channel width and may help to recover a more natural stream channel. In addition, sections of stream that are currently excessively wide can be addressed through well-engineered stream enhancement projects.

Protection of Existing Streamside Shade

Streamside shade can be protected through the following:

- Follow Forest and Fish Agreement rules;
- Follow County regulations regarding setbacks from streams and encourage those owners that are exempt to voluntarily follow the critical areas ordinance;
- Encourage participation in the Conservation Reserve Enhancement Program and other voluntary actions that protect lands in riparian areas and/or enhance riparian conditions; and
- Provide public education regarding the importance of maintaining existing riparian vegetation.

Pollution Trading and Pollution Mitigation Options

Pollution trading is a way to help improve water quality by focusing on cost-effective, local solutions to problems caused by pollutant discharges to surface waters. The potential to implement a pollution-trading program in WRIA 30 will be explored as a possible solution to water temperature problems. The determination to implement a trading program and the details of the program will be developed during the implementation of the WRIA 30 Plan.

Use Attainability

Use attainability analysis is a structured assessment to determine if a water body can attain the specified state standards. If a determination is made that certain beneficial uses cannot be met, those non-attainable uses may be removed from the designated uses for a water body. The data collected under this management plan will include information that can be used to assess the attainability of the temperature criterion applied to the Little Klickitat River. If the available data and modeling indicates that state standards specified for the Little Klickitat River cannot be attained, Ecology will be requested to work with the Implementing Governments to conduct a formal use attainability analysis.

Public Education

Public education is an important component of the WRIA 30 Plan. Details regarding the public education approach will be developed during plan implementation.

Monitoring

Monitoring related to stream temperature in the Little Klickitat River includes two components. The first component is monitoring of change relative to the baseline conditions. The second component relates to monitoring to determine effectiveness of actions taken, effectiveness of overall plan, and the need to adapt the plan in the light of new information.

Documentation of change relative to baseline conditions will involve regular monitoring of the parameters used to define those baseline conditions. Details regarding monitoring of change relative to baseline conditions will be developed during plan implementation. Quality assurance and reporting requirements will apply to all related efforts.

The effectiveness of specific actions will be evaluated by documenting local changes in temperature, shade, flow, or sediment inputs resulting from those actions. Those actions that are deemed effective will be encouraged. Those actions that are not found to be effective will not be actively pursued.

2.6.2 NITRATES IN GROUND WATER

Situation: Nitrate concentrations exceed or approach State standards in some wells less than 150 feet deep drilled in Swale Creek Alluvial Aquifer. Analyses indicate that the primary source of this nitrate is likely septic tanks, although fertilization and animals may

also be contributing to the situation. The goal of the approaches outlined in the WRIA 30 Plan is to reduce nitrates in wells to safe levels. The priority of this issue is moderate.

Approaches

Most of the identified potential actions fall within the auspices of the Klickitat County Health Department. Hence, the responsibility for developing and implementing a program addressing the aspects of the plan pertaining to Health Department responsibilities will be allocated to the Health Department. The Initiating Governments will support the Health Department and other entities in their pursuit of implementing a program to address the situation, including assistance in pursuing funding.

The County Health Department might consider implementing the following actions to address the nitrate situations:

- ❏ Public education;
- ❏ Develop and implement strategy to identify wells with elevated nitrate concentrations;
- ❏ Develop a septic testing program;
- ❏ Evaluate efficiency of existing regulations regarding construction of new septic systems;
- ❏ Develop program to update septic systems and/or wells where problems are found; and
- ❏ Provide incentives for landowners to upgrade well or septic systems where needed.

Three additional approaches to addressing the nitrate situation have been identified. Implementation of these approaches lie outside of the auspices of the County and State Health Departments. These include sealing abandoned wells, evaluating potential to develop a public water system in Centerville, and encourage agronomic nitrate fertilizer application.

Monitoring

Monitoring may include any or all of the following:

- Continued monitoring of water quality in new wells;
- Monitoring and testing of water quality in older wells;
- Septic system inspections;
- Tracking of grazing and agricultural BMP implementation; and
- Monitoring of other water quality parameters to assist with source identification.

2.6.3 SWALE CREEK TEMPERATURE.

Situation: One segment Swale Creek near the confluence with the Klickitat River is listed on the State of Washington 303(d) list for temperature exceedance. The goal for this situation is to meet standard or decrease temperature to attainable level. A secondary goal is to develop a plan that will avoid the need for a TMDL for the listed reach. The priority for this issue is low.

Assumptions and Constraints

The approach outlined in this document assumes that soil and moisture conditions will support increased vegetation near the channel in at least some locations. In areas dominated by bedrock formations, efforts to increase shade may prove to be impractical. Episodic events may tend to limit the longevity of any plantings along the channel. The assessment of historic conditions suggests that current vegetation along the channel is similar to that which was present in the mid 1800s. Therefore, substantial improvements in shade and subsequent reductions in temperature are not likely; however, minor improvements may be possible.

2.6.4 APPROACHES FOR ADDRESSING THE SWALE CREEK TEMPERATURE ISSUE

Direction from the WRIA 30 Planning Unit places strong emphasis on cost-effectiveness regarding actions taken to address Swale Creek temperature issues. The plans to improve temperatures must be informed by the weight of evidence regarding the natural conditions of Swale Creek.

A water quality improvement plan modeled on the Ecology's 4B approach will be developed to address water temperature in Swale Creek. Primary action items that have been identified to include in the water quality improvement plan include actions to maintain and/or enhance existing shade and evaluating the potential to increase shade through modification of an existing railroad bed. Modifications to the plan may be necessary as approaches are fine-tuned in the adaptive management process. Should Ecology determine the need for a TMDL, Ecology will contact the Initiating Governments prior to scoping of the TMDL to initiate coordination and cooperation. If the available data and modeling indicates that the standards specified for Swale Creek cannot be attained, Ecology will be requested to work with the Implementing Governments to conduct a formal use attainability analysis.

2.6.5 MONITORING

Details regarding monitoring will be developed as the water quality improvement plan is developed. Monitoring will include at minimum:

- ❏ Long term tracking of stream and air temperature;
- ❏ Evaluation of temperature trends;
- ❏ Tracking of actions taken to address the situation;
- ❏ The survival of plantings and the growth of riparian vegetation; and
- ❏ Effects of major flow events on vegetation.

2.6.6 ELEVATED FECAL COLIFORM LEVELS

Situation: Concentrations of fecal coliform bacteria in excess of the State standard have been identified in some tributaries of the Little Klickitat River and in Swale Creek Subbasins. The evidence for this is based on limited sampling and sampling methods. The

goals of the approaches identified in the management plan are to achieve and maintain surface water standards for fecal coliform bacteria. The priority for this situation is low.

Approach

The approach to addressing the fecal coliform situation hinges on the collection of additional data. Additional monitoring will be conducted to determine whether a problem exists and to determine sources of inputs if appropriate. Once the fecal coliform situation in WRIA 30 is better understood, a more detailed plan addressing the situation will be developed, if necessary. A detailed monitoring plan will be developed if a problem is determined to exist.

2.6.7 MANAGEMENT OF ACTIONS ADDRESSING WATER QUALITY

Action Items

Action items related to water quality to be addressed during watershed management plan implementation include a large number of activities. In all cases, Ecology may be asked to provide guidance regarding appropriate approaches and/or rules and regulations and may also be asked to provide review of project proposals, plans, and study documents. Ecology will also be asked to act as the liaison between the various other State agencies regarding water quality issues that may benefit from input from those other agencies.

Management Options

The details regarding the management and oversight of the implementation of the water quality portion of the plan will be developed during the development of the Detailed Implementation Plan. Many, if not most, of the identified action items are currently implemented by existing agencies; hence, the assistance of entities with existing programs may be requested by the Implementing Governments.

Funding

Numerous options are available for funding and are summarized in the WRIA 30 Plan.

2.7 FISH HABITAT MANAGEMENT

Two key issues regarding fish habitat were identified and prioritized during the planning phase:

1. Fish Habitat Protection and/or Restoration (High Priority)
2. Potential Effects of Population Growth on Fish Habitat (Moderate Priority)

In addition, low summer flows in the Little Klickitat River and summer water temperatures in the Little Klickitat River and Swale Creek have been identified as issues. The management approach to address summer flows in the Little Klickitat River is discussed in Chapter 5 of the WROA 30 Plan and the approaches to addressing the Swale Creek and

Little Klickitat water temperature situations are addressed in Chapter 6 of the WRIA 30 Plan.

2.7.1 FISH HABITAT PROTECTION AND/OR RESTORATION

Situation: Fish habitat has been degraded in some areas. The goal of the WRIA 30 Plan is to protect or enhance fish habitat. The priority for this issue is high.

Assumptions and Constraints

Limited data are available for WRIA 30 regarding the current condition of fish habitat. The paucity of information limits the Planning Unit's ability to develop a detailed approach to addressing fish habitat. Several studies are described in the approach. Completion of studies is subject to the availability of funding and resources. All studies and monitoring projects are subject to the quality assurance and reporting requirements.

Approach

Approaches described previously addressing water quality and water quantity also serve to restore and protect fish habitat. This section focuses on habitat conditions not previously addressed. Due to the paucity of quality fish habitat data for the WRIA, the approach identified to address fish habitat restoration and protection options relies extensively on data collection efforts to be conducted during implementation of the plan. Specific projects to be undertaken to address fish habitat issues will be identified based on the results of those studies.

Data Gaps

Collection of the information needed to assess current habitat conditions, limiting habitat characteristics, and to identify the projects that will provide the greatest benefit to fish would preferably be completed early in the implementation phase. These efforts are subject to the availability of funding and resources. Information needed includes:

- Current habitat conditions;
- Evaluation of passage barriers, including fish passage at the Little Klickitat Falls;
- Limiting habitat characteristics and processes affecting those characteristics; and
- Fish population size.

Recommendations regarding data collection methods and standards are discussed in the WRIA 30 Plan.

Identification and Implementation of Potential Restoration Projects

Drawing upon the information regarding habitat that is gained through filling data gaps, action is required to identify areas where fish habitat could be enhanced through direct modification (e.g. planting riparian areas, placing wood, providing fish passage) and/or through indirect management strategies (e.g. upgrade of roads, modification of runoff patterns). Areas where restoration is implemented should be sites where actions will have

long-term benefits. Identified actions may include removal of passage barriers, reduction of sediment inputs, reduction of stream temperature, increasing wood abundance in streams, reduction of nutrients, encouragement of programs that reduce interactions between native and introduced fish populations, and/or encouragement of reducing harvest or out-of-basin effects.

Habitat Protection

Protection of existing habitat will be addressed through regulatory and voluntary efforts. Several voluntary programs are available that encourage the development of riparian reserves. Participation in these programs is encouraged. Public education efforts will focus on providing landowners with information regarding these programs. Landowners with critical riparian habitats will be targeted.

Public Education

Public education and communication is critical to the success of this program. Details of the public education program will be developed during the plan implementation.

Monitoring

Monitoring of water quantity and water quality previously addressed is also applicable to this situation. Additional monitoring relative to the restoration and protection of fish habitat is needed. A Monitoring Plan will be developed during plan implementation.

2.7.2 FISH HABITAT PROTECTION POTENTIAL EFFECTS OF POPULATION GROWTH AND POPULATION MOVEMENT ON FISH HABITAT

Situation: Future development might impact fish habitat through reductions in summer low stream flow, increases in peak flow, reductions in riparian shade, and/or changes in water quality. The goal regarding this issue is to manage future growth to minimize or avoid effects on fish habitat. The priority of this issue is moderate.

Approach

The rules and regulations and the volunteer efforts described to protect fish habitat will also help to protect against the impacts of future growth. Sections of the WRIA 30 Plan that address water quantity and water quality are also applicable to this issue.

Most of the approaches involve monitoring of change over time. This monitoring is a programmatic subbasin-wide tracking of cumulative effects. The responsible entity(s) will be identified in the first year of program implementation.

While regulatory approaches are discussed in this WRIA 30 Plan, the Planning Unit urges the implementation of voluntary and positive incentive-based approaches to addressing issues associated with population growth.

Development in Riparian Areas

Trends in riparian condition can be monitored through periodic review of aerial photographs. Review of trends will occur at an interval consistent with the production of new photos by Washington Department of Natural Resources (WDNR). Information obtained through monitoring can be used to assess the need for additional voluntary or regulatory actions to protect riparian areas.

Stream Flows

Sections of the Watershed Management Plan addressing current and future water demand and current known low flow situations are applicable to future minimum instream flows situations. Peak flows (magnitude of flood events) are not addressed elsewhere in this plan. Growth has been negligible in recent years and slow growth is expected in the future. As a result, changes in impervious areas are not likely to increase rapidly. In light of the absence of any current indication of significant peak flow effects and the expected slow changes into the future, no action is warranted as the present time. However, monitoring of changes over time to determine if a situation of concern is developing is warranted. Baseline information regarding the area of impervious surfaces or an indicator of the areas of impervious surfaces such as population density in subbasins with higher population density will be assembled. Changes in impervious areas will be monitored to determine if action is appropriate in the future.

Sediment Inputs

Sediment levels in streams are currently unknown. The approach described in Section 7.1 of the WRIA 30 Plan is designed to identify and address any existing sediment issues in the WRIA. The monitoring program described in Section 7.1 will document changes in sediment loads in streams. During implementation of the WRIA 30 Plan, an indicator will be identified that will be used to trigger in depth evaluations of possible land use effects on sediment inputs. Actions will be identified at that time, if needed, to reduce sediment inputs to streams.

Water Quality

With the exception of the water quality issues addressed in Section 6 of the WRIA 30 Plan, water quality is currently believed to be good in the basin. However, the available data on water quality is limited in a number of areas. Water quality will be monitored in the future to track trends over time. If degradation of water quality is documented in the future, approaches to address the problem areas will be developed.

2.7.3 MANAGEMENT OF ACTIONS ADDRESSING FISH HABITAT

Action Items

Action items included in the WRIA 30 Plan that address fish habitat cover a large number of activities. Ecology and Washington Department of Fish and Wildlife (WDFW) may be asked to provide guidance regarding appropriate approaches and/or rules and regulations

and may also be asked to provide review of project proposals, plans, and study documents. Ecology will be asked to act as the liaison between the various other State agencies regarding fish habitat issues that may benefit from input from those other agencies.

Management Options

The details regarding the management and oversight of the implementation of the fish habitat portion of the plan will be developed during development of the Detailed Implementation Plan (see Section 4). The preferred approach to addressing habitat concerns in the WRIA is to complete the work needed through contracts managed locally and coordinated with State agencies.

Funding

Many fish habitat projects are funded through the Klickitat Lead Entity process pursuant to Chapter 77.85 RCW. Projects identified under the WRIA 30 Plan may be submitted to the Klickitat Lead Entity for consideration for funding. Numerous other options are available for funding.

2.8 IMPLEMENTATION

Implementation of the WRIA 30 Plan will consist of both independent and coordinated actions by various organizations. Implementation of the actions called for in the WRIA 30 Plan will be subject to budgetary and staffing constraints. However, in approving the WRIA 30 Plan, the water resource interests in WRIA 30 agreed to help seek and support funding to carry out the actions identified in the plan, focusing first on the priority issues and actions with the greatest expected benefit.

2.8.1 MANAGEMENT OF PLAN IMPLEMENTATION

Coordination of the various actions associated with implementation of the WRIA 30 Plan is an important aspect of the implementation process. The Initiating Governments (i.e., Klickitat County, the City of Goldendale, and KPUD) will provide oversight of plan implementation, initiate planning activities, define the scope of actions associated with plan implementation, and address policy issues that arise during implementation.

The WRIA 30 Planning Unit will continue to operate. The Planning Unit will be renamed as the Water Resource Planning and Advisory Committee (WRPAC) to reflect the planning and advisory responsibility of the committee. The WRPAC will serve as a dedicated resource for providing input to Initiating Governments regarding water resource and habitat issues, but shall have no authority that is not specifically granted by the Initiating Governments. The WRPAC is an advisory body to the Initiating Governments and the Implementing Governments. The WRPAC is tasked with developing the Detailed Implementation Plan during the first year of Implementation. Other responsibilities of the WRPAC are described in the WRIA 30 Plan.

The "Implementing Governments" will be made up of the City of Goldendale, KPUD, Klickitat County, Ecology (representing the State agencies), and the CKCD (representing conservation districts within the management area).

2.8.2 DETAILED IMPLEMENTATION PLAN

A Detailed Implementation Plan will be developed within one year of acceptance of funding under 90.82.040(2)(e) RCW for implementing the WRIA 30 Plan. The Detailed Implementation Plan will include strategies to provide sufficient water for production agriculture; commercial, industrial, and residential water use; and instream flows. The plan will contain timelines to achieve the strategies and interim milestones to measure progress. The Detailed Implementation Plan will clearly define coordination and oversight responsibilities; any needed interlocal agreements, rules, or ordinances; any needed state or local administrative approvals and permits that must be secured; and specific funding mechanisms. The implementation timelines will be subject to funding constraints.

Timelines and interim milestones will address planned future use of existing water rights for municipal water supply purposes that are inchoate, including how these rights will be used to meet project future needs identified in the WRIA 30 Plan, and how the use of these rights will be addressed when implementing the instream flow strategies identified in the WRIA 30 Plan. As the lead agency, Klickitat County will ensure that holders of water rights for municipal water supply purposes not currently in use are asked to participate in defining the timelines and interim milestones included in the Detailed Implementation Plan.

2.8.3 MONITORING AND ADAPTIVE MANAGEMENT

The WRIA 30 Plan is considered an adaptive management plan. Adaptive management will enhance performance of the overall plan and will result in more cost effective approaches to dealing with identified issues in the WRIA.

2.8.4 RULE MAKING AND INTERAGENCY AGREEMENTS

The WRIA 30 Planning Unit determined that rule making is not required for any obligation associated with the WRIA 30 Plan. Should the WRPAC come to determine that rule making is appropriate, such determination shall be made only through the same process as was used by the Planning Unit to approve the WRIA 30 Plan under Chapter 90.82.130(1)(a) RCW. This does not preclude State agencies, county governments, or other entities from pursuing rule making or promulgation of ordinances under their own authority.

The Initiating Governments currently intend to have Ecology continue to serve as the State representative responsible for communication and coordination of the State caucus.

Upon approval by the County legislative authority, the WRIA 30 Plan will be recognized by Ecology and accepted through a memorandum of agreement or official written statement. The binding agreement or official statement will acknowledge that Ecology participated in the planning process and that the plan is deemed to satisfy the Ecology's

watershed planning authority for WRIA 30 with respect to the components included under the provisions of 90.82.070, 90.82.90.82.090, and 90.82.100 RCW.

2.8.5 OBLIGATIONS, FORMALIZED COMMITTMENTS, AND AGREEMENTS

Nothing in the WRIA 30 Plan should be construed as an obligation under 90.82.130(3) RCW to any party or entity unless expressly identified as such within Section 8.5 of the WRIA 30 Plan.

Pursuant to 90.82.030(3) RCW, State caucus agencies agree to continue to provide technical assistance on implementing the WRIA 30 Plan at the request of the WRPAC, the Initiating Governments, and/or the Implementing Governments, contingent on available resources.

As an obligation under 90.82.130(3) RCW, Ecology shall contact the Initiating Governments prior to the scoping process for any actions addressing new TMDLs or updating existing TMDLs affecting any water body in WRIA 30.

Ecology will, if asked, assist with the declaration of local drought conditions to help facilitate implementation of actions defined to address such situations per Chapter 173-166 WAC.

Ecology is requested to complete the mapping of water rights and correction of the Water Right Tracking System (WRTS) database within 30 months following the adoption of this plan.

Legislation pertaining to timelines for consultation processes specified in Chapter 173.563.020 WAC is needed in order to implement the WRIA 30 Plan provisions pertaining to timely processing of water right decisions. The need for statutory change regarding timely consultation processes is an appropriate matter to report to the Legislature as provided in Chapter 90.82.043(5) RCW and the matter should be reported annually until it is addressed.

The need for statutory change addressing the conveyance of stock water is an appropriate matter to report to the Legislature as provided in Chapter 90.82.043(5) RCW and the matter should be reported annually until it is addressed.

As an obligation under Chapter 90.82.130(3) RCW, Ecology shall adhere to the approval processes prescribed in the WRIA 30 Plan for plan amendments and the approval and amendment processes for the Detailed Implementation Plan.

Ecology commits to the best of its ability to maintaining the stream flow gage placed on the Little Klickitat River and any other gages for a period of at least 10 years.

3.0 EVALUATION OF WRIA 30 PLAN ACTIONS RELATIVE TO ALTERNATIVES ADDRESSED IN THE STATEWIDE NON-PROJECT EIS

The actions proposed in the WRIA 30 Plan were reviewed against the alternatives specified and evaluated in Ecology's Statewide Environmental Impact Statement (EIS). All but two of the actions in the WRIA 30 Plan were addressed on the non-project level in the Statewide EIS. The two actions not addressed in the EIS are requests for action and are associated with no environmental impacts. If action is taken on those requests, additional SEPA review may be required of the implementing body. No additional analysis of actions contained in the WRIA 30 Plan was determined to be necessary. Table 1 lists the various alternative actions proposed in the WRIA 30 Plan and identifies the alternatives evaluated in the Statewide EIS that are applicable the proposed action.

Adoption of the Statewide EIS covers only non-project actions. Therefore, specific actions triggered by the WRIA 30 Plan need to be evaluated prior to implementation to determine whether additional environmental review under SEPA and possibly NEPA (National Environmental Policy Act) is needed.

Table 1. Actions proposed in the Klickitat River Watershed Management Plan, pertinent alternatives addressed in the Statewide EIS, and conclusions regarding the need for additional SEPA review

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
1	**Water Quantity**	**Current and Future Water Demand**	Obtain information needed to quantify water available for allocation		WP37	Adequately addressed in statewide EIS
2			Public Education and Outreach		WP36	Adequately addressed in statewide EIS
3			Develop Options for Water Management in WRIA 30	Irrigation Efficiency Projects	WP2, WP3	Adequately addressed in statewide EIS
4				Urban Water Conservation Projects	WP1, WP4	Adequately addressed in statewide EIS
5				Water Reclamation	WP5, WP6	Adequately addressed in statewide EIS
6				Water Right Transfer/Trading	WP7, WP8, WP9	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
7				Local Water Bank	WP7, WP8, WP9, WP10. Also specifically addressed on page 5-6 of the EIS as follows: "The processes described in Alternatives WP 7 and WP 8, and potentially, Alternatives WP9 and WP10 could be combined and expanded to involve use of the Trust Water Rights Program in the development and operation of a water bank for both instream and out-of-stream uses."	Adequately addressed in statewide EIS
8				Water Trust Program	WP8	Adequately addressed in statewide EIS
9				Appropriation of New Water Rights	WP10	Adequately addressed in statewide EIS
10				Adjudication	WP12	Adequately addressed in statewide EIS
11				Surface Reservoirs	WP19, WP20, WP21, WP22, WP23	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
12				Aquifer Storage and Recovery	WP24	Adequately addressed in statewide EIS
13				Promote and adopt an RCW Addressing Conveyance of Stock Water Away From Stream to Protect Water Quality	Not covered under EIS	Not Necessary for adoption of plan. Except where exempted by statute, rule- making is subject to environmental review under the State Environmental Policy Act (SEPA). SEPA compliance would be the responsibility of the implementing agency or legislative body (WAC 197-11-704).
14			Monitoring		WP37	Adequately addressed in statewide EIS
15		**Climate Fluctuation and Water Availability**	Monitoring to improve drought forecasting		WP37	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
16			Request local drought declaration from governor's office in dry years (per Chapter 43.83B RCW)		Covered under 173-166 WAC	Adequately addressed in 173-166 WAC
17			Implement emergency drought response options, including temporary water leases, per 173-166 WAC when drought conditions are declared by the governor's office		Covered under 173-166 WAC	Adequately addressed in 173-166 WAC
18			Impose water restrictions if necessary		WP1, WP4	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
19			Use the State's Trust Water Right Program to help document non-use of water during drought conditions and to encourage reduction in water use.		WP7, WP8	Adequately addressed in statewide EIS
20			Public Education and Outreach		WP36	Adequately addressed in statewide EIS
21		**Summer Stream Flow in the Little Klickitat River**	Obtain information needed to identify current land use effects on summer flows in the Little Klickitat River.		WP37	Adequately addressed in statewide EIS
22			Identify and implement actions to address identified land use effects on stream flow.	Purchase or lease of water rights	WP7, WP8	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
23				Participation in the state's Trust Water Right Program	WP8	Adequately addressed in statewide EIS
24				Implementation of water conservation actions	WP1, WP2, WP3, WP4, WP5, WP6	Adequately addressed in statewide EIS
25				Develop a water bank to facilitate water management	WP7, WP8, WP9, WP10 In addition, the action was specifically addressed on page 5-6 of the EIS as follows: "The processes described in Alternatives WP 7 and WP 8, and potentially, Alternatives WP9 and WP10 could be combined and expanded to involve use of the Trust Water Rights Program in the development and operation of a water bank for both instream and out-of-stream uses."	Adequately addressed in statewide EIS
26				Evaluate storage operations and implement if found to be pertinent	WP19, WP20, WP21, WP22, WP23, WP24	Adequately addressed in statewide EIS
27			Public Education			No Impacts

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
28	**Water Quality**	**Little Klickitat River Tempera-ture**	Determine and refine estimates of attainable temperatures and shade using appropriate methodologies		WP37	Adequately addressed in statewide EIS
29			Increase shading to attain the goals specified in the TMDL where reasonably attainable by 2090	Control access of livestock to the riparian area via use of off-channel watering, placement of salt away from streams, regular rotation of pastures, fencing, scheduling of use of riparian pastures to protect riparian vegetation, and/or implementing other best management practices (BMPs).	WP33, WP34, WP35	Adequately addressed in statewide EIS
30				Follow Forest and Fish agreement rules	WP56	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
31				Follow County regulations regarding setbacks from streams. Encourage those owners that are exempt (as defined in the ordinances) to voluntarily follow the critical areas ordinance.	WP35	Adequately addressed in statewide EIS
32				Encourage participation in CRP, CREP, CCRP, and other voluntary actions that protect lands in riparian areas and/or enhance riparian conditions, and consequently protect water quality	WP33, WP34, WP35	Adequately addressed in statewide EIS
33				Develop and implement a riparian area revegetation program	WP33, WP35, WP47	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
34				Increase hyporheic flow through riparian revegetation and removal of levees	WP33, WP35, WP47 (riparian) WP33, WP45, WP48 (levees)	Adequately addressed in statewide EIS
35			Increase Summer Flows	Multiple efforts (see rows 3 through 13)	See rows 3 through 13	Adequately addressed in statewide EIS
36				Protect existing wetlands, especially those that are stream-adjacent or in the vicinity of channel	WP33, WP34, WP52, WP53, WP54, WP56	Adequately addressed in statewide EIS
37				Encourage the development of new wetlands where appropriate	WP33, WP48, WP52	Adequately addressed in statewide EIS
38			Create Thermal Refuge Areas	Enhance hyporheic areas	See row 34	Adequately addressed in statewide EIS
39				Pump cool water into streams	WP35	Adequately addressed in statewide EIS
40				Divert water through underground pipes to cool water	WP35	Adequately addressed in statewide EIS
41			Reduce Sediment Inputs	Encourage appropriate grazing management practices	WP33, WP34, WP35, WP53	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
42				Follow Forest and Fish agreement rules	WP56	Adequately addressed in statewide EIS
43				Upgrade roads that are contributing high volumes of sediment	WP50, WP52, WP56	Adequately addressed in statewide EIS
44				Follow County regulations regarding setbacks from streams	WP54	Adequately addressed in statewide EIS
45				Participation in the Conservation Reserve Enhancement Program or other voluntary actions that protect and/or enhance lands in riparian areas	WP33, WP34, WP35, WP52, WP54	Adequately addressed in statewide EIS
46				Use of filter strips to reduce sediment runoff from agricultural lands	WP33, WP34, WP35, WP52, WP54	Adequately addressed in statewide EIS
47				Use of sediment basins where appropriate on agricultural lands	WP33, WP34, WP35, WP52, WP54	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
48				Direct seed or reduced tillage operations to reduce sediment runoff from tilled lands where appropriate	WP33, WP34, WP35, WP52	Adequately addressed in statewide EIS
49				Implementation of suitable BMPs on concentrated animal feeding operations (CAFO) and follow CAFO requirements	WP31, WP33, WP34, WP35, WP52	Adequately addressed in statewide EIS
50				Facilitate education and training of conservation district personnel to provide local public education, technical support, and assistance	WP33, WP34, WP52	Adequately addressed in statewide EIS
51			Channel Width	Increase riparian vegetation, which will subsequently increase root strength in stream banks and reduce erosion	WP33, WP47	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
52				Use BMPs to minimize or prevent livestock damage of stream banks	WP33, WP34, WP52	Adequately addressed in statewide EIS
53				Stabilize actively eroding stream banks where situation is associated with anthropogenic disturbance and enhance riparian vegetation using appropriate bioengineering techniques	WP33, WP47	Adequately addressed in statewide EIS
54				Identify funds to assist with conservation easements (including urban areas) to enhance degraded areas and protect existing areas that are functioning beneficially for water quality	WP53	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
55				Sections of stream that are currently excessively wide can be addressed through well-engineered stream enhancement projects designed to re-establish a narrower and more complex channel with appropriate width to depth ratio	WP47	Adequately addressed in statewide EIS
56			Evaluate potential to develop a pollution trading program and implement plan if appropriate		WP29	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
57			If the available data and modeling indicates that attainment of state standards specified for the Little Klickitat River cannot be attained, Ecology will be requested to work with the Implementing Governments to conduct a formal use attainability analysis			No impacts associated with a request. Ecology will be responsible for SEPA evaluation if action is taken.
58			Public Education		WP36	Adequately addressed in statewide EIS
59			Monitoring		WP37	Adequately addressed in statewide EIS
60		**Nitrates in Ground water**	Public Education		WP36	Adequately addressed in statewide EIS
61			Collect Additional Information		WP37	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
62			Develop and implement strategy to identify wells with elevated nitrate concentrations		WP37	Adequately addressed in statewide EIS
63			Develop a septic testing program		WP37	Adequately addressed in statewide EIS
64			Evaluate efficiency of existing regulations regarding construction of new septic systems		WP38, WP39, WP40	Adequately addressed in statewide EIS
65			Develop program to update septic systems and/or update wells where problems are found		WP36, WP38, WP39, WP40	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
66			Provide incentives for landowners to upgrade well or septic systems where needed		WP36, WP38, WP39, WP40	Adequately addressed in statewide EIS
67			Identify abandoned wells and seal		WP36, WP37, WP38, WP39, WP40	Adequately addressed in statewide EIS
68			Evaluate potential to develop public water system in Centerville or connect to the City of Goldendale water system		WP7, WP9, WP10	Adequately addressed in statewide EIS
69			Encourage proper agronomic nitrate fertilizer application		WP34, WP36	Adequately addressed in statewide EIS
70			Monitoring		WP37	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
71		**Swale Creek Stream Tempera-ture**	Maintain and/or enhance existing shade		WP33, WP34, WP35, WP47	Adequately addressed in statewide EIS
72			Evaluate potential to increase shade through modification of the railroad bed or placement of structures to facilitate the capture of stream adjacent sediments that could support vegetation		WP47, WP48	Adequately addressed in statewide EIS
73			Monitoring		WP37	Adequately addressed in statewide EIS
74		**Elevated Fecal Coliform Concen-trations**	Conduct additional Monitoring		WP37	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
75			Identify sources: (additional monitoring)		WP37	Adequately addressed in statewide EIS
76			Develop strategies to address identified issues		WP29, WP31, WP33, WP34, WP36, WP37, WP38, WP39, WP40	Adequately addressed in statewide EIS
77			Public Education		WP36	Adequately addressed in statewide EIS
78	**Fish Habitat**	**Fish Habitat Protection and/or Restoration**	Conduct studies to fill data gaps		WP37	Adequately addressed in statewide EIS
79			Identification and Implementation of Potential Restoration Projects	Passage Barriers	WP45, WP46, WP48, WP56	Adequately addressed in statewide EIS
80				Sediment Inputs	WP 33, WP34, WP35 WP-52, WP-53, WP-54, WP-56	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
81				Stream Temperature	WP33, WP34, WP35, WP36, WP38, WP39, WP40, WP47, WP48, WP51, WP52, WP53, WP56	Adequately addressed in statewide EIS
82				Instream Wood Abundance	WP33, WP34, WP36, WP42, WP47, WP48, WP49, WP50, WP51, WP52, WP53, WP54, WP56	Adequately addressed in statewide EIS
83				Nutrients	WP28, WP29, WP30, WP31, WP33, WP34, WP36, WP37, WP38, WP39, WP40, WP52, WP53, WP54, WP55, WP56	Adequately addressed in statewide EIS
84				Fish Population Interactions	WP55	Adequately addressed in statewide EIS
85				Harvest and Out-of-Basin Effects (encourage modification of fish management actions if found pertinent)		No impacts

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
86			Habitat Protection		WP33, WP34, WP35, WP36, WP38, WP39, WP40, WP49, WP50, WP51, WP52, WP53, WP54, WP56	Adequately addressed in statewide EIS
87			Public Education		WP36	Adequately addressed in statewide EIS
88		**Potential Effects of Population Growth and Population Movement on Fish Habitat**	Development in Riparian Areas	Trend monitoring	WP37	Adequately addressed in statewide EIS
89				Implement voluntary or regulatory programs to protect riparian areas as needed	WP33, WP34, WP35, WP36, WP38, WP39, WP40, WP49, WP50, WP51, WP52, WP53, WP54, WP56	Adequately addressed in statewide EIS
90			Stream Flows	Trend monitoring	WP37	Adequately addressed in statewide EIS

Row No.	Resource	Situation	Management Plan Action	Task, Subtask, or alternative (if appropriate)	Statewide EIS Alternative Number(s)	SEPA Review
91				Implement voluntary or regulatory programs to address peak flow issues if determined to be necessary	WP36, WP45, WP48, WP49, WP50, WP51, WP53, WP56	Adequately addressed in statewide EIS
92			Water Quality		See lines 28-77	See lines 28-77 Adequately addressed in statewide EIS
93			Sediment Inputs	Trend monitoring	WP37	Adequately addressed in statewide EIS
94				Implement voluntary or regulatory programs to assess sediment inputs as needed	WP33, WP34, WP35, WP36, WP37, WP42, WP45, WP47, WP48, WP49, WP50, WP51, WP52, WP 53, WP54, WP56	Adequately addressed in statewide EIS

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