Wenatchee Watershed Planning
Phase IV – Detailed Implementation Plan

Prepared by:
Wenatchee Watershed Planning Unit

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FINAL

2514 WENATCHEE WATERSHED PLANNING
PHASE IV - DETAILED IMPLEMENTATION PLAN

Developed by:

Wenatchee Watershed Planning Unit

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EXECUTIVE SUMMARY

This Detailed Implementation Plan is intended to guide the implementation of the Wenatchee River Watershed Management Plan and fulfills the requirements of the Watershed Planning Act, Revised Code of Washington (RCW) 90.82.043 and RCW 90.82.048. The Wenatchee River Watershed (Water Resource Inventory Area 45 [WRIA 45]) includes about 1,370 square miles of land that extends from the crest of the Cascade Mountains, through orchards in the Wenatchee River Valley, to the shrub-steppe of the eastern watershed at the confluence of the Wenatchee and Columbia Rivers. The diverse climatic zones within the watershed are important with respect to water resources because the largest irrigation and domestic water demands occur in the drier, lower valley where streamflow can be limited in dry years. The diverse geography, climate, biology, human needs and human uses of the watershed have significant implications for the implementation of watershed plan actions. The WRIA has been divided into sub-watersheds, as shown in Figure 1-1, to facilitate the implementation and sequencing of local water management actions developed in the plan.

The WRIA 45 Phase IV Detailed Implementation Plan (Implementation Plan) was developed over a period of several months following the development and adoption (in April 2006) of the Watershed Management Plan by Chelan County. Many of the original members of the Wenatchee Watershed Planning Unit (WWPU), who devoted over seven years to develop the Watershed Management Plan, along with new members, continued their dedicated participation to complete this Implementation Plan. Those involved include local, state, federal and tribal governments as well as local agriculture and environmental representatives and landowners in the watershed. The WWPU's efforts were guided by their mission statement:

> ***"to collaboratively develop a management plan for sustaining and improving watershed and community health by protecting water resources, habitat and water use in a way that balances the educational, economic and recreational values associated with a healthy community."***

The Watershed Management Plan contains recommended actions for short-term and long-term water resource management in WRIA 45 at both the watershed-wide scale and the sub-watershed scale. The actions are in the form of policy statements and recommendations, management strategies, and projects and studies. Critical elements include:

- Actions, projects, policies and strategies that will help meet current and future needs for both in-stream and out-of-stream uses, including those that are associated with the revised WRIA 45 instream flow rule (amendments to Chapter 173-545 WAC);

- Projects, assessments and policy recommendations to protect and enhance habitat of threatened, endangered and culturally important species thereby improving overall habitat function and connectivity in the watershed;

- Projects, policy recommendations and studies that address impacts to water bodies that do not meet state and federal water quality standards.

The actions are to be implemented by various participants as prescribed in the plan, subject to funding constraints. The physical mechanism for implementation of the watershed plan actions is each of the technical subcommittees (the Water Quantity/Instream Flow/Water Storage Subcommittee, the Water Quality Technical Subcommittee (WQTSC), and the Habitat Subcommittee (HSC)). Each subcommittee will work with the implementation tables in Appendix A, B and C, respectively, to establish work schedules, identify potential partners, apply for grant funding, track progress on

projects, and update the tables with new information and review priorities on an annual basis. As the subcommittees identify their respective work schedules, they will use the Planning Unit as a mechanism for coordination with other subcommittees and look for opportunities to team with other subcommittees on their work plans and implementation efforts. The lead agency for each subcommittee will help facilitate this coordination and communication among subcommittees.

This Implementation Plan provides practical sequencing for implementing the recommended actions in the Watershed Management Plan based on a prioritization framework developed for each element of the watershed plan. This Implementation Plan is not intended to be a stand-alone document and is intended to be used in conjunction with the Watershed Management Plan.

This Implementation Plan is adopted by the WWPU with the understanding that it will continue to be a living document where new projects will be added and others will be completed or omitted based on new information. The projects in the Implementation Plan will be reviewed and may be revised (if necessary) by the WWPU on an annual basis, as deemed appropriate. The review process is intended to include the evaluation and revision of priorities as well as the addition or elimination of projects for funding each year.

This Implementation Plan has been developed by integrating and coordinating with other planning and implementation efforts in the Wenatchee Watershed. Specifically, the multi-parameter Wenatchee River TMDL process is coordinated through the Water Quality Technical Subcommittee. All actions in this plan are consistent with the implementation strategy for the TMDL. The Habitat Subcommittee works closely with the Upper Columbia Salmon Recovery Board and the Chelan County Lead Entity to ensure consistency with Wenatchee River restoration and protection actions and to coordinate monitoring and funding activities.

ACKNOWLEDGEMENTS

The Wenatchee Watershed Plan and this Implementation Plan were developed through the participation and input of numerous stakeholders from the Wenatchee Watershed; many of whom spent significant time providing information, prioritizing and updating plan actions, and attending meetings to represent their constituencies.

PLANNING UNIT:

The members of the Planning Unit are listed in the Acknowledgements Section of the Phase III Watershed Plan (WWPU, April 2006). All of these entities have continued to participate in the development of the Implementation Plan for the watershed and should be acknowledged for their continued support. Each Subcommittee spent considerable effort prioritizing actions for implementation: the Water Quantity/ISF Subcommittee, the Water Quality Technical Subcommittee and the Habitat Subcommittee of the Planning Unit. In addition, the Upper Columbia Salmon Recovery Board Implementation Team provided guidance and a common structure for updating restoration and protection actions. The Upper Columbia Regional Technical Team has been involved in the ranking and subsequent prioritization of the biologic benefit associated with the habitat actions in the Salmon Recovery Plan that are also included in this 2514 Watershed Planning Implementation Plan.

Participating entities on the Planning Unit are described in Section 1.2.3 of this Implementation Plan.

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LIST OF ACRONYMS AND ABBREVIATIONS

BBT	Biological Benefit Tier
BMP	Best Management Practice
BPA	Bonneville Power Administration
CCD	Cascadia Conservation District
CCCD	Chelan County Conservation District
CCNRD	Chelan County Natural Resource Department
CD	Compact Disc
CDHD	Chelan-Douglas Health District
CELP	Center for Environmental Law and Policy
cfs	cubic feet per second
ChiwaukumH	Chiwaukum Creek Sub-watershed Habitat Action
ChiwawaH	Chiwawa River Sub-watershed Habitat Action
ChumH	Chumstick Creek Sub-watershed Habitat Action
ChumQUAL	Chumstick Creek Sub-watershed Water Quality Action
ChumQUANT	Chumstick Creek Sub-watershed Water Quantity Action
CMZ	channel migration zone
DDT	Dichlorodiphenyltrichloroethane
DIP	Detailed Implementation Plan
DNR	Washington State Department of Natural Resources
DO	Dissolved Oxygen
DOH	Washington State Department of Health
DNS	Determination of Non-Significance
DS	Determination of Significance
Ecology	Washington State Department of Ecology
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ERU	Equivalent Residential User or Unit
ESA	Endangered Species Act
ESHB	Engrossed Substitute House Bill
ESU	Evolutionarily Significant Unit
EWWD	East Wenatchee Water District
FC	Fecal Coliform
GIS	Geographic Information Systems
GLU	Growth and Land Use Action
GMA	Growth Management Act
gpd	gallons per day
gpd/hh	gallons per day per household
gpm	gallons per minute
H	Habitat Action
HSC	Habitat Subcommittee
HWS	Habitat Work Schedule
IcicleH	Icicle Creek Sub-watershed Habitat Action
IcicleQUAL	Icicle Creek Sub-watershed Water Quality Action
IcicleQUANT	Icicle Creek Sub-watershed Water Quantity Action
IMP	Implementation Action
Implementation Plan	Phase IV Detailed Implementation Plan

ISEMP	Integrated Status and Effectiveness Monitoring Program
ISF	instream flow
IRPP	Instream Resources Protection Program (current 1983 instream flow rule)
LiDAR	Light Detection and Ranging
LitWenH	Little Wenatchee River Sub-watershed Habitat Action
LkWenH	Lake Wenatchee Sub-watershed Habitat Actions
LowWenH	Lower Wenatchee River Sub-watershed Habitat Actions
LowWenQUAL	Lower Wenatchee River Sub-watershed Water Quality Action
LWD	large woody debris
MDNS	Mitigated Determination of Non-Significance
MGD	million gallons per day
MissionH	Mission Creek Sub-watershed Habitat Actions
MissionQUAL	Mission Creek Sub-watershed Water Quality Action
MissionQUANT	Mission Creek Sub-watershed Water Quantity Action
NasonH	Nason Creek Sub-watershed Habitat Action
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic & Atmospheric Administration
NPCC	Northwest Power and Conservation Council
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NSTQUANT	Northside Tributaries Water Quantity Action
OCPI	Overriding Consideration of the Public Interest
OFM	Washington State Office of Financial Management
PeshastinH	Peshastin Creek Sub-watershed Habitat Action
PeshastinQUANT	Peshastin Creek Sub-watershed Water Quantity Action
PHABSIM	Physical Habitat Simulation
PO	Public Outreach Action
PUD	Chelan County Public Utility District
Q	Stream discharge, flow (usually measured in cfs)
Q_i	Instantaneous flow
QUAL	Water Quality Action
QUANT	Water Quantity Action
RCW	Revised Code of Washington
RM	River Mile
RTT	Regional Technical Team
SBT	Social Benefit Tier
SEPA	State Environmental Policy Act
SIS	Summary Implementation Strategy
SRFB	Salmon Recovery Funding Board
SSHIAP	Salmon and Steelhead Habitat Inventory and Assessment Project
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
UCRTT	Upper Columbia Regional Technical Team
UCSRB	Upper Columbia Salmon Recovery Board
UGA	Urban Growth Area
UpWenH	Upper Wenatchee River Sub-watershed Habitat Action
UpWenQUAL	Upper Wenatchee River Sub-watershed Water Quality Action
US	United States
USBOR	U.S. Bureau of Reclamation

USFS	United States Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
VSP	viable salmonid population
WAC	Washington Administrative Code
WAT	watershed action team
WCC	Washington Conservation Commission
WDFW	Washington Department of Fish and Wildlife
WhiteH	White River Sub-watershed Habitat Action
WQTSC	Water Quality Technical Subcommittee
WQIP	Water Quality Implementation Plan
WQIR	Water Quality Improvement Report
WRIA	Water Resource Inventory Area
WRMS	Water Resource Management Strategy
WWPU	Wenatchee Watershed Planning Unit
WWTP	Wastewater treatment plant

1.0 INTRODUCTION AND OVERVIEW

This document presents the Phase IV Detailed Implementation Plan (Implementation Plan) for the Wenatchee River Watershed. This Implementation Plan was completed in the first year of Phase IV Implementation, in accordance with the Watershed Planning Act, Chapter 90.82 Revised Code of Washington (RCW). The Wenatchee Watershed is denoted as Watershed Resource Inventory Area (WRIA) 45. This plan addresses the implementation of water management strategies and projects that address water quantity, instream flow, habitat, growth and land use, and water quality in the Wenatchee Watershed.

The purpose of this Implementation Plan is:

1. To guide implementation of the WRIA 45 Watershed Management Plan actions; and,

2. To meet the requirements for a detailed implementation plan per RCW 90.82.043 and RCW 90.82.048.

This Phase IV Implementation Plan provides a framework for implementing water resource management in the Wenatchee Watershed. The plan provides details of implementation obligations set forth in the Phase III Watershed Management Plan (Plan) and includes actions and recommendations from three other parallel processes:

- Salmon Recovery Planning in the Upper Columbia

- Multi-parameter Total Maximum Daily Load (TMDL) Planning in WRIA 45, and

- Chelan County Lead Entity Process

The Phase III Watershed Management Plan prescribes numerous projects, studies, management strategies and recommendations. This Implementation Plan focuses on how these actions will be accomplished, how recommendations will be tracked, accountability, definition of responsible entities, the schedule for implementation, and potential funding sources.

Most of the actions reported in this document have been prioritized by the Wenatchee Watershed Planning Unit (WWPU) and its respective sub-committees such that they can be implemented in a coordinated manner without duplication of effort. If implemented successfully, the actions prescribed in this Implementation Plan will result in a coordinated resource management effort that merges water quantity, instream flow, water quality and aquatic habitat elements at both a watershed and sub-watershed scale. These obligations and the schedule over which they are implemented are presented for information. Actual implementation will depend in large measure on the availability of funding, staff resources, technical capability, priorities of the entities involved, and the recommended priorities of the Implementation Plan.

This Implementation Plan provides priorities and a practical schedule for implementing actions as prescribed in the Phase III Watershed Plan and additional salmon recovery and water quality- related actions that have evolved since the Watershed Plan was adopted in April of 2006. This document is not intended to be a stand-alone document; rather, it is intended to be used in conjunction with the Phase III Watershed Plan. Additional background information pertaining to the prescribed actions can be found in the Phase III Watershed Plan. This is a working implementation plan that is expected to grow and evolve as projects are implemented, data are collected and issues are better understood. It is expected that new actions will be added and some existing actions eliminated if they become obsolete as time progresses. A process for tracking projects and updating this Implementation Plan is discussed in Section 6.

1.1 Setting

Figure 1-1 shows the Wenatchee Watershed (WRIA 45) and its component sub-watersheds. The Wenatchee Watershed (WRIA 45) is approximately 1,370 square miles, including some areas that drain directly into the Columbia River. This plan focuses on the areas that drain directly into the Wenatchee River: the 12 sub-watersheds shown in Figure 1-1. This area consists of approximately 1,330 square miles and includes 230 miles of major streams and rivers and associated aquatic habitat. The headwaters of WRIA 45 originate in the Cascade Mountain range as the Little Wenatchee and White Rivers. These rivers flow into Lake Wenatchee, the source of the Wenatchee River. Various tributaries to the Wenatchee River add significant volume to the river. The Chiwawa River, White River, Little Wenatchee River, Nason and Icicle Creeks are the source of over 90% of the surface water within the watershed (Wenatchee River Watershed Action Plan Addendum, 1996). Primary tributaries include: Nason Creek (River Mile [RM] 53.6), Chiwawa River (RM 48.6), Chiwaukum (RM 35.6), Icicle (RM 25.6), Chumstick (RM 23.5), Peshastin (RM 17.9), and Mission (RM 10.4) Creeks. The Wenatchee River discharges into the Columbia River in the City of Wenatchee.

1.2 Background of Watershed Planning in WRIA 45

In 1998 the Washington State Legislature passed the Watershed Management Act (formed under ESHB 2514; Chapter RCW 90.82), which provided for locally-based watershed planning in each of the 62 Water Resource Inventory Areas (WRIAs) in the State. The intent of this legislation is to have local stakeholders address issues in their own watersheds via a "Planning Unit". The Planning Unit is comprised of those entities most familiar with instream and out-of-stream demands on the water resource: local citizens, businesses, public agencies, and Tribes. Many of those involved have worked on water-related issues in the community prior to "Watershed Planning" through development of the 1998 Watershed Action Plan and other programs.

Although the Watershed Planning Act (per Chapter 90.82.120[2] RCW) does not give the Planning Unit authority to change existing laws, alter water rights or treaty rights, or require any party to take an action unless that party agrees, it does provide the Planning Unit considerable flexibility in guiding the planning process and to develop and implement strategies for managing water resources within a WRIA.

Grant funding through the state Legislature is available for watersheds that elect to initiate this process to develop and implement a Watershed Plan through four phases:

1. *Phase I* - organize a Watershed Planning Unit;
2. *Phase II*- assess existing conditions and develop technical assessments of water resources;
3. *Phase III* - develop and adopt a Watershed Plan; and,
4. *Phase IV* - develop an implementation plan to carry out the recommendations and obligations outlined in the Watershed Plan.

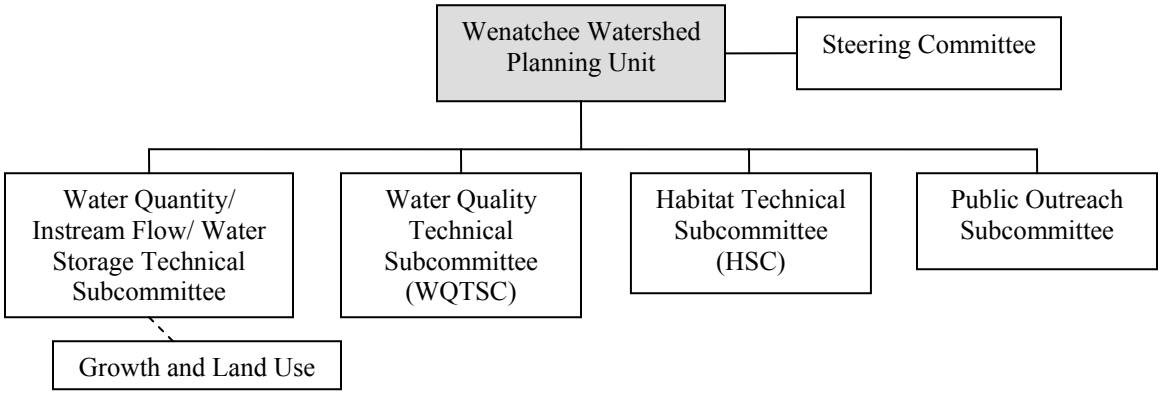
After significant technical assessment, the Planning Unit for the Wenatchee Watershed developed a *Phase III* Watershed Plan (April 2006) to help manage this water resource for the benefit of future generations, while meeting both the environmental and economic goals of the community. The plan addressed a 20-year planning horizon (through 2025) and incorporates an adaptive management focus to allow flexibility and integration of new information into the Plan's current recommendations and actions.

1.2.2 Planning Unit History and Operating Procedures

The three initiating governments, Chelan County (Lead Agency), the Wenatchee Reclamation District and the City of Wenatchee, assembled late in 1998 and determined they would pursue watershed planning under RCW 90.82. The Wenatchee Watershed Planning Unit (WWPU) formed in 1999; Chelan County was designated Lead Agency for grant management purposes and to provide administrative, facilitation and technical support to the process. Participation on the WWPU has always been open to include "anyone who has an interest in the Wenatchee River Watershed" (WWPU, 2003). Active Planning Unit members are grouped as governmental or non-governmental based on their ability to implement specific and tangible elements of the plan.

Much of the watershed planning work in WRIA 45 has been (and continues to be) performed by several key technical subcommittees under the direction of the WWPU. These committees address technical and policy issues associated with each of the technical elements and develop alternative approaches for the WWPU's consideration. The Water Quantity/Instream Flow/Water Storage, Water Quality, and Habitat Technical Subcommittees include a broad range of representation from those with special technical expertise or an interest in the subject area to private citizens concerned about watershed issues. The flow chart below illustrates the structure of the WWPU, its steering committee and its subcommittees.

WWPU Structure



This implementation plan has been developed by integrating and coordinating with other planning and implementation efforts in the watershed. Specifically, the multi-parameter Wenatchee River TMDL process is coordinated through the Water Quality Technical Subcommittee (WQTSC). All actions in this plan are consistent with that effort. The Habitat Subcommittee (HSC) works closely with the Upper Columbia Salmon Recovery process and the Chelan County Lead Entity process to ensure consistency with Wenatchee River restoration and protection actions and to coordinate monitoring and funding activities.

1.2.3 Planning Unit Membership

Active entities represented on the WWPU are listed below. Governmental members are those members of the WWPU who have the ability, through their jurisdiction, responsibility, or authority, to implement specific elements of a watershed plan. Non-governmental members are those members of the WWPU who have an interest in the development of a watershed plan but do not have the ability to implement specific and tangible elements of a watershed plan.

Governmental Members

*Chelan County** **Initiating Governments*
*Wenatchee Reclamation District**
*City of Wenatchee**
Chelan County Public Utility District
City of Cashmere
City of Leavenworth
Cascadia Conservation District
Chelan-Douglas Health District
Washington State Agency Caucus
Washington State Department of Ecology (caucus lead)
Washington State Department of Fish & Wildlife
Washington State Department of Health
Yakama Nation
US Forest Service
US Fish and Wildlife Service
US Bureau of Reclamation
Cascade Orchards Irrigation Company
Jones-Shotwell Ditch
Icicle Irrigation District
Peshastin Irrigation District
Wenatchee-Chiwawa Irrigation District

Non-Governmental Members

Blue Star Growers
Washington Growers Clearinghouse Association
Longview Fibre Company
North Central Washington Audubon Society
Citizens/Landowners
North Central Washington Association of Realtors
North Central Home Builders Association
Center for Environmental Law and Policy (CELP)

1.2.4 Oversight and Coordination during Phase IV

In accordance with RCW 90.82.043[3], the Phase IV Implementation Plan "must clearly define coordination and oversight responsibilities." The primary mechanism for oversight and coordination during Implementation is provided by the WWPU structure with associated subcommittees as illustrated in Section 1.2.2, and described in the 2003 Draft Operating Procedures Manual (WWPU, December 2003) for the WWPU. The WWPU specified implementation actions in the Phase III Plan, including:

> **IMP-1**: *WWPU and Subcommittees will continue to exist and operate under the current operating procedures and will address any needed reorganization to implement the plan as part of Phase IV, Implementation.*

The Chelan County Natural Resources Department (CCNRD) (as the Lead Agency) is responsible for convening the WWPU and associated water quantity/instream flow, habitat and public outreach sub-committees, preparing meeting summaries, administering implementation grant funds, keeping track of the Phase IV projects and budgets and handling day-to-day tasks. Cascadia Conservation District is responsible for convening the water quality technical subcommittee (WQTSC) as part of the TMDL process. The WWPU (and associated subcommittees) play the important role of providing overall direction for implementation, development of requests for proposals from contractors, approval for

contractor selection, development and approval of scopes of work, and project reviews and approvals. The WWPU is also responsible for development and approval for revisions to the WRIA 45 Watershed Management Plan and Phase IV Implementation Plan.

This Phase IV Implementation Plan integrates 2514 watershed planning actions addressing water quantity, instream flows and growth and land use, with salmon recovery actions associated with the Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan and the Chelan County Lead Entity process and water quality actions specified in a multi-parameter TMDL study. All of these actions are coordinated through the interaction of sub-committees of the WWPU. The Habitat Subcommittee (HSC) provides a link to the implementation of the Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan (UCSRB, October 2007). This coordination ensures consistency at the regional level in updating restoration and protection actions in the Upper Columbia implementation schedule as well as with monitoring and funding activities. These efforts are also coordinated with the Chelan County Lead Entity process. The Water Quality Technical Subcommittee (WQTSC) provides a critical link to the multi-parameter Wenatchee River TMDL study. The WQTSC of the WWPU also acts as a local advisory committee throughout the TMDL process.

The WWPU's role in coordination and implementation is further defined by a number of implementation actions defined in the watershed plan. These include:

> **IMP-8**: *In developing its implementation plan, the Watershed Planning Unit will support the development and implementation of existing plans and programs occurring within the watershed while striving to avoid inconsistent or duplicative activities and policies.*
>
> **IMP-9**: *The Planning Unit can choose to review and provide comment on large projects proposed in the watershed that would likely have an impact on the water resource. This could be a review of project or programmatic level Environmental Impact Statements (EISs) or other documents.*
>
> **IMP-10**: *The WRIA 45 Planning Unit members will be involved in the public planning process. The Planning Unit will disseminate information about public comment opportunities to its members. Additionally, the Planning Unit will provide opportunities for public comment on watershed scale studies and plans when, by a vote of the Planning Unit, they are determined to be a priority of the Planning Unit and important to the overall health of the watershed.*
>
> **IMP-11:** *The Planning Unit will ensure that there is an ongoing coordinated monitoring program consistent with the Intensively Monitored Watershed Program currently being administered through NOAA Fisheries and the RTT. Designate responsible entities, a single data management hub for long term monitoring, and a single custodian to store and manage and generally oversee this effort into the future (requires long term commitment).*

Action IMP-11 is being implemented through the Regional Technical Team and the Upper Columbia Implementation Team of the Upper Columbia Salmon Recovery Board (UCSRB). The HSC of the Planning Unit has representation on both of these teams. The UCSRB also has a new data steward to address data management for long term monitoring as specified in IMP-11.

1.3 Public Outreach

Public outreach and public participation have been important components of Wenatchee Watershed Planning since its inception and continues to be important throughout implementation. The CCNRD and Washington Department of Ecology (Ecology) held two public meetings and a public hearing to explain concepts of the instream flow rule amendments that were signed into law in December 2007.

Furthermore, many of the implementation actions include development of public outreach and education programs regarding stream restoration, and water quality and quantity.

Public outreach has taken place on a broad scale through participation in events such as the Wenatchee River Festival and the Wenatchee River Salmon Festival. Information is presented on the overall purpose of the Wenatchee Watershed Plan and on the status of specific project implementation.

A significant amount of public outreach and education have taken place in conjunction with implementation of specific actions in the first year of Phase IV Implementation under watershed planning. These include:

- Public meetings associated with the Mission Creek and Chumstick Creek Water Forums.
- Distribution of a Water Newsletter to residents in the Mission Creek and Chumstick Creek watersheds to inform them of water issues and the need for collecting data and to inform them of opportunities to participate in riparian planting projects.
- Distribution of a Water Use Questionnaire to residents within the Mission Creek and Chumstick Creek watersheds (over 100 questionnaires were completed and returned).
- Newspaper articles, radio announcements and press releases related to salmon habitat project implementation during the 2007 construction season.
- Extensive public outreach was conducted for the Nason Creek Oxbow Reconnection Project, which included a 4-day closure of a state highway. The communication plan developed for this project included two mass mailings to all landowners and businesses affected by the closure (over 2,600), personal communication with business owners, coordination with school bus routes, emergency services and other affected entities, press releases, and more.
- The CCNRD Riparian Habitat Restoration Program actively recruits willing landowners to participate in the program through public events and newsletters and direct communication.
- A Riparian Plant Guide was developed by the CCNRD to assist landowners in developing planting plans for their property.

1.4 Adaptive Management

Throughout the development and after final publication of the Wenatchee Watershed Management Plan (April 26, 2006), the WWPU has continued to consider the Plan to be a living, working planning document to address water-related issues in WRIA 45. It has been the intent of the WWPU that the Plan actions and strategies will evolve as new data are collected and new water-related issues arise in the watershed. Changes in the plan will be based upon best available science and new data as they become available. The WWPU will continue to support new or revised planning actions (when agreed upon by consensus) throughout the implementation phase of watershed planning.

1.5 Approval and Updates for the Phase IV Implementation Plan

This Implementation Plan was approved by the WWPU in April 2008. Following the WWPU's approval, this Phase IV Implementation Plan will be sent to Ecology to fulfill the requirements of the watershed planning act and the deliverables for the WRIA 45 Phase IV grant. As noted in Section 10.3 of the WRIA 45 Watershed Management Plan, the WWPU recognized the need to review and revise the Watershed Management Plan to maintain relevance over the 20-year planning horizon. The WWPU recommended the following implementation action:

> ***IMP-2****: Build a revision process and schedule for the Wenatchee Watershed Plan into plan implementation. Ensure that new plan actions and best available science can be integrated in the future. Planning horizon will be 20 years (through 2025). Updates should be scheduled every seven years, also consistent with County comprehensive plan revision schedule. If additional updates are necessary based on the availability of data or unforeseen water-related issues, the process should be designed such that those updates are possible.*

Projects from this Phase IV Implementation Plan are scheduled to be reviewed annually by the WWPU during Phase IV in January 2009, January 2010, January 2011 and January 2012. This timing is consistent with the need to update the Implementation Schedule in the Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan (October 2007). During the annual review, the actions to be implemented that year will be confirmed by the WWPU and relevant sub-committees to the WWPU. New actions may be added and irrelevant or duplicative actions may be removed. New actions will be a result of the adaptive management process discussed in Section 10.3 of the Phase III Watershed Plan. These new actions are not considered amendments to the Phase III Plan, rather they are efforts to refine and add specificity to the implementation strategies. Changes in priority of projects may also be considered. Per Implementation Action IMP-2, the entire watershed plan and corresponding implementation plan will be updated every seven years, consistent with County comprehensive plan revisions. Amendments to the Phase III Watershed Plan will be considered using the same process used to develop and approve the plan in 2006.

1.6 Plan Availability

Copies of this Phase IV Implementation Plan, including the Appendices, are available for review at the Chelan County Natural Resource Department, 316 Washington Street, Suite 401, Wenatchee WA, online on the Chelan County Natural Resource Department Website (http://www.co.chelan.wa.us/nr/nr_main.htm) and on Compact Disc (CD) that can be obtained by calling the Chelan County Natural Resource Department office in Wenatchee, WA at (509) 667-6533.

2.0 OVERVIEW AND STATUS OF WATERSHED PLAN ACTIONS

The Phase III Watershed Management Plan (WWPU, 2006) contains watershed actions pertaining to instream flow (Table 2-1, Phase III Plan), water quantity (Table 2-2, Phase III Plan), growth and land use (Table 2-3, Phase III Plan), water quality (Table 2-4, Phase III Plan), habitat (Table 2-5, Phase III Plan), implementation (Table 2-6, Phase III Plan) and public outreach (Table 2-8, Phase III Plan). The Phase III Watershed Plan also includes sub-watershed specific actions by sub-watershed in Tables 2-8 through 2-16.

Further discussion of each issue, the recommended actions and planned implementation of those actions can be found in the following sections of the Phase III Plan:

Section 4: Water Resource Management Strategy (WRMS)

Section 5: Water Quantity Actions Supporting WRMS

Section 6: Growth & Land Use

Section 7: Water Quality

Section 8: Habitat

Section 9: Sub-watershed Summaries

Section 10: Implementation

Section 11: Public Outreach

The Phase III Plan was completed in April of 2006, and since that time, salmon recovery efforts, work on the multi-parameter total maximum daily load (TMDL) process, and results of a water storage assessment have led to new and refined actions for water quantity (storage), habitat and water quality. In addition, some of the actions recommended in the Phase III Plan have already been implemented.

In accordance with Section 7 of the Phase III Watershed Plan, the Water Quality Technical Subcommittee (WQTSC) has revised the original water quality actions that were included in the Phase III Plan to reflect the more current TMDL-related actions that have been subsequently developed in the Summary Implementation Strategy and Water Quality Improvement Reports (WQIR) for each TMDL parameter (submitted to EPA in April and July of 2007). Some actions from the TMDL recommendations included in the EPA submittal were refined by the WQTSC so that they could be better understood for prioritization.

Salmon Recovery actions were also refined based on the Habitat Subcommittee's update of the Implementation Schedule of the Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan (UCSRB, October 2007) and revisions to those recommendations.

The status of the actions in the Phase III plan and revised actions that have resulted from work in other planning processes is discussed in Chapter 3.0 and outlined in Detailed Action Spreadsheets in Appendix A (Water Quantity/ISF/Growth and Land Use), Appendix B (Water Quality) and Appendix C (Habitat). The actions from each respective element of the plan fall into one of the following categories:

- "completed" or "in progress" – the action has already been implemented or is in the process of being implemented.

- "ranked" – these actions were ranked by either the water quantity/instream flow subcommittee, the water quality technical sub-committee, or the habitat sub-committee with the assistance of the RTT for biological benefit ratings.
- "recommendation" – actions that are considered recommendations by the WWPU to another entity were not ranked. They are, however, still viewed as important aspects of overall watershed planning and are summarized in this Implementation Plan along with the entity responsible for implementing the recommended action.
- "revised" or "replaced by" – the action was revised or refined to provide further clarity for ranking purposes, or to reflect new data or new results. This is especially pertinent in the water quality actions. In some cases the action was "revised" via replacement by another action that was subsequently ranked. However, none of the revised actions change any obligations from the Watershed Plan.

There are also a number of new actions that have been added by the WWPU as a result of technical work accomplished subsequent to the Watershed Plan. These include new and "reframed" salmon recovery actions, revised water quality actions and new water storage actions. The new and revised actions are addressed in Chapter 3. None of the new actions as listed in this Implementation Plan are significant enough to necessitate an amendment to the Phase III Plan, rather they add specificity to the original actions from the Phase III Plan. Development of refined actions and review of all actions as specified in Phase III planning is consistent with the following implementation actions included in the Phase III Watershed Plan:

IMP-12: *Revise and refine water quality management strategies for both point and nonpoint source pollutants to reflect new data.*

IMP-13: *Perform additional studies to fill data gaps and address unanswered questions as determined by the Water Quality Technical Subcommittee. Ecology will partner with stakeholders in the watershed to conduct studies addressing information gaps (eg., monitoring).*

IMP-14: *Further analysis and discussion may need to take place in Phase IV, Implementation regarding maximum allocation limits in specific sub-watersheds and the mainstem Wenatchee and the relationship between the allocations, and habitat and channel-forming processes.*

IMP-15: *All actions specified in the Wenatchee Watershed Plan should be revisited by the Planning Unit during Phase IV, Implementation.*

3.0 PRIORITIZATION OF WATERSHED ACTIONS

This section describes the WWPU's approach to prioritizing actions for implementation of the WRIA 45 Watershed Management Plan, and includes documentation of a ranking strategy for each element of the plan and the resulting priorities by tier. These priorities will drive corresponding timelines for implementation of the actions in the Watershed Plan.

3.1 Water Quantity, Instream Flow and Growth and Land Use Actions

3.1.1 Background

The Wenatchee Watershed (WRIA 45) has been listed by the State Department of Ecology (Ecology) as one of 16 basins in the state with critical and inadequate streamflows for fish. Critical basins are also referred to as "over-appropriated," meaning that more water has been allocated to out-of-stream uses than is naturally available in some years.

Water Resource Management Strategy

As part of Phase III planning, the WWPU developed a Water Resource Management Strategy (WRMS) to address concerns about protecting and enhancing flows for fish, while at the same time, providing a water reservation to accommodate future growth in the watershed. Since the time the Watershed Plan was completed, this WRMS has been adopted as rule by the State Department of Ecology as amendments to Chapter 173-545 WAC (the Instream Resources Protection Program for the Wenatchee River Basin, WRIA 45). The WRMS includes new management (instream) flows on the mainstem Wenatchee River and a number of tributaries; a water reservation to provide a year-round supply for future domestic and municipal use and stock water; and a seasonal supply of water (maximum allocation) for seasonal use and storage. The quantity of the water reserve has been determined based on both the protection of instream uses and the projected out-of-stream needs in the watershed.

Many of the actions associated with the WRMS are considered "complete" or "in-progress" as a result of the adoption of the instream flow rule. For example, funding has been secured to complete several actions necessary for the implementation of the instream flow rule by June 30, 2009. These actions include the development of a reservation accounting and metering plan, a cumulative impacts analysis for Mission and Chumstick Creeks, administrative support for the Mission and Chumstick Water Forums and hydrogeologic monitoring in Mission and Chumstick Creeks. However, there are a number of additional water quantity and growth and land use actions that will support the overall goals of the instream flow rule and of the WWPU. These have been ranked by the WWPU, along with those actions associated with the instream flow rule that have not yet been implemented. More information on the WRMS and supporting actions can be found in Chapter 4.0 of the Phase III Watershed Plan.

Supporting Water Quantity Actions

The Phase III Plan also proposes watershed-wide measures to enhance the recommended water resource management strategy and help mitigate potential impacts of the water reservation established to support future growth. Many of the water quantity actions will provide additional water for both instream and out-of-stream purposes, help meet future water needs, and extend the life of the water reservation for WRIA 45. These include actions that address water right issues, tracking of water availability and use for the reservation, metering of all new uses eligible under the reserve, studies and tracking of exempt well use, and conservation measures. Other specific water quantity actions have been developed to address local issues in the Mission, Chumstick, Icicle and Peshastin Sub-watersheds, and the Northside Tributaries.

Water Storage

Storage opportunities are also discussed as tools that can be used to maximize the beneficial use of water while minimizing instream impacts. As additional assessment of storage in the watershed provides information, some new actions have been developed regarding water storage. A Needs and Alternatives Analysis is currently underway for the Mission, Peshastin, Chumstick and Icicle Sub-watersheds. These analyses will identify the specific water needs for each stream and provide an initial evaluation of alternatives that could meet those needs. The alternatives identified will be compared based on their ability to meet in and out-of-stream needs. Each recommendation will include an initial assessment of projected costs and potential design and implementation needs. The WQN/ISF/Storage Subcommittee will then prioritize recommendations for each sub-watershed to determine which projects should be pursued.

Growth and Land Use

The WWPU recognized the need to consider land use planning processes and decisions to support the water resource management strategy proposed in the watershed plan. As such, actions in the plan include the establishment of a technical water-resource base for use in land use change decisions, and when considering land use permit applications. The Plan also recommends that water availability be considered as part of Urban Growth Area (UGA) boundary decisions.

3.1.2 Criteria and Process for Ranking

The Water Quantity/Instream Flow Subcommittee of the WWPU worked together to develop a ranking strategy and apply that strategy to water quantity-related actions as discussed above. The criteria used to prioritize the actions for implementation, and the relative weight associated with the criteria are specified in Table 3-1 on the following page. A list of questions was developed for each criteria to assist subcommittee members in consistently scoring each of the actions.

3.1.3 Prioritization Results - Quantity

The results of applying the prioritization strategy outlined in Table 3-1 to both existing and refined water quantity, instream flow, storage and growth and land use actions are presented in Table 3-2. Both the action and the responsible entity (where confirmed) are provided along with the prioritization tier. The actions have been prioritized into four tiers (tier one being the highest priority for implementation). Figure 3-1 provides a visual analysis of the tier in which each action is ranked. Both watershed-wide and sub-watershed specific actions have been included in the prioritization process. Actions that have already been implemented or are in the process of being implemented are also listed in Table 3-2. In this case, actions that have been completed, or are in process of being completed have not been ranked, and their status is noted in the table.

The actions were prioritized into four tiers, based on quartiles. Therefore, each tier represents approximately one quarter of the actions ranked. The highest ranked actions fall into tier one, and the lowest ranked actions fall into tier four.

Water quantity-related recommendations were not ranked; however, they are listed in Table 3-3, along with the entity to which the recommendation is directed. It is the intention of the WWPU to continue to track the recommendations with the responsible entities.

TABLE 3-1

Water Quantity/ISF/Growth and Land Use Action Prioritization Framework

TOTAL POSSIBLE SCORE: 40 pts
1. Overall Benefit (0 - 20 pts.)
• Does the action have a positive effect on other watershed plan elements (Habitat, Water Quality)? • Does the action positively impact a high priority subwatershed (Mission, Peshastin, Chumstick, Icicle)? • Does the action address implementation of the revised instream flow rule? • Does the action result in a more efficient use, or extend the life, of the Reservation? • Does the action address identified community water needs (domestic/municipal)? • Would there be a direct instream flow benefit? • Would action lead to implementation of other actions or enable success of other actions? • Are the benefits short-term (temporary) or long-term?
2. Feasibility/Complexity of Implementation (0 - 10 pts.)
• Is implementation of the action complex (eg., Does implementation rely on cooperation by other entities or individuals [eg., willing water right holders, willing water users])? • Are there obstacles that might delay implementation (eg., water rights, permitting, infrastructure and design, regulatory, long term O&M costs)? • Likelihood of funding. • Is there a high risk of failure in meeting the intended outcomes of the action? • What are the monitoring needs or other long term commitments?
3. Community Support (Define "Broad Community" based on the action) (0 - 10 pts.)
• Could action help boost local economy? • Would action enjoy broad community support? • Would the project be resisted by parts of the community? • Does the action satisfy other community needs? • Are there other direct benefits that result from the action? • Would the project have high visibility to help with outreach and education? • Would there be negative effects of this project?

Notes:

- Cost is not evaluated as part of this process.
- Timing/Sequencing, where appropriate will be evaluated after the ranking occurs by the Subcommittee.

3.2 Water Quality Actions

3.2.1 Background

Water quality monitoring has indicated that there are locations on the Wenatchee River and its tributaries where State water quality standards have been exceeded for temperature, fecal coliform bacteria, DDT, dissolved oxygen (DO) and pH (Figure 3-2). These water quality problems are likely due to current and historic land use practices. Total Maximum Daily Load (TMDL) studies and summary implementation strategies were recently completed by the Department of Ecology (Ecology) and the Water Quality Technical Subcommittee (WQTSC) for each of these water quality parameters. Ecology recently submitted three Total Maximum Daily Load- Water Quality Improvement Reports (TMDL/WQIRs) for the Wenatchee River watershed to the US Environmental Protection Agency (EPA). EPA approved each report shortly after submittal. The reports are listed below.

1. *Mission Creek Watershed DDT Total Maximum Daily Load - Water Quality Improvement Report (TMDL/WQIR) (Ecology, July 2007)*
2. *Wenatchee River Watershed Fecal Coliform Bacteria Total Maximum Daily Load – Water Quality Improvement Report (TMDL/WQIR)(Ecology, April 2007)*
3. *Wenatchee River Watershed Temperature Total Maximum Daily Load – Water Quality Improvement Report (TMDL/WQIR) (Ecology, July 2007)*

The reports can be found at: http://www.ecy.wa.gov/programs/wq/tmdl/watershed/tmdl_info-cro.html.

Ecology anticipates submitting a fourth TMDL to EPA in the future:

Wenatchee River Watershed pH, Dissolved Oxygen and pH - Total Maximum Daily Load Water Quality Improvement Report (TMDL/WQIR).

Each Wenatchee River watershed TMDL/WQIR submittal to EPA also presents a summary implementation strategy for reaching water quality standards. Normally, Ecology develops a Water Quality Implementation Plan (WQIP) for each TMDL within the year following approval of a TMDL/WQIR. In the Wenatchee River watershed, Ecology is in the process of developing one comprehensive WQIP for the Wenatchee River watershed that describes implementation of all four TMDLs. There are several reasons for this, including the intent to provide a comprehensive TMDL implementation plan to the Wenatchee Watershed Planning Unit so they can create a locally prioritized implementation strategy as part of the Phase IV Wenatchee Watershed Management Implementation Plan.

A draft of the comprehensive WQIP is not yet available from Ecology, so the WQTSC used the implementation actions as reported in each of the WQIRs and applied a local prioritization strategy to rank those actions. Actions addressing both point and non-point source loading were ranked for fecal coliform, temperature and DDT. In the case of the DO/pH TMDL (driven by phosphorus loading), the Subcommittee evaluated implementation strategies to address non-point phosphorus loads and these actions are included within this Implementation Plan. However, regulatory actions addressing point sources of phosphorus are still being discussed by a local group who are developing a long-term strategy to address phosphorus reduction targets. Hence, point source actions addressing phosphorus loading (as part of the DO/pH TMDL) have not been included within this Implementation Plan.

A group of wastewater treatment plant owner operators, representing Leavenworth, Cashmere, the Chelan PUD, and the City of Wenatchee, along with Chelan County, are currently involved in developing a long term regulatory strategy to identify phosphorus reduction actions over a multi-year period (approximately 10 years) to meet phosphorus reduction targets that will presumably also help to achieve target DO and pH levels as discussed in the DO/pH TMDL. This group is currently involved

in a broad-scale regionalization wastewater feasibility analysis. There is also a role in the regulatory strategy for non-point contributions.

The pH and DO TMDL will include load allocations for both point and non-point sources of phosphorus in the Lower Wenatchee River and Icicle Creek. This will provide some certainty for NPDES permits. The final results of the Phosphorus regulatory strategy will trigger a re-evaluation of implementation actions associated with the DO and pH TMDL.

The Water Quality component of this Implementation Plan is the product of an effort to coordinate the TMDL process and watershed planning with local stakeholders in the watershed. The actions in this Plan reflect those that have been identified in the implementation strategy of the TMDL and subsequently refined, agreed upon and ranked by the local WQTSC of the WWPU. The recommendations include actions that apply watershed-wide, and sub-watershed specific actions to address local exceedances of water quality standards. It is expected that this locally prioritized list of water quality-related actions as included in this Phase IV Watershed Implementation Plan will become the basis for the TMDL WQIP to be submitted to EPA. As discussed, point source actions for the DO/pH TMDL are still being negotiated and, when completed, will be included in the prioritization using the same scoring criteria.

It should be noted that the water quality actions in this Phase IV Implementation Plan, in some cases, differ from what was included in the Phase III Watershed Plan. This is due to the fact that the TMDL process continued to occur after the Phase III Watershed Plan was completed in April of 2006 and actions were added or modified to address the TMDL listed water bodies. The water quality actions listed in this Phase IV Implementation Plan represent the most recent implementation actions from the TMDL documents. In some cases, the actions were refined for purposes of sequencing and ranking.

3.2.2 Criteria and Process for Ranking

The WQTSC of the WWPU worked together to develop a prioritization framework and apply ranking criteria to water quality actions developed as part of the TMDL implementation strategy, as discussed above. The criteria used to prioritize the actions for implementation, and the relative weight associated with the criteria are specified in Table 3-4 on the following page. A list of questions was developed for each criteria to assist subcommittee members in consistently scoring each of the actions.

TABLE 3-4

Water Quality Action Prioritization Framework

TOTAL POSSIBLE SCORE: 130 pts
1. Human Health Concerns (0 to 20 points)
• Does action address human health concerns (eg., does action address fecal coliform)?
2. Number of Water Quality Parameters Addressed/Cumulative Benefits (5 - 20 points)
• How many water quality parameters does the action address (5, 10, 15, 20 points)? • Does the action benefit other 2514 elements such as habitat, instream flow or water quantity?
3. Source Control (0 - 20 points)
• Does the action target the source of a hot-spot or listed reach or further identify location(s) for implementation?
4. Probability of Continued Benefit/Viability/Project Success/Project Longevity (0 - 20 points)
• Does the action (and location) have potential to reduce pollutant load? • Is there a high risk of failure (eg., project is completed but requires maintenance and may not be maintained into the future)? • Are there long-term monitoring and/or maintenance requirements? • Are there long-term funding requirements associated with successful implementation of the project? • Does the action, once implemented, result in immediate response or benefit?
5. Feasibility/Complexity of Implementation (0 - 20 points)
• Is project development complex (require private land, landowner agreements)? • Are there obstacles that might delay implementation? • Willing landowners. • Would action lead to implementation of other actions or enable success of other actions? • Likelihood of funding.
6. Project Refinement (0 - 10 points)
• Does the action lead to further definition and refinement needed for project implementation? • Does the action involve identification of landowners or specific sources necessary for project implementation? • Does the action serve as a screening tool to determine where to implement a project to optimize results?
7. Antidegradation Considerations (0 - 5 points)
• Does the action prevent a potential future water quality problem from occurring in a particular area RATHER THAN mitigate existing problems?
8. Community Awareness (0 - 5 points)
• Does the action involve education of the public that will result in long-term change in contaminant loading/inputs? • Is the project visible to the public? • Is there broad Community Support for the action?
9. Phosphorus/regulatory and economic considerations (0 - 10 points)
• Does the action have economic consequences? • Are there regulatory issues associated with the action?

** Notes:

a. In the case of sub-actions, determine priority of sub-actions using loading data in the TMDL reports.

b. Where detail is lacking regarding the location of an implementation action, use loading data to determine location of the action.

3.2.3 Prioritization Results – Water Quality

The results of applying the prioritization strategy outlined in Table 3-4 to the refined water quality actions are presented in Table 3-5. The action and total score are provided along with the prioritization tier. The actions have been prioritized into four tiers (tier one being the highest priority for implementation). Figure 3-3 provides a visual analysis of each action and its priority tier. Figure 3-4 shows the relative ranking of each action by water quality parameter. Both watershed-wide and sub-watershed specific actions have been included in the prioritization process. Actions that have already been implemented or are in the process of being implemented are also listed in Table 3-5, and are denoted as "completed" or "ongoing" in the status column at the beginning of the table.

Table 3-5 does not indicate a responsible entity associated with each respective action. Generally the WQTSC will work with the Cascadia Conservation District (CCD) to identify the appropriate entity or entities to implement specific tasks in the 2514 Watershed Plan and TMDL WQIP. This will be performed at quarterly WQTSC meetings, but the actions will be performed throughout the year.

The potential implementers of water quality actions identified for this 2514 - Phase IV Implementation Plan and the TMDL Prioritized List (or WQIP/DIP) includes; the Wenatchee Water Quality Technical Subcommittee, Ecology, Cascadia Conservation District, Chelan County Natural Resource Department, Chelan County Community Development, Chelan County Public Works, Chelan-Douglas Health District, Chelan County Public Utility District, Washington State Department of Transportation, United States Forest Service, Natural Resources Conservation Service, Leavenworth National Fish Hatchery, Washington State Department of Natural Resources, Bonneville Power Administration, US Environmental Protection Agency, City of Leavenworth, City of Cashmere, various irrigation districts, private landowners, developers, agriculture producers, watershed groups (the CCD would work with all four of these last listed groups and work to implement actions with them). Other project sponsors may step up depending on the required action.

Water quality-related recommendations were not ranked; however, they are listed in Table 3-6 and the entity to which the recommendation is directed is also indicated. It is the intention of the WWPU to continue to track the recommendations with the responsible entities.

3.3 Habitat Actions

3.3.1 Background

The habitat component of the Wenatchee Watershed Plan builds upon existing research, reports, and programs to initiate habitat protection and improvement actions in WRIA 45. The Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan (UCSRB, October 2007) was used to identify actions to address habitat needs for these species in the Wenatchee Watershed and was used in conjunction with the Biological Strategy (UCRTT, 2007) to identify both the restoration and protection actions prescribed in the Phase III Plan. The Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan can be found at: http://www.ucsrb.com/plan.asp.

The Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan was adopted by the National Marine Fisheries Service (NMFS) in October 2007. The Upper Columbia Salmon Recovery Board is relying on local groups, referred to as watershed action teams (WATs) for project implementation. The Planning Unit's Habitat Subcommittee (HSC) is the watershed action team for the Wenatchee watershed. A representative from the HSC also participates on the Upper Columbia Implementation Team to help facilitate updates to the Implementation Schedule and to help coordinate monitoring, data management and funding opportunities.

The HSC's role is to update the Wenatchee portion of the implementation schedule with relevant and current information. This effort began in February 2008, focusing not only on the use of consistent terminology but also on incorporating the prioritization and sequencing of actions. An effort is underway to include more specificity in describing the actions and locations, where feasible. This effort to update the Implementation Schedule will occur annually to track progress and completion of projects. In an effort to better coordinate and track progress on a regional level, members of the Implementation Team and local Lead Entities are working on bringing the Upper Columbia Implementation Schedule into a web-based project tracking software program called the Habitat Work Schedule. Once completed, this system will serve as the project tracking system for the Chelan County Lead Entity, UCSRB and the WWPU as well as many funding entities and project sponsors.

Habitat actions are identified that will improve the function and connectivity of habitat throughout the watershed. Generally, the approach is to protect high quality habitat in the upper watershed and pursue opportunities to enhance habitat in the middle and lower watershed. As specified in the Watershed Planning Act, the Plan emphasizes salmonid and aquatic habitat. However, to benefit both aquatic and terrestrial species, upland habitat is considered as it relates to aquatic processes. Actions are based on the biological needs of each specific sub-watershed in the WRIA.

3.3.2 Criteria and Process for Ranking

Beginning in early 2007, the HSC worked with the Upper Columbia Implementation Team and the RTT to rank the habitat actions in the Wenatchee portion of the Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan (October 2007). The Implementation Schedule is currently being revised to include the specific updates from the Wenatchee, including details on project activities and locations. The result of this collaborative process will be a more detailed implementation plan for habitat actions in the Wenatchee watershed. After the Implementation Schedule update is complete, the HSC will continue to collaborate with other local representatives to sequence the projects for efficient project and funding development. For example, the HSC is currently working with several partners to develop a draft Nason Creek Prioritization Framework that includes a social and biological benefit ranking. The objective of this framework is to drill down from the Implementation Schedule to prioritize and sequence projects at specific sites. The Bureau of Reclamation has conducted a comprehensive fluvial geomorphic analysis from which the results will be fed into the Nason Creek Prioritization Framework.

Some habitat actions identified in the watershed plan were not ranked as they were not specifically identified in the recovery plan. These actions are discussed in Section 3.3.3.

Biological Benefit

The Upper Columbia Regional Technical Team (RTT) classified each sub-watershed (HUC-5 level) in the Upper Columbia Region into categories, based on the functionality of the aquatic ecosystems in those watersheds, and the capability of the ecosystem to protect against ecological catastrophe for endemic populations (UCRTT, 2007). Figure 3-5 shows the category classification for each of the sub-watersheds in WRIA 45. In general, Category 1 (protection/restoration) watersheds represent systems that most closely resemble natural, fully functional aquatic ecosystems. Protecting these areas is a high priority, although restoration in some areas is also needed. Category 2 (restoration/protection) watersheds support important aquatic resources, but have a higher level of fragmentation resulting from habitat disturbance or loss. Restoring ecosystem function and connectivity within these areas are priorities. Category 3 (restoration) watersheds may support salmonids but they have experienced substantial degradation and are strongly fragmented by habitat loss. The priority in these areas is to rectify the primary factor that is causing the habitat degradation.

In 2007, the RTT evaluated the biological benefit of the Wenatchee habitat actions in the salmon recovery plan. The biological benefit component of rating a project has 4 to 5 criteria, depending on the type of project being assessed (restoration, protection or assessment). These criteria focus on benefits to Viable Salmonid Population (VSP) criteria across multiple listed species (McElhany, et al. 2000). The criteria include: abundance and productivity, spatial structure and diversity, number of limiting factors addressed, priority watershed, and sequencing considerations. The scoring system was set up to favor projects that benefit multiple species because there are three listed species in the Upper Columbia including spring Chinook, steelhead and bull trout. However, the RTT intentionally allowed a majority (60-87%) of the points to be available for single-species, high-priority projects because each population (Wenatchee, Entiat, Methow, Okanogan [steelhead only]) needs to meet its own viability criteria for the Evolutionary Significant Unit (UCSRB 2007; ICTRT 2007).

The biological benefit portion of the RTT project ranking criteria was applied to the action types and specific actions from the Implementation Schedule. The biological benefit scores were grouped into four tiers and combined with the social benefit ranking to sequence implementation of habitat actions in the Wenatchee watershed.

Social Benefit

The sequencing of habitat actions from the Implementation Schedule also considered the social benefit of a particular action. The Habitat Subcommittee of the Wenatchee Watershed Planning Unit worked together to develop a prioritization framework to evaluate the social benefits of habitat actions and applied the ranking criteria to habitat actions developed as part of the salmon recovery planning process for the Upper Columbia, as discussed above. The criteria used to prioritize the actions for implementation, and the relative weight associated with the criteria are specified in Table 3-7 on the following page. A list of questions was developed for each criteria to assist subcommittee members in consistently scoring each of the actions.

3.3.3 Prioritization Results - Habitat

Habitat actions were ranked by applying the prioritization strategy outlined in Table 3-7 to evaluate social benefit. These results were combined with the biological benefit rankings (described above) that were provided by the RTT. The results of this ranking are presented in Table 3-8 which indicates both the action and the tiers for the action as a result of prioritization. The actions have been prioritized into four tiers for both biological and social values (tier one being the highest priority for implementation). Figure 3-6 provides a visual analysis of each action and its biological and social benefit ranking. Actions that have already been implemented or are in the process of being implemented are also listed in Table 3-8 and denoted as “completed” or “in progress”.

Table 3-8 does not specify a responsible entity. As projects are identified for implementation and funding, project sponsors will be identified. Larger projects may have multiple project sponsors and partners.

Recommendations and some assessments were not ranked; however, they are listed in Table 3-9, and it is the intention of the WWPU to continue to track the recommendations and assessments with the responsible entities.

There are a number of habitat actions, including terrestrial actions, that were included in the Phase III Watershed that were not ranked during the ranking of the salmon recovery actions. These actions and their status are listed in Table 3-10. Most of the actions are either recommendations or are currently being addressed. Any actions that still warrant prioritization will be prioritized during the annual update of the implementation actions.

Data gaps will be tracked in the implementation schedule and are currently being prioritized by the RTT.

TABLE 3-7

Salmon Recovery Action Prioritization Framework

SOCIAL CRITERIA (30 points possible)
1. Feasibility of Implementing the Possible Action ("Implementers") (0 - 10 pts.)
• Is project development complex (require private land, landowner agreements)? • Are there obstacles that might delay implementation (eg., water rights, permitting, design, regulatory)? • Willing landowners. • Would action lead to implementation of other actions or enable success of other actions? • Likelihood of funding. • *Consider the ability to complete project near-term (1-3 year timeline). Conservation easements or acquisitions take longer to complete and the benefit is greater when more are done.*
2. Community Support (Define "Broad Community") (0 - 10 pts.)
• Could action help boost local economy? • Would action build community support for Salmon Recovery? • Would action enjoy broad community support? • Would the project be resisted by parts of the community? • Does the action satisfy other community needs? • Are there other direct benefits that result from the action? • Would the project have high visibility to help with outreach and education? • Would there be negative effects of this project?
3. Project success/longevity - AS DEFINED FOR PROJECTS (not Assessments) (0 - 10 pts.) ***** Assumes the project is completed. * Consider the expected duration of a project (i.e. LWD structures may be designed for shorter-term benefits).
• Long Term Project Responsibility and if so, who will likely have that responsibility? • Public vs. private property. • Passive vs. active. • Is there a long term stewardship responsibility? • Are there long term maintenance requirements, commitments? • Are benefits for perpetuity, long-term benefits vs. short term? • Is there a high risk of failure *(risk of not having intended social/community outcomes)*? • What are the monitoring needs?

Notes:

- Cost is not evaluated as part of this process.
- Timing/Sequencing, where appropriate will be evaluated after the ranking occurs by the Subcommittee (eg., downstream to upstream for culvert replacements).
- Actions in the Wenatchee Watershed Plan that are not included in the salmon recovery implementation table will be evaluated by the WWPU and subcommittees using the same general methodology. Other criteria will need to be considered including wildlife benefits.

4.0 WATERSHED–WIDE IMPLEMENTATION SYNOPSIS

All of the actions evaluated as part of this implementation plan are discussed in Section 3.0 and listed in the Section 3.0 tables. The various elements of the watershed plan (eg., quantity, quality and habitat) are somewhat different in their applicability to the watershed as a whole, or to individual sub-watersheds. Many of the quantity actions that address water use, instream flow and growth and land use considerations can be applied watershed wide.

Water quality actions tend to be more sub-watershed specific as they are based on TMDL implementation strategies that address specific areas where the TMDL listing occurred. Some of these water quality actions may be applied watershed-wide, but are currently listed only under the sub-watersheds wherein the TMDL listing occurs for a specific parameter. Public education and outreach strategies that address a TMDL parameter are applicable watershed-wide. It should be noted that a new 303(d) list is currently being reviewed and additional listings are likely to occur in WRIA 45. It is inherent in the flexibility of this implementation plan to accommodate additional listings as they occur elsewhere in the watershed by expanding the geographic area wherein the water quality actions are relevant.

The general approach for habitat elements identified in this implementation plan is to recommend actions based on the functionality of the aquatic ecosystem in each of the respective sub-watersheds. Therefore, protection strategies are the primary strategies applied to sub-watersheds that are rated as Category 1 (those systems that most closely resemble natural, fully functional aquatic ecosystems). Restoration strategies are the primary strategies applied to Category 3 sub-watersheds (watersheds that have experienced substantial degradation and are strongly fragmented by habitat loss). Both restoration and protection strategies are applied to Category 2 sub-watersheds. Hence, few habitat actions are relevant watershed-wide, but rather, they apply to the specific condition of a sub-watershed. The category designation of each sub-watershed in the Wenatchee watershed is shown in Figure 3-5.

Table 4-1 provides a list of watershed-wide water quantity, instream flow and growth and land use actions that have ranked in the top tiers for implementation. Table 4-2 provides a list of highly ranked (tier 1 and tier 2) water quality actions. Although some of these actions are directed at the sub-watersheds where TMDL listings have occurred, they are relevant to the watershed as a whole. Full descriptions of these actions and implementation notes can be found in Appendix A and B, respectively. Watershed-wide habitat actions have not been ranked because they were not location specific (only habitat actions specific to a sub-watershed as specified in the salmon recovery implementation schedule have been ranked), however a number of important watershed-wide habitat actions are listed in Table 4-3.

This prioritization method is simply a means to evaluate sequencing relationships between actions, not a method of determining if certain actions should occur. Social and financial constraints can and will affect the sequencing. The WWPU recommends that actions and strategies be implemented in sequence according to the tiers. However, opportunities to fund lower priority actions should also be evaluated. The WWPU intends to attempt to initiate these high priority projects, funding for these projects, or completion of the projects by 2010. The WWPU will also continue to monitor recommendations and contact responsible entities if the recommendations are not being implemented.

Other actions that have been ranked (see section 3.0) should continue to be considered as actions and re-evaluated annually based on progress of existing projects and available funding, and as other opportunities become available.

5.0 IMPLEMENTATION SYNOPSIS BY TRIBUTARY

The broad range of activities, natural resources, and economic opportunities in the Wenatchee Watershed can be attributed to the highly variable landscape over which the Wenatchee River and its headwaters flow. The WRIA's diverse geography, climate, biology, human impacts, and human needs have been considered in the development of this plan. Due to its diversity, the watershed has been divided into tributary areas, or sub-watersheds, as shown on Figure 1-1, to enable application of water management strategies that are appropriate on a local scale. This section provides a synopsis and strategy based on high priority watershed actions for each sub-watershed. Sub-watersheds are addressed downstream to upstream in WRIA 45: Lower Wenatchee, Mission, Peshastin, Chumstick, Icicle, Upper Wenatchee, Chiwaukum, Chiwawa, Nason, Lake Wenatchee, White and Little Wenatchee Rivers.

This section is intended to help facilitate the Plan's implementation on a sub-watershed level. It should be noted that, in addition to the recommended high priority actions in these sub-watershed sections, there are also watershed-wide actions that apply to individual sub-watersheds. Each sub-watershed section in this chapter includes a table of highly ranked actions for that specific sub-watershed.

Chapter 9 of the Phase III WRIA 45 Watershed Plan contains detailed descriptions and maps of each sub-watershed and should be used as a companion document to this section.

5.1 Lower Wenatchee Tributary Synopsis and Strategy

5.1.1 Status

- Important passage corridor for many species including Sockeye salmon, spring and summer Chinook salmon, steelhead and bull trout
- Spawning and rearing habitat for summer Chinook and steelhead
- Provides water for two municipalities
- Provides water for irrigation for the lower Wenatchee valley and along portions of the Columbia River
- Area experiencing growth with two cities and two urban growth areas identified
- Transportation corridor with state highway and railroad
- Popular recreation area for whitewater rafting, kayaking, tubing and fishing

5.1.2 Summary of Issues

- Roads and railroad constrain river channel migration, cut off habitat, and decrease woody debris and gravel recruitment
- Riparian and off-channel habitat have been significantly lost or degraded and floodplain function has been impaired
- Late summer instream flows are often very low
- Stream temperature has exceeded state and federal water quality standards resulting in a 303(d) listing and TMDL
- Dissolved Oxygen and pH have exceeded state and federal water quality standards resulting in a 303(d) listing and TMDL. These exceedences are related to phosphorus transport and loading. Addressing phosphorus in this area will be complicated and expensive for point-source dischargers.
- Water, at times, can be very limited for residents in the Northside tributaries

5.1.3 Actions Completed or In Progress

- The Water Resource Management Strategy has been adopted as rule by Ecology. This includes new instream flow levels, an interim reservation for growth for Lower Wenatchee and a maximum allocation of water for seasonal use.
- Funding has been secured to begin implementation of the instream flow rule through development of a reservation accounting and metering plan.
- The Phosphorus Regulatory Strategy Group is working to develop long-term strategies to address phosphorus reduction targets.
- Implementation of channel connectivity and off-channel habitat projects (CMZ projects)
- Implementation of riparian planting projects

5.1.4 Implementation Strategy

- Water Quality – there are multiple TMDL listings with the DO/pH listing being a high priority. This issue is especially complicated and has regulatory and economic impacts to point-source dischargers.
- Water Quantity and Instream Flow – this is a high priority for instream flow protection. Implementation of the instream flow rule and management of the reservation are especially important.
- Habitat – Category 2 watershed is a high priority for restoration and protection.
- Continue working on phosphorus point source strategies to submit WQIR. Re-evaluate non-point actions and priorities in coordination with these point source strategies.
- Consider Best Management Practices (BMPs) to address DO/pH
- Identify non-point sources of phosphorus near Dryden, Cashmere and in tributaries
- Continue stream flow and temperature monitoring
- Protect stream banks and riparian habitat, upland and wetland habitat
- Riparian Plantings where needed and associated with CMZ projects
- Implement channel migration zone study projects and other channel connectivity and off-channel habitat projects
- Provide public information regarding water limitations in Northside Tributaries

5.1.5 Synthesis

The regulatory implications of the phosphorus effort make it a high priority for developing and implementing both point and non-point source strategies. There is a lack of consistency, however, in that phosphorus has not been identified as a limiting factor for listed species through salmon recovery efforts yet the DO/pH water quality standards that have been exceeded and are driving this effort are based on fish needs. This lack of consistency is identified as a public outreach problem, especially for the wastewater plants as they look at costly changes to their systems.

Table 5-1 provides a list of the high priority actions that are recommended for implementation in the Lower Wenatchee and actions that are currently in progress or completed.

5.2 Mission Tributary Synopsis and Strategy

5.2.1 Status

- Provides water for agriculture within the Mission, Brender and Yaksum valleys
- Home to approximately 21% of total population within the Wenatchee Watershed and includes a portion of the City of Cashmere
- Area is experiencing growth

- Minor spawning area for spring Chinook and steelhead (based on intrinsic potential). Currently, no known spring Chinook spawning occurs here.

5.2.2 Summary of Issues

- Limited water quantity and low to non-existent instream flows (in places) during late summer and early fall. This affects water quality, instream salmon habitat conditions and impacts the ability to meet current and future out-of-stream needs.
- Water quality issues include temperature, fecal coliform and DDT exceeding state water quality standards resulting in 303 (d) listings and TMDLs.
- Channelization of lower Mission, Brender and Yaksum creeks.
- Loss of channel sinuosity and floodplain function.
- Culverts exist that are barriers to fish passage.

5.2.3 Actions Completed or In Progress

- The Water Resource Management Strategy, adopted as rule by Ecology, includes new instream flow levels, an interim reservation for growth for Mission Creek and a maximum allocation of water for seasonal use.
- Funding has been secured from Ecology for the following projects:
    - development of a reservation accounting and metering plan.
    - conduct surface water and groundwater interaction monitoring.
    - conduct a cumulative impact assessment for Mission Creek.
    - work with the Mission Creek Water Forum in evaluating alternatives and developing strategies to increase water available for instream and out-of-stream uses.
- Areas with fecal coliform contributions have been prioritized based on the TMDL technical report.
- Implementation of riparian planting projects
- Repaired log cross-vanes and construct new rock cross-vanes to create a pool for irrigation outtake. Projects incorporate new screens, increased fish habitat and riparian plantings

5.2.4 Implementation Strategy

- Water Quality – multiple TMDL listings with high priority actions recommended
- Water Quantity and Instream Flow – a high priority area for increasing water availability and implementation of the instream flow rule
- Habitat - Category 3 watershed for salmon recovery (restoration)
- Track water availability and meter new uses under reservation (this action is tied to the development of the reservation accounting and metering plan).
- Increase water availability for instream flows and out-of-stream needs to help address high temperatures, habitat issues and water availability issues.
- Address fecal coliform issue – identify and mitigate sources, conduct public outreach
- Continue monitoring for fecal coliform and temperature
- Increase riparian vegetation, where needed, and protect existing riparian areas.
- Interaction with landowners and the public should be coordinated. Most of the actions here require interaction with members of the public.

5.2.5 Synthesis

The highest priority actions in Mission Creek are to eliminate or minimize fecal coliform loadings and to increase water availability and implement specific recommendations tied to the revised instream flow rule.

Table 5-2 provides a list of the high priority actions specific to the Mission sub-watershed and actions that are in progress or completed.

5.3 Peshastin Tributary Synopsis and Strategy

5.3.1 Status

- Provides water for agriculture within the Peshastin Creek watershed and throughout the lower Wenatchee valley, including a portion of the Mission Creek area.
- Major spawning area for steelhead and bull trout core area.

5.3.2 Summary of Issues

- Channel migration, riparian habitat, floodplain function, stream sinuosity, and gravel recruitment are severely impacted by the state highway.
- Low stream flows in lower Peshastin Creek. This affects instream salmon habitat conditions, specifically migration and rearing, water temperature and the need for water to meet current and future out-of-stream needs.
- Loss of riparian habitat resulting from land development and state highway reduces quantity and quality of spawning and rearing habitat
- Water quality issues include temperature exceeding state water quality standards resulting in 303 (d) listings and a TMDL.

5.3.3 Actions Completed or In Progress

- The Water Resource Management Strategy, adopted as rule by Ecology, includes new instream flow levels, a reservation for growth for Peshastin Creek and a maximum allocation of water for seasonal use.
- Funding has been secured from Ecology for the following projects:
    - development of a reservation accounting and metering plan.

5.3.4 Implementation Strategy

- Water Quantity and Instream Flow – a high priority area for increasing water availability and implementation of the instream flow rule
- Habitat - Category 2 watershed for salmon recovery (restoration/protection)
- Increase water availability for instream flows and out-of-stream needs to help address habitat issues, water availability issues and high temperatures
- Track water availability and meter new uses under reservation (this action is tied to the development of the reservation accounting and metering plan).
- Improve habitat diversity and quantity with channel reconfiguration projects that form pools and increase thalwag depth
- Protect existing riparian habitat and channel migration floodplain function
- Increase riparian vegetation where needed
- Continue stream flow and temperature monitoring

5.3.5 Synthesis

Channel reconfiguration and instream flow improvement actions need to be coordinated. Both actions are driven by the need to improve pools and thalwag depth for fish migration and rearing. Expected channel modification will affect necessary flow improvements.

Table 5-3 provides a list of the high priority actions specific to the Peshastin sub-watershed and actions that are in progress or completed.

5.4 Chumstick Tributary Synopsis and Strategy

5.4.1 Status

- Individual water rights for irrigation throughout the valley and increasing domestic use outside of the Leavenworth Urban Growth Area (UGA).
- Area is experiencing growth
- Major spawning area for steelhead and minor spawning area for spring Chinook (based on intrinsic potential). Currently, no known spring Chinook spawning occurs here.

5.4.2 Summary of Issues

- Limited water quantity and low to non-existent stream flows (in places) during late summer and early fall. This affects water quality, instream salmon habitat conditions and the ability to meet current and future out-of-stream needs.
- Water quality issues include fecal coliform and temperature exceeding state water quality standards resulting in 303 (d) listings and TMDLs.
- Culverts exist that are barriers to fish passage, including the North Road culvert and numerous smaller culverts upstream.
- Private land development and high road density affects sediment delivery
- Channel migration is affected by the railroad, roads, multiple water crossings
- Riparian habitat has been degraded or lost in many places from Little Chumstick to mouth

5.4.3 Actions Completed or In Progress

- The Water Resource Management Strategy, adopted as rule by Ecology, includes new instream flow levels, an interim reservation for growth for Chumstick Creek and a maximum allocation of water for seasonal use.
- Funding has been secured from Ecology for the following projects:
    - development of the reservation accounting and metering plan.
    - surface water and groundwater interaction monitoring.
    - a cumulative impact assessment for Chumstick Creek.
    - work with the Chumstick Creek Water Forum in evaluating alternatives and developing strategies to increase water available for instream and out-of-stream uses.
- Areas with fecal coliform contributions have been prioritized based on the TMDL technical report.
- Implementation of riparian planting projects
- Field assessments and prioritization of fish passage barriers are underway.
- Funding is secured for approximately 14 culvert replacements in 2009. North Road culvert replacement is scheduled for 2010.

5.4.4 Implementation Strategy

- Water Quantity and Instream Flow – a high priority area for increasing water availability and implementation of the instream flow rule
- Address fecal coliform issue – identify and mitigate sources, conduct public outreach
- Habitat - Category 3 watershed for salmon recovery (restoration)
- Restore passage with culvert improvements or upgrades at North Road and numerous upstream locations.

- Increase water availability for instream flows and out-of-stream needs to help address habitat, water quality and water availability issues.
- Track water availability and meter new uses under reservation (this action is tied to the development of the reservation accounting and metering plan).
- Continue monitoring for fecal coliform and temperature
- Increase native riparian vegetation, where needed, and protect existing riparian habitat. This includes control of noxious weeds and use of livestock exclusion fencing.
- Reduce sediment inputs
- Conduct public outreach about water conservation and water quality issues

5.4.5 Synthesis

The highest priority actions in Chumstick Creek are to eliminate or minimize fecal coliform contributions, increase water availability and implement specific recommendations tied to the revised instream flow rule, and replace the North Road culvert. Interaction with landowners and the public should be coordinated since most of the actions here require public interaction. Outreach should specifically be coordinated with private culvert replacements, hydrogeologic monitoring, riparian plantings, and fencing that is related to water quality issues.

Table 5-4 provides a list of the high priority actions specific to the Chumstick sub-watershed and actions that are in progress or completed.

5.5 Icicle Tributary Synopsis and Strategy

5.5.1 Status

- Provides irrigation water for the lower Icicle valley and provides water for agriculture throughout the lower Wenatchee River valley.
- Provides a portion of the City of Leavenworth's domestic water supply
- Provides water for the Leavenworth National Fish Hatchery
- Minor spawning area for spring Chinook and major spawning area for steelhead. Core area for bull trout.
- Designated as a Key Watershed in the Northwest Forest Plan
- Important tribal fishery
- Popular recreational area
- Lower Icicle valley is experiencing growth

5.5.2 Summary of Issues

- Seasonal low stream flows in the lower Icicle between the major diversions and the hatchery return
- Barriers to fish migration at the Leavenworth Hatchery and possibly upstream (passage near Snow Creek is not certain)
- Land development in the lower Icicle has affected stream channel migration, recruitment of large woody debris, and off channel habitat
- Road development in the upper Icicle may confine the stream channel and affect floodplain function.
- Temperature and DO/pH have exceeded state water quality standards resulting in 303(d) listings and TMDL implementation
- Increased sedimentation

5.5.3 Actions Completed or In Progress

- The Water Resource Management Strategy, adopted as rule by Ecology, includes new instream flow levels, a reservation for growth for Icicle Creek and a maximum allocation of water for seasonal use.
- Funding has been secured from Ecology for the development of a reservation accounting and metering plan.
- The Leavenworth National Fish Hatchery and partners are working on a plan to restore stream flows between the diversions and hatchery return. This group will also work on improving fish passage at the hatchery facility (headgate and dam 5).

5.5.4 Implementation Strategy

- Water Quantity and Instream Flow – a high priority area for increasing water availability and implementation of the instream flow rule.
- Habitat - Category 2 watershed for salmon recovery (restoration/protection)
- Increase water availability for instream and out-of-stream needs to address habitat issues, water availability issues and high temperatures
- Track water availability and meter new uses under reservation (this action is tied to the development of the reservation accounting and metering plan).
- Provide improved fish passage at hatchery and all diversion intakes
- Reduce sedimentation through streambank restoration, riparian planting and road management
- Increase riparian vegetation where needed and protect existing riparian areas
- Continue stream flow and temperature monitoring

5.5.5 Synthesis

Water quantity and stream flow issues are complex as they involve four large water users and their use is closely linked to the management of lakes in the uppermost portions of the watershed. Additional water may be available for domestic use beyond the current limited reservation specified in the instream flow rule once flows are restored between the diversions and the hatchery return.

Table 5-5 provides a list of the high priority actions specific to the Icicle sub-watershed and actions that are in progress or completed.

5.6 Upper Wenatchee and Chiwaukum Tributary Synopsis and Strategy

5.6.1 Status

- Major spawning area for both steelhead and spring Chinook. Core area for bull trout.
- Important passage corridor for many species
- Important spawning habitat for summer Chinook
- Important rearing habitat for spring Chinook and steelhead
- Mainstem from Lake Wenatchee to the Chiwawa River is designated as a Key Watershed in the Northwest Forest Plan

5.6.2 Summary of Issues

- The state highway and private land development affect large woody debris recruitment, channel migration and gravel recruitment.
- The state highway cuts off a large oxbow near the Nason Creek confluence
- Historical log drives and resultant loss of wood recruitment has reduced channel complexity.

5.6.3 Actions Completed or In Progress

- The Water Resource Management Strategy, adopted as rule by Ecology, includes new instream flow levels, a reservation for growth for the Upper Wenatchee and Chiwaukum Rivers and a maximum allocation of water for seasonal use.
- Funding has been secured from Ecology for the development of the reservation accounting and metering plan.

5.6.4 Implementation Strategy

- Category 1 for Habitat - Protect remaining floodplain and riparian habitat
- Maintain instream flows
- Restore habitat diversity by enhancing large woody debris (complete assessment first)

Table 5-6 provides a list of actions specific to the Upper Wenatchee and Chiwaukum sub-watersheds.

5.7 Chiwawa Tributary Synopsis and Strategy

5.7.1 Status

- Provides water for irrigation for the lower Chiwawa valley and along the mainstem Wenatchee River near Plain.
- Major spawning area for spring Chinook and steelhead. Bull trout core area.
- Designated as a Key Watershed in the Northwest Forest Plan
- Critical spawning and rearing habitat for multiple species
- Popular recreational area

5.7.2 Summary of Issues

- Limited development may affect riparian vegetation in lower watershed

5.7.3 Actions Completed or In Progress

- The Water Resource Management Strategy, adopted as rule by Ecology, includes new instream flow levels, a reservation for growth for the Chiwawa River and a maximum allocation of water for seasonal use.
- Funding has been secured from Ecology for the development of the reservation accounting and metering plan.
- Fish passage restored – 2 culverts replaced in Alder Creek; 3 culverts replaced in Clear Creek

5.7.4 Implementation Strategy

- Habitat Category 1 – Protect existing riparian habitat and channel migration floodplain function
- Maintain stream flows
- Restore fish passage at remaining barrier culverts

Table 5-7 provides a list of actions specific to the Chiwawa sub-watershed.

5.8 Nason Tributary Synopsis and Strategy

5.8.1 Status

- Major spawning area for spring Chinook and steelhead. Core area for bull trout.
- Transportation corridor with state highway and railroad

5.8.2 Summary of Issues

- The state highway, railroad, and private land development affect woody debris recruitment, channel migration, and gravel recruitment
- Temperature has exceeded the state water quality standards resulting in a 303(d) listing and TMDL

5.8.3 Actions Completed or In Progress

- The Water Resource Management Strategy, adopted as rule by Ecology, includes new instream flow levels, a reservation for growth for Nason Creek and a maximum allocation of water for seasonal use.
- Funding has been secured from Ecology for the development of the reservation accounting and metering plan.
- Nason Creek Oxbow reconnection of a half-mile long oxbow cutoff by highway 207 between Coles Corner and the mouth.

5.8.4 Implementation Strategy

- Habitat - Category 2 watershed for salmon recovery (restoration/protection)
- Maintain stream flows
- Protect existing riparian habitat and channel migration floodplain function
- Improve habitat diversity and channel stability by reconnecting historic channels and floodplain and with instream diversity projects
- Riparian restoration where needed to improve habitat diversity and stream temperature
- Improve fish passage through culvert improvements or replacements
- Continue stream flow and temperature monitoring

5.8.5 Synthesis

Implementation and long-term effectiveness of channel reconnection projects and instream complexity projects are complex. The Wenatchee Habitat Subcommittee is currently working with the results of a detailed Nason Creek Assessment completed by the Bureau of Reclamation to prioritize project development at specific sites and ultimately develop a more detailed implementation strategy by project area.

Table 5-8 provides a list of actions specific to the Nason sub-watershed and actions that are in progress or completed.

5.9 White, Little Wenatchee and Lake Wenatchee Tributary Synopsis and Strategy

5.9.1 Status

- Major spawning area for spring Chinook (White, Little Wenatchee)
- Major spawning area for steelhead (White, Little Wenatchee)

- Core area for bull trout (White, Little Wenatchee)
- Necessary adult holding and juvenile rearing area for sockeye and bull trout (Lake Wenatchee)
- Critical rearing habitat for sockeye salmon (Lake Wenatchee)
- Designated as Key Watersheds in Northwest Forest Plan (White, Little Wenatchee)
- Critical spawning and rearing habitat for many species
- Headwaters of Wenatchee River contains mostly pristine habitat
- Popular area for recreation

5.9.2 Summary of Issues

- Past riparian harvest and log drives have altered woody debris accumulations and channel morphometry (White, Little Wenatchee)
- Lower Little Wenatchee is on the state 303(d) list for temperature.
- Development pressures place a critical need to protect and maintain stream channel and floodplain integrity (White)
- Shoreline development (Lake Wenatchee)

5.9.3 Actions Completed or In Progress

- The Water Resource Management Strategy, adopted as rule by Ecology, includes new instream flow levels that will protect flows in the upper watershed, a reservation for growth for the upper watershed and a maximum allocation of water for seasonal use.

5.9.4 Implementation Strategy

- Category 1 watersheds for salmon recovery (protection)
- Protection of existing habitat and floodplain function (all)
- Floodplain restoration (White, Little Wenatchee)
- Riparian plantings (higher priority in White, moderate in Little Wenatchee)
- Sediment reduction (Little Wenatchee)
- Trophic status of Lake Wenatchee needs to be determined (current and historic)

5.9.5 Synthesis

The strategies for the Little Wenatchee and White Rivers are clear as indicated above. There is very little coordinated information on Lake Wenatchee relating to water quality and other issues. There is a general acknowledgement that the lake is extremely important for fish and wildlife habitat as well as for the local residents and recreational visitors. A coordinated effort focused on water quality and other related issues that involves local residents to develop specific priorities for the lake would be beneficial.

Table 5-9 provides a list of the high priority actions specific to the White, Little Wenatchee and Lake Wenatchee sub-watersheds and actions that are in progress or completed.

6.0 IMPLEMENTATION STRATEGY AND SCHEDULE

6.1 Practical Approach to Implementation

During preparation of this Implementation Plan, the WWPU discussed prioritization of planning actions (i.e., policy statements, management strategies, and projects) for implementation. Sequencing and the importance of an action in coordinating among other watershed plan elements was incorporated into the prioritization criteria. Further notes on sequencing are also included in each of the implementation tables in Appendix A, B and C. The WWPU acknowledged that development of a timeline that specifies a sequence for implementation of Plan actions would be a practical way to order implementation. A number of controls on the sequencing of implementation actions were identified:

- Implementation of Plan actions is contingent on the available resources (i.e., funding and personnel) of the implementing entity or entities.
- Implementation of many management strategies and recommendations is dictated by the schedule of a specific entities' planning process (e.g., comprehensive plan updates, water system plan updates, etc.).
- Some Plan actions have a higher priority than others.
- There is a logical sequence to the most important obligations. Consider the sequence in which obligations / recommendations need to be implemented.
- Review and address the "essential" implementation tasks identified in the Plan.
- Provide an overview of early implementation actions and current status.
- Compile timelines and funding information provided by implementing entities.

6.2 Mechanism for Implementation

The physical mechanism for implementation of the watershed plan actions is each of the technical subcommittees (the Water Quantity/Instream Flow/Water Storage Subcommittee, the Water Quality Technical Subcommittee (WQTSC), and the Habitat Subcommittee (HSC)). Each subcommittee will work with the implementation tables in Appendix A, B and C, respectively, to establish work schedules, identify potential partners, apply for grant funding, track progress on projects, and update the tables with new information and review priorities on an annual basis. As the subcommittees identify their respective work schedules, they will use the Planning Unit as a mechanism for coordination with other subcommittees and look for opportunities to team with other subcommittees on their work plans and implementation efforts. The lead agency for each subcommittee will help facilitate this coordination and communication among subcommittees. This coordination will become easier in the future if all projects are entered and tracked through the Habitat Work Schedule software that will be used in the near-term for habitat project tracking.

The role of each subcommittee to effectively manage and implement projects should be emphasized. The lead agency for each subcommittee is responsible for coordination and facilitation of that subcommittee to ensure that projects are implemented. Water quantity, instream flow and growth and land use actions will be implemented by the Water Quantity/ISF/Storage subcommittee under the watershed planning lead agency, Chelan County. Water quality actions will be implemented by the WQTSC with the leadership of Cascadia Conservation District under Centennial grant funding for TMDL support. Habitat actions will be implemented by the HSC through a coordinated effort of the watershed planning process, the Chelan County Lead Entity process and upper Columbia salmon recovery effort. The HSC is coordinated by Chelan County.

Recommendations in the plan, although not ranked, will continue to be monitored by the Planning Unit and the respective, responsible subcommittee on an annual basis. The subcommittee lead will contact responsible entities if the recommendations are not being implemented.

6.3 Implementation Schedule

The schedule for implementation will depend on the size and complexity of the projects; funding availability; the capacity of the subcommittee, project sponsors and partners to complete projects; and internal project requirements such as permitting.

The schedule for implementation of the Plan actions (i.e. the policy statements, management strategies, and projects listed in Section 3.0 of this Plan) should be directly linked to the relative priority of an action and the likelihood of funding for that action. Prioritization criteria incorporated sequencing and scheduling considerations in the rankings. The timing of the implementation of the actions is also subject to funding, legislative action, the availability of data, staffing priorities and limitations, and the commitment of stakeholders to implementation of obligated actions. The availability of funding is a critical component of implementation as without funding many of the projects would not be able to be completed.

6.3.1 Near Term Funded Actions: 2008 - 2011

A significant amount of funding has been secured for the implementation of actions over the next several years as discussed in Section 7.2 and the status column of the action tables in Appendix A, B, and C. The funding acquired to implement these projects/actions defines the near-term implementation schedule. If funding has been secured it is assumed that the action will be implemented in the next three years. Much of the near term work is focused on implementing the instream flow rule, high priority habitat projects and determining the phosphorus regulatory strategy. Rather than providing a list of actions to be implemented year by year the Planning Unit has established goals for implementation based on ranking priorities and a percentage of actions initiated, funded or completed as follows in Sections 6.3.2 to 6.3.4.

6.3.2 Near Term Actions that Required Funding 2009 - 2013

In addition to implementation of actions for which funding has been secured, the Planning Unit goal is to implement 50% of Top Tier (Tier 1) watershed-wide and sub-watershed actions in the next five years, subject to the constraints outlined above.

6.3.3 2014-2018

The Planning Unit goal is to implement the other 50% of Top Tier (Tier 1) watershed-wide and sub-watershed actions and 50% of the Tier 2 actions between 2014 and 2018, subject to the constraints outlined above.

6.3.4 2019-2023

The Planning Unit goal is to implement the other 50% of the Tier 2 watershed-wide and sub-watershed actions and 50% of the Tier 3 actions between 2019 and 2023, subject to the constraints outlined above.

6.3.5 Evaluation of the water reservation under the Instream Flow Rule

The current status of the water reservation will be evaluated by Ecology and the Wenatchee Planning Unit prior to 2010, 2015, 2020, and 2025.

6.4 Review of Actions and Update Schedule for this Implementation Plan

Since this Implementation Plan is a living document it will grow and evolve over time as actions are implemented and as a better understanding of the nature of the Wenatchee Watershed is established. There are actions that will require annual review by the WWPU. The following tasks are recommended to be included within the annual review and Implementation Plan update processes:

1. Review, on an annual basis, the list of high priority actions from the Plan that have unknown schedules and attempt to establish timelines and / or reconsider the actions and implementing entities. If new timelines / actions / implementing entities are established, these should be included in updates of the Implementation Plan as needed, and no less than annually. These actions also include orphan recommendations (i.e. recommendations that currently have not been assigned to an implementing entity). Actions that are not accomplished in the estimated implementation year will be addressed the following year.

2. Annual review of Plan recommendations, namely short-term actions and long-term actions that depend upon the completion of short-term actions.

3. Review of actions that require funding.

4. Update Completed Actions table based on any projects or processes that were completed over the course of the year.

Projects from this Phase IV Implementation Plan are scheduled to be reviewed annually by the WWPU during Phase IV in January 2009, January 2010, January 2011, and January 2012. During the annual review, the actions to be implemented that year will be confirmed by the WWPU and relevant sub-committees to the WWPU. New actions may be added and irrelevant or duplicative actions may be removed. Changes in priority of projects may also be considered. Per Implementation Action IMP-2, the entire watershed plan and corresponding implementation plan will be updated every seven years, consistent with County comprehensive plan revisions. This Phase IV Implementation Plan schedule is consistent with the need to update the Upper Columbia Salmon Recovery Implementation Schedule.

6.4.1 Project Tracking Tool for Implementation

The CCNRD is also the Lead Entity for Chelan County and is currently implementing the Habitat Work Schedule (HWS) for habitat actions within Chelan County, including all of WRIA 45. The HWS is a web-based project tracking software program with GIS capabilities. The CCNRD along with the UCSRB Implementation Team is exploring how to incorporate the Implementation Schedule (Appendix C) for Wenatchee into this software to be linked to individual project details. Appendix C serves to guide habitat protection and restoration work for three processes: the habitat portion of Wenatchee Watershed Planning, the Habitat Work Schedule for the Wenatchee watershed under the Chelan County Lead Entity process, and as the Wenatchee portion of the Upper Columbia Salmon Recovery Plan's Implementation Schedule. Once habitat actions are entered into this program, CCNRD and the WWPU will explore the use of this program to assist in tracking the implementation of other watershed plan elements: water quantity, instream flow and water quality.

Use of the HWS for tracking and updating habitat actions will be performed through coordination with Lead Entity funding and other specific habitat project implementation funds. Phase IV funding could help fund the input, tracking and updates of water quantity and instream flow actions and would be maintained by Lead Agency staff (CCNRD). There is a need to explore funding alternatives for tracking implementation of water quality actions as part of full watershed planning.

6.5 Outreach Coordination

Public outreach and public participation have been important components of Wenatchee Watershed Planning since its inception and continues to be important throughout implementation. Many of the implementation actions include development of public outreach and education programs regarding stream restoration, and water quality and quantity. There is a significant opportunity for the Planning Unit to facilitate coordination of efforts amongst the three subcommittees to merge outreach and education actions through one central Public Outreach program/entity for natural resource protection activities in the watershed. Table 6-1 provides a listing of all outreach related actions prescribed in this plan.

6.6 Agreements, Approvals and Permits

> RCW 90.82.043[3] "The implementation plan must 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 necessary agreements, approvals and permits required to implement the obligations and recommendations outlined in the Watershed Plan and Implementation Plan will be analyzed on an individual or collective basis, as each project is considered and pursued. At the time this Implementation Plan was prepared, the following are relevant:

- **Coordination and Oversight Responsibilities**: The WWPU and lead agency are continuing with their current operating procedures. The CCNRD is the lead agency and responsible for administering grant funds for watershed planning grants. The role of the WWPU and its entities are as a committee formed to prepare the Implementation Plan and put into action the goals of the Watershed Management Plan. The Planning Unit subcommittee structure enables coordination between 2514 watershed planning, Salmon Recovery Planning and Lead Entity Planning, and TMDL water quality planning to avoid duplication of effort and competing attempts to garner funding (See Section 1.2.4 for additional discussion of coordination of entities in local watershed planning). The CCNRD is responsible for coordinating the Planning Unit and Water Quantity/Instream Flow Subcommittee under watershed planning and for coordinating the Habitat Subcommittee under lead entity. The Cascadia Conservation District coordinates the Water Quality Technical Subcommittee under Centennial Clean Water Act funding.

- **Interlocal Agreements**: The WWPU currently operates under operating procedures as specified in its 2003 Draft Operating Procedures Manual (WWPU, December 2003). Implementation Action IMP-6, as specified in the watershed plan recognizes that the WWPU may develop recommendations (such as cooperative agreements) for formalizing obligations with the entities identified as responsible for Plan actions as projects are pursued.

    - **Rules or Ordinances**: During year 1 of Phase IV implementation, the Wenatchee instream flow rule was amended (Chapter 173-545 WAC). These amendments came directly from the water resource management strategy specified in Section 4.0 of the Watershed Plan. The existing water management rule (adopted in 1983) was amended to guide water use planning and decision-making for future human domestic needs while maintaining enough water in streams to protect important fish species and existing water rights. The rule amendments were recommended by the WWPU (see Section 8.1.2)

- **State or Local Administrative Approvals and Permits**: The WWPU expects that the Department of Ecology will effectively implement the amended instream flow rule for WRIA 45 (Chapter 173-545 WAC) with assistance and involvement form the WWPU. Any processing of water right permit applications or trust water right actions will be done by Ecology on a project by project basis. Permits required from federal, state or local agencies to implement plan actions will be determined on a case-by-case basis. This Implementation Plan will be reviewed and approved by the WWPU in accordance with its standard operating procedures.

- **Specific Funding Mechanisms:** Section 7.0 of this Implementation Plan addresses funding mechanisms for Watershed Plan implementation.

7.0 FUNDING MECHANISMS

This section addresses the requirement for the Phase IV Implementation Plan to define "specific funding mechanisms" (per RCW 90.82.043[3]) for implementation of the WRIA 45 Watershed Management Plan actions. The following funding mechanisms are considered: (1) Phase IV Implementation grant funds; (2) resources committed by implementing entities; and, (3) other grant funding. In addition to funding for specific actions in the watershed plan, funding is needed for:

- Continued coordination and facilitation of the technical subcommittees and planning unit
- Administrative and technical support to the subcommittees for updating the implementation tables and tracking implementation
- Project development and grant writing
- Project effectiveness monitoring (i.e. photo points, surveying, snorkeling, reports, etc)
- A coordinated public outreach and education effort for all watershed planning activities
- Coordination of other issues that may arise that need the involvement of the WWPU or a specific technical subcommittee.

In the WRIA 45 Watershed Management Plan, the WWPU recognized that implementation is subject to budgetary constraints and that no entity is obligated to implement an action unless adequate funding is available to do so. In reality, since there is insufficient funding through Watershed Planning Phase IV to implement all the actions, resources to implement actions will come primarily from the obligated/responsible entities defined in the Watershed Management Plan and from additional grant sources. The WWPU could also consider hiring a grant writer to assist with applying for potentially available funds.

Implementation Actions for Funding and Staffing that were recommended in the watershed plan include:

IMP-4: Continue to identify alternate funding sources (alternate to watershed planning funds).

IMP-5: Consider implementation funding for grant writers.

7.1 Phase IV Watershed Planning Funds

Phase IV Watershed Planning Implementation funds provided by the State Legislature include:

- Up to $100,000 for the first three years of implementation, with a 10% required match ($11,111 per year). Second year funding is conditioned on the completion of an approved Detailed Implementation Plan.

- At the end of three years, up to $50,000 for the fourth and fifth years of implementation, with a 10% required match ($5,556 per year).

Phase IV Implementation funds (potentially available through 2012) will be utilized primarily by the WWPU to administer and facilitate implementation of the WRIA 45 Watershed Management Plan and implement Tier I and Tier 2 projects.

7.2 Resources Committed by Implementing Entities

The implementation tables in Appendices A through C provide a summary of the Plan recommendations, management strategies, and projects and the entities that have committed, by approval of the WRIA 45 Plan, to fulfill these obligations. No attempt has been made to quantify the

value of these commitments. However, the total value is significant. An overview of some of these important funding commitments includes:

- Grant No. G0800386 between Ecology and CCNRD for a cumulative impacts analysis in Mission and Chumstick Creeks.
- Grant No. G0800399 between Ecology and CCNRD for development of a reservation accounting system and metering plan.
- Grant No. G0800335 between Ecology and CCNRD for hydrogeologic monitoring in Mission and Chumstick Creeks.
- Grant No. G0800493 between Ecology and CCNRD for support of the Mission and Chumstick Water Forums.
- The Bureau of Reclamation (USBOR) provides project sponsor support for project identification and development, permitting and project management. USBOR also supports 2-3 specific projects per year through project design, construction observation and surveying. In addition to specific project implementation, USBOR is committed to finalizing the Nason Creek Assessment in 2008 that will help identify future projects and intends to begin a similar assessment in Peshastin Creek and Icicle Creek in the next several years.
- Many projects have been funded and their status is indicated in the implementation tables (SRFB, BPA, etc).

7.3 Coordinating Funding with Other Implementation Processes

The WWPU will also coordinate grant funding with other planning processes. For example, funding of some habitat actions and projects will occur through the Chelan County Lead Entity process which is coordinating Salmon Recovery Funding Board (SRFB) funding in the watershed. Additionally, the habitat work is coordinated with the UCSRB and its staff (providing implementation coordination and oversight on a regional scale and providing a data steward to manage monitoring data).

Short-term TMDL – related actions are being funded through Ecology's Centennial Clean Water Fund. The WQTSC will continue to be coordinated by the Cascadia Conservation District (CCD) through, at least, December 2010 (the end of their current grant cycle). In addition, the CCD will continue to submit grants to implement specific actions identified in the Water Quality Improvement Plan through 2010 and beyond. These grant applications will include a task for continued support for and coordination of the WQTSC.

Water quantity and instream flow related actions can be coordinated and implemented using a variety of funding sources depending on the project benefits. Specific funding is available for projects related to irrigation or agricultural improvements, storage related efforts, and outreach and education on conservation and efficiencies. If actions will have a direct instream flow benefit then project funding will be coordinated with salmon recovery/habitat funding and water quality related funding.

Chelan County continues to maintain a running list of potential grant funding opportunities in its database. The list of these opportunities is too long to include in this plan, but will be available on the Habitat Work Schedule when completed. Specific salmon recovery funding opportunities are listed in Appendix D.

7.4 Other Resources

It takes the efforts of many entities and individuals to implement projects. There are many participants in Wenatchee Watershed planning that have the skills and expertise needed for implementation. Everyone from the project sponsor and partnering entities to affected groups and landowners, whose

support is vital, are critical to getting a project completed. Subcommittees, local citizens and the scientific community help identify, develop and review projects, WWPU members and other cooperating agencies also provide in-kind services and are used for grant matching. USBOR gives overall project support and helps sponsors to develop the project design, obtain funding and necessary permits, and to manage and inspect projects on the ground. USFWS and the USFS provides, when able, technical assistance with fish removal for project construction as well as some project effectiveness monitoring. Project partners and community members in the Wenatchee watershed are successful in designing and implementing projects because of the dedication and resourcefulness of participants.

7.5 Review of Grant Funding Sources

In order to aid in the implementation of actions prescribed in this Implementation Plan, specifically for those policy statements, management strategies, and projects that will not be funded through Phase IV Watershed Planning funds, additional funding sources must be sought. The most common additional funding sources include:

- Specific grants that may be available through the Washington State Departments of Ecology, Fish and Wildlife and Health. These will vary over time.
- State Department of Ecology funding for project implementation available on a biennium basis.
- Federal funding sources for monitoring, pollution prevention and control, watershed and drinking water source protection, wetlands and wildlife. These funding sources are compiled in EPA's *Catalog of Federal Funding Sources for Watershed Protection* (EPA, 2003).
- Centennial Clean Water Funds available through the Washington State Department of Ecology.
- The Northwest Power and Conservation Council funding of habitat restoration projects and public involvement and education through the Bonneville Power Administration (BPA).
- Salmon Recovery Funding Board (SRFB).
- Fundraising by the WWPU.
- Boise State University's Environmental Finance Center has partnered with the EPA's Environmental Finance Program to provide a searchable database containing funding options for a variety of environmental protection programs including watershed planning. The database can be found at the following Boise State website: http://efc.boisestate.edu/watershed/searchmenu.asp.
- Additional State Ecology funding for water storage projects.
- Salmon Recovery Funds. A list of the salmon recovery funding sources is provided in Appendix D. This list is based on the UCSRB funding matrix at www.ucsrb.com.

8.0 IMPLEMENTATION STRATEGIES

This section addresses the requirements of RCW 90.82.043 (2), (3), (4) (i.e., water supply strategies, timelines and milestones, coordination efforts to eliminate duplication) and the requirements of RCW 90.82.048 (1) and (2) to address planned future use of inchoate municipal water rights.

8.1 Strategies for Production Agriculture, Commercial, Industrial and Residential Use, and for Instream Flow (per RCW 90.82.043(2))

In accordance with RCW 90.82.043[2], the Implementation Plan "must contain strategies to provide sufficient water for: (a) production agriculture; (b) commercial, industrial and residential use; and, (c) instream flows." There are many Plan actions scheduled for implementation (as described in Section 3.0 of this Implementation Plan) that address this requirement. Most specifically, the water quantity, instream flow and growth and land use actions address this requirement. Furthermore, the water resource management strategy that has since been adopted as an amendment to the instream flow rule of WRIA 45 [(amendments to Chapter 173-545 WAC (the Instream Resources Protection Program for the Wenatchee River Basin, WRIA 45)] was the product of a four-year process that assessed the future water needs of agriculture, residential, commercial and industrial uses.

8.1.1 Agriculture, Commercial, Industrial and Residential Use

The Water Resource Management Strategy as discussed in the WRIA 45 Phase III Watershed Plan (WWPU, April 2006) addresses all future needs of water by sub-watershed. When this strategy was developed, water use for various needs (agriculture, commercial, industrial, residential) was evaluated. The reservation set in the rule by sub-watershed, specifies a quantity of water needed in each area for each sub-watershed and purpose of use, which was determined to be primarily domestic. Other actions in the watershed plan recommend increased conservation and efficiencies, water right management, and other strategies that would provide sufficient water in accordance with RCW 90.82.043[2].

In water limited areas (Mission, Chumstick, Peshastin and Icicle subwatersheds), part of implementing the Water Resource Management Strategy and resulting instream flow rule will require determining targets for instream flow improvements. As part of the storage assessment, alternatives are being evaluated to meet the instream flow improvement targets.

The specific state and local policies that are involved include the following:

- Amended Wenatchee Instream Flow Rule
- Washington's Growth Management Act (RCW 36.70A);
- Washington's Water Rights Act:
  - Watershed Planning Chapter (RCW 90.82);
  - Water Resources Act of 1971 (RCW 90.54);
  - Water Code Chapter (RCW 90.03); and
- Chelan County's Comprehensive Plan.

8.1.2 Instream Flows

As part of the watershed planning process, the WWPU developed a water resource management strategy for its Phase III Watershed Plan that resulted in the amendment of the existing water management rule (adopted in 1983). This strategy is intended to guide water use planning and decision-making for future human domestic needs while maintaining enough water in streams to protect important fish species and existing water rights. The rule amendments were recommended by the WWPU. Specifically, the rule amendments:

- revise existing instream flow levels where the WWPU found that the scientific studies merited revisions,
- set instream flows at three new locations in the upper Wenatchee River Basin,
- establish maximum allocation limits to protect stream functions,
- create a reservation of water for certain future uses,
- set maximum allocations above the instream flows for the Wenatchee River and its tributaries,
- close the Chumstick and Mission Creek sub-basins for interim periods to complete studies, and
- replace the seasonal closure on Peshastin Creek with a combination of instream flows and maximum allocation limits.

As part of this process, instream flow studies were performed on the Wenatchee River and a number of tributaries to determine acceptable instream habitat loss for purposes of determining a reservation for future out-of-stream water uses.

8.2 Planned Future Use of Inchoate Municipal Water Rights

This section of the Implementation Plan meets the requirement of RCW 90.82.048 [1]and [2] for the WWPU to address the planned future use of inchoate municipal water rights, including how these rights will be used "to meet the projected needs identified in the watershed plan, and how the use of these rights will be addressed when implementing instream flow strategies identified in the watershed plan."

8.2.2 Definition of Inchoate Municipal Water Rights

Municipal water rights are water rights held by entities that supply water for municipal purposes. Per RCW 90.03.015, municipal water use is defined as:

> *"beneficial use of water: (a) For residential purposes through fifteen or more residential service connections or for providing residential use of water for a nonresidential population that is, on average, at least twenty-five people for at least sixty days a year; (b) for governmental or governmental proprietary purposes by a city, town, public utility district, county, sewer district, or water district; or (c) indirectly for the purposes in (a) or (b) of this subsection through the delivery of treated or raw water to a public water system for such use.*

Per RCW 90.03.550, beneficial use municipal supply may also include:

> *"water withdrawn or diverted under such a right and used for:*
>
> 1. *Uses that benefit fish and wildlife, water quality, or other instream resources or related habitat values; or*
> 2. *Uses that are needed to implement environmental obligations called for by a watershed plan approved under Chapter 90.82 RCW."*

Under current law, water rights for municipal supply purposes may be retained as inchoate since they are not "relinquished" due to lack of use.

8.2.3 Inchoate Municipal Water Rights in WRIA 45

In April 2005, the WWPU sent letters to both Group A and Group B water suppliers in WRIA 45 inviting them to attend the April 21, 2005 meeting for water purveyors regarding 2514 watershed planning in the WRIA 45. The letter and subsequent meeting were used to describe the watershed planning process and the need to understand municipal water use in the watershed. In January of 2008 the WWPU sent a second letter and questionnaire with prepaid postage to Group A water suppliers requesting additional data on their water use and water rights in order to satisfy Phase IV requirements to identify inchoate water rights of Group A systems. Approximately 115 letters were sent to Group A water suppliers (including those that were designated as inactive) and 14 were returned by the Postal Service as "undeliverable." A copy of the both letters sent and a list of Group A water suppliers that received requests for information are included in Appendix E.

In an effort to assess the municipal inchoate water rights in WRIA 45, the WWPU is attempting to obtain annual water-use data and the number of current connections for all of the Group A water suppliers and water right data for those systems. This request was included in the questionnaire that was sent to the purveyors. As this information is received from municipal purveyors, inchoate water rights associated with municipal systems in WRIA 45 can be estimated. This assessment will help indicate the amount of permitted, municipal water available for future growth and instream flow strategies in the watershed. Additional funding will be required in order to process this information.

At this time, the WWPU has received eight completed questionnaires and has been contacted by several other purveyors. Both the cities of Leavenworth and Cashmere are active WWPU members and have participated throughout the process. The data received to date are summarized in Table 8-1 and will be assessed as part of the water reservation accounting project that has been recently funded. The reservation accounting project is one of several actions that will aid in implementation of the instream flow rule.

9.0 PHASE IV REQUIREMENTS

The following list provides the sections of Chapter 90.82 RCW that identify the specific requirements related to Phase IV Implementation. These requirements are addressed in this Implementation Plan and the pertinent sections are referenced.

- RCW 90.82.043[1] Within one year of accepting Phase IV funding, "the planning unit must complete a detailed implementation plan. Submittal of a detailed implementation plan to the department [of Ecology] is a condition of receiving grants for the second and all subsequent years of the phase four grant."
    - This Implementation Plan fulfills this requirement.
- RCW 90.82.043[2] "Each implementation plan must contain strategies to provide sufficient water for: (a) Production agriculture; (b) commercial, industrial, and residential use; and, (c) instream flows."
    - This requirement is addressed in Section 8.1 of this Implementation Plan.
- RCW 90.82.043[2] "Each implementation plan must contain timelines to achieve these strategies and interim milestones to measure progress."
    - This requirement is addressed in Section 6.3 of this Implementation Plan.
- RCW 90.82.043[3] "The implementation plan must 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."
    - This requirement is addressed in Sections 1.2.4, 6.6 and 7.3 of this Implementation Plan.
- RCW 90.82.043[4] "In developing the implementation plan, the planning unit must consult with other entities planning in the watershed management area and identify and seek to eliminate any activities or policies that are duplicative or inconsistent."
    - This requirement is addressed in Sections 6.4 and 6.6 of this Implementation Plan.
- RCW 90.82.048[1] "The timelines and interim milestones in a detailed implementation plan …must address the planned future use of existing water rights for municipal water supply purposes, as defined in RCW 90.03.105, that are inchoate, including how these rights will be used to meet the projected future needs identified in the watershed plan, and how the use of these rights will be addressed when implementing instream flow strategies identified in the watershed plan."
    - This requirement is addressed in Sections 8.1 and 8.2 of this Implementation Plan.
- RCW 90.82.048[2] "The watershed planning unit or other authorized lead agency shall 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 to be included in the detailed implementation plan."
    - This requirement is addressed in Section 8.2 of this Implementation Plan.

10.0 REFERENCES

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TABLES

Table 3-1 is on page 12 of the text.

TABLE 3-2

Ranked and Completed Actions - Water Quantity/Instream Flow/Growth and Land Use

Tier	Total Score	Action Name	Brief Description of Action	Responsible Entity	Status
Completed or in Process Actions					
--	--	WRMS-1	The State Department of Ecology adopt, in rule, the new water resource management strategy for WRIA 45, including the management flows (revised instream flows) at specified control points, the water reserve, and maximum allocations.	Ecology	Completed as of December 2007
--	--	ChumQUANT-4	Ecology close the Chumstick Sub-watershed for an interim period of three years while data are collected and alternatives are assessed.	--	Complete Done in instream flow rule and ongoing Forum process
--	--	WRMS-2	The Planning Unit or future implementing body in WRIA 45 be involved with Ecology, in any scoping, study planning, study implementation, alternatives analysis, negotiations or rule development if Ecology undertakes instream flow or related water management studies or rulemaking in the watershed.	Ecology, WWPU	No longer relevant; rule codified.
--	--	WRMS-3	The WWPU with Chelan County taking the lead role will participate in the development and implementation of an adaptive management process to support this water resource management strategy.	Chelan County, WWPU	In process, discuss in text
--	--	PeshastinQUANT-1	Evaluate passage requirements for fish immediately below the Peshastin Irrigation District diversion (addressing bypass reach/piping).	?	In process

Tier	Total Score	Action Name	Brief Description of Action	Responsible Entity	Status
--	--	ChumQUANT-1	Convene a Chumstick Water Forum to guide data collection, oversee the proposed water management strategy, and help develop mitigation measures.	Chelan County with support from Ecology	Funded and In Process
--	--	ChumQUANT-8	Evaluate alternatives to improve fish passage at the North Road culvert, and further pursue replacement of culverts upstream of North Road on Chumstick Creek.	Chelan County	See Habitat Section for project ranking. Funding in process.
--	--	MissionQUANT-1	Convene a Mission Creek Forum to assess options to provide water for future growth through the purchase, lease or transfer of existing, valid water rights or from storage (storage opportunities within Mission Sub-watershed or through the Peshastin and/or Icicle Irrigation districts).	Chelan County, with participation from Ecology	Funded and ongoing
--	--	MissionQUANT-2	Evaluate alternatives that could increase available water for instream and out-of-stream uses.	--	Ongoing
Tier 1 Actions					
1	36	GLU-3	Ensure that water availability is considered in UGA and LAMIRD (Local Area Managed Intense Rural Development) boundary decisions for existing and new UGAs.	Cashmere, Leavenworth, Wenatchee, CCNRD	Ranked
1	35	WRMS-4	Continue Gaging throughout the watershed to support the new instream flow rule.	Ecology, USGS	Ranked
1	35	QUANT-8, QUANT-9, ChumQUANT-5, MissionQUANT-3	Track Water Availability and Use. Develop and administer reservation accounting system and verify per household water use factors.	CCNRD; Ecology, Chelan County	Ranked. Mission QUANT-3 done in instream flow rule and forum process. In Process. Funding secured to develop reservation accounting and metering plan. Grant

Tier	Total Score	Action Name	Brief Description of Action	Responsible Entity	Status
					timeline 2-08 thru 6-09
1	35	GLU-1a and GLU-2	Chelan County Natural Resource Department (CCNRD) will provide technical input regarding the reservation and eligible uses into the decision making process for consideration by city and county land use decision makers. As part of Chelan County's zone change process, water supply and water resource information is available for use from CCNRD.	CCNRD	Ranked
1	34	MissionQUANT-4	Evaluate alternatives that could increase available water for instream and out-of-stream uses.	Water Quantity/Instream Flow/Storage Subcommittee	Ranked, in process. Funded through Ecology grant for Mission and Chumstick Water Forum. Grant timeline 4-08 thru 6-09
1	33	ChumQUANT-10	The Planning Unit and the Chumstick Forum (with Chelan County as lead) will evaluate alternatives that could increase available water for instream and out-of-stream uses.	Water Quantity/Instream Flow/Storage Subcommittee	Ranked, in process. Funded through Ecology grant for Mission and Chumstick Water Forum. Grant timeline 4-08 thru 6-09
1	32	QUANT-18 and ChumQUANT-11	Encourage the County to provide information and education about water conservation options and fire planning; including: outdoor watering, timing, types of native vegetation that require low water use, lawn size, low flow fixtures, etc. to the new land user.	Chelan County	Ranked

Tier	Total Score	Action Name	Brief Description of Action	Responsible Entity	Status
1	32	PeshastinQUANT-3	Evaluate alternatives that could increase available water for instream and out-of-stream uses.	Water Quantity/Instream Flow/Storage Subcommittee	Ranked
1	32	ChumQUANT-2	Chumstick Water Forum to assist in developing a data collection plan to monitor surface water flows (specify location) and develop management flows.	Chumstick Water Forum	Ranked, in process. Funded through Ecology grant for Mission and Chumstick Water Forum. Grant timeline 4-08 thru 6-09
1	32	ChumQUANT-3	Chumstick Water Forum, with assistance from Chelan County and Ecology, to conduct groundwater monitoring to understand hydraulic continuity and overall impact of exempt wells on groundwater levels and streamflows.	Chumstick Water Forum with assistance from Chelan County and Ecology	Ranked, In Process Grant timeline 2-08 thru 6-09
1	32	ChumQUANT-6	A cumulative impact analysis of permit exempt use and uses associated with permits and claims approved since 1983 will be initiated by Ecology as authorized under the 1983 flow rule.	?	Ranked. In process. Grant timeline 2-08 thru 6-09
1	32	ChumQUANT-7	Chumstick Forum, Chelan County and Ecology to re-evaluate a proposed strategy for the Chumstick in three years after rule adoption, when new monitoring data have been collected and assessed and cumulative impact analysis is complete.	?	Ranked. In process. Grant timeline 4-08 thru 6-09
Tier 2 Actions					
2	31	QUANT-13	Provide public education as to the roles, responsibilities and regulations pertinent to exempt wells, and encourage the proper entities to enforce/implement (CDHD, DOH,	CDHD, DOH, Ecology, County	Ranked

Tier	Total Score	Action Name	Brief Description of Action	Responsible Entity	Status
			Ecology, County).		
2	31	QUANT-15 (includes 15a - 15f)	Chelan County and cities should develop policies that can be used to ensure efficient use of water in the event of a land division or new development.	Chelan County, cities, other water purveyors, also CDHD	Ranked
2	31	QUANT-16b	Encourage funding to line canals or implement other delivery system improvements, where appropriate.	Chelan County, cities, water purveyors; Chelan County, Irrigation Districts, Canal Companies, other Agriculture. Assistance by Ecology; Chelan County, Irrigation Districts, Canal Companies, other Agriculture, cities, PUD. Ecology, others	Ranked
2	31	IcicleQUANT-1	Evaluate alternatives that could increase available water for instream and out-of-stream uses.	Water Quantity/Instream Flow/Storage Subcommittee	Ranked
2	30	NSTQUANT-3	Chelan County and Ecology to provide public information regarding water limitations in Northside Tributaries (Fact Sheets).	Chelan County, Ecology	Ranked
2	29	QUANT-7	Investigate water rights for purchase or lease in WRIA 45	Chelan County, funding Entities could include: BPA, WWT, WRC, BOR, NPCC, Ecology, others	Ranked

Tier	Total Score	Action Name	Brief Description of Action	Responsible Entity	Status
2	29	PeshastinQUANT-4	Evaluate and institute programs to increase instream flows through water acquisitions, leases, and transfers.	Chelan County, funding Entities could include: BPA, WWT, WRC, BOR, NPCC, Ecology, others	Ranked
2	29	ChumQUANT-12	Investigate water rights for purchase or lease as part of the mitigation and enhancement strategy for Chumstick Sub-watershed.	Chelan County, funding Entities could include: BPA, WWT, WRC, BOR, NPCC, Ecology, others	Ranked
2	29	MissionQUANT-8	Investigate water rights for purchase or lease as part of the mitigation and enhancement strategy for Mission Sub-watershed.	Chelan County, funding Entities could include: BPA, WWT, WRC, BOR, NPCC, Ecology, others	Ranked
2	29	QUANT-10, ChumQUANT-9, MissionQUANT-6	The Planning Unit recommends metering be required for all new uses eligible under the reserve.	WWPU	Ranked. Funded to develop metering plan by June 30, 2009.
2	29	QUANT-16d and ChumQUANT-11	Convene a forum to investigate conservation strategies and how they could be implemented by irrigation districts, ditches and other private companies.	Chelan County, cities, water purveyors; Chelan County, Irrigation Districts, Canal Companies, other Agriculture. Assistance by Ecology; Chelan County, Irrigation Districts, Canal Companies, other Agriculture, cities, PUD. Ecology, others	Ranked

Tier	Total Score	Action Name	Brief Description of Action	Responsible Entity	Status
2	29	QUANT-21	Evaluate the consumptive portion of reserved water uses and determine if recharge credit should be included in the accounting of the reservation.	?	Ranked
Tier 3 Actions					
3	28	QUANT-6	Develop an administrative structure for a water bank for WRIA 45.	WWPU, Chelan County	Ranked
3	28	QUANT-14	Credit a water service provider for abandoned and/or decommissioned exempt wells.	Ecology, Chelan County, Water Systems	Ranked
3	28	QUANT-16a	Encourage cities and other water providers to implement a rate and fee structure that promotes conservation.	Chelan County, cities, water purveyors; Chelan County, Irrigation Districts, Canal Companies, other Agriculture. Assistance by Ecology; Chelan County, Irrigation Districts, Canal Companies, other Agriculture, cities, PUD. Ecology, others	Ranked
3	27	QUANT-20b	Study groundwater in specific areas of the watershed (eg., Mission Creek, Lower Chumstick/Eagle Creek area, Monitor area).	CCNRD, other entities	Ranked. In Process
3	27	GLU-1b	Water resource and supply related data for the watershed will be maintained in a database by CCNRD. CCNRD would update this information as a larger population is served in the future and ensure the information is available in a format that is easily understood by the public.	CCNRD	Ranked

Tier	Total Score	Action Name	Brief Description of Action	Responsible Entity	Status
3	26	QUANT-17	Encourage on-farm efficiencies and implementation of Best Management Practices (BMPs) to encourage water conservation.	Chelan County	Ranked
3	26	NSTQUANT-5	Alternatives Analysis for Northside Tributaries to include options such as use of out-of-basin water, pumping from lower Wenatchee reserve, PUD hookup, deep groundwater, storage, and water right purchase.	?	Ranked
Tier 4 Actions					
4	25	QUANT-11 and QUANT-20c	Undertake hydrogeologic studies to assess the influence of groundwater withdrawals on surface water. Study groundwater-surface water interaction in the watershed.	CCNRD, other entities	Ranked, In process for Mission and Chumstick
4	25	MissionQUANT-7	Evaluate out-of-kind mitigation and enhancement projects over time, if appropriate. Identify habitat and water quality improvements to mitigate additional reserve water.	?	Ranked
4	21	QUANT-12	Funding should be requested to survey (using GPS) private wells.	CDHD, Chelan County with Ecology	Ranked
4	23	QUANT-20a	Define the consumptive portion of the water use in the water budgets.	CCNRD, other entities	Ranked
4	23	NSTQUANT-4	Chelan County and Ecology to work with local community to design and implement a groundwater monitoring program in existing wells to determine trends in groundwater levels.	Chelan County, Ecology	Ranked
4	18	NSTQUANT-1	Future water supply availability should be discussed with Chelan County Public Utility District (PUD) to determine whether they have the capacity and infrastructure to provide backup supply.	Chelan County PUD, others?	Ranked

Tier	Total Score	Action Name	Brief Description of Action	Responsible Entity	Status
4	18	NSTQUANT-2	PUD and Chelan County to consider pumping from Wenatchee Valley and a potential PUD hookup in Nahahum.	PUD, Chelan County	Ranked
4	16	QUANT-16c	Encourage the use of reclaimed water (tertiary treatment) for outdoor irrigation, industrial, and commercial use.	Chelan County, cities, water purveyors; Chelan County, Irrigation Districts, Canal Companies, other Agriculture. Assistance by Ecology; Chelan County, Irrigation Districts, Canal Companies, other Agriculture, cities, PUD. Ecology, others	Ranked
Ranked as part of another action or deferred to another committee					
--	--	QUANT-9a	Track new exempt wells through the building permit process and will coordinate with the CDHD. A joint city/county process will need to be implemented to assist the county in tracking any building permits requiring exempt wells that are issued by other cities (if applicable) within the watershed.	CCNRD, CDHD, and possibly cities	Ranked as part of QUANT-9
--	--	QUANT-9b	New rights that are granted by Ecology for domestic water uses will be tracked by CCNRD. Determine the mechanism for tracking the new permitted uses that will debit the reserve.	CCNRD, Ecology	Ranked as part of QUANT-9
--	--	QUANT-9c	Long-term funding for tracking is required.	CCNRD and potential funding agencies	Ranked as part of QUANT-9

Tier	Total Score	Action Name	Brief Description of Action	Responsible Entity	Status
--	--	QUANT-16	Research how different entities in the watershed are implementing conservation measures and acknowledge current efforts. Encourage additional conservation measures where needed. Encourage incentive based solutions.	Chelan County, cities, water purveyors; Chelan County, Irrigation Districts, Canal Companies, other Agriculture. Assistance by Ecology; Chelan County, Irrigation Districts, Canal Companies, other Agriculture, cities, PUD. Ecology, others	Ranked as part of QUANT-16a through 16d
--	--	QUANT-19	Consider funding storage options from the Storage Assessment.	?	Ranked as part of PeshastinQUANT-3, MissionQUANT-4, ChumQUANT-10, IcicleQUANT-1
--	--	QUANT-20	Administer studies on water resources throughout the watershed, especially in areas where inadequate data exist to make decisions regarding future water use (eg., Chumstick, Northside Tributaries).	CCNRD, other entities	Ranked as part of QUANT-20a and 20b
--	--	PeshastinQUANT-2	Consider other instream projects that improve habitat.	?	Ranked with habitat actions
--	--	MissionQUANT-5	Consider storage opportunities within Mission Sub-watershed.	--	See QUANT-19
--	--	GLU-1	Establish a resource base for decision-makers to use to consider technical water resource information when making land use change decisions and when considering land use permit applications.	CCNRD	Ranked as GLU-1a, GLU-2 and GLU-1b

Tier	Total Score	Action Name	Brief Description of Action	Responsible Entity	Status
--	--	GLU-6	The protection measures and strategies identified in the 2514 Watershed Plan should be considered by local governments as non-regulatory mechanisms to protect critical areas watershed wide.	Local Governments	Not ranked. Deferred to Habitat Subcommittee. See Habitat work schedule

TABLE 3-3

Recommendations - Water Quantity/Instream Flow/Growth and Land Use

Action Name	Brief Description of Action	Recommendation Intended for	Status
QUANT-1	Develop recommendations for Ecology regarding the processing of new water right applications and applications for water right changes and transfers in WRIA 45.	WWPU and Chelan Water Conservancy Board	WWPU Recommendation Table
QUANT-2	Request additional Ecology staff time from the legislature to process WRIA 45 water rights.	Ecology	WWPU Recommendation Table
QUANT-3	Ecology should enforce existing regulations and policies concerning water rights and use.	Ecology	WWPU Recommendation Table
QUANT-4	Provide incentives for conserving water rather than using it to avoid losing it. Encourage efficiencies through current water law using tools such as water trusts and/or other innovative techniques.	Chelan County, Irrigation Districts, Canal Companies, other Agriculture. Assistance by Ecology	WWPU Recommendation Table Recommendation to implementing entities to explore the trust program
QUANT-5	Consider Ecology's Trust Water Program as an option to temporarily safeguard water rights during times of non-use or reduced use while satisfying the needs of beneficial uses in the watershed. Develop strategies for using trust water to safeguard water that may be used in the future to support a more water-intensive crop type or conversion from agriculture to residential.	Chelan County, Irrigation Districts, Canal Companies, other Agriculture. Assistance by Ecology	WWPU Recommendation Table Recommendation to implementing entities to explore the trust program
GLU-4	Supportive of the goals and intent of the GMA to provide critical area protections, as these are consistent with water quality, quantity and habitat goals of the Wenatchee Watershed Plan and the Watershed Planning Act. The Planning Unit further supports the efforts of local jurisdictions to implement non-regulatory programs that protect critical areas and is interested in exploring potential partnerships in these efforts.	WWPU	Recommendation and Statement of Support to local jurisdictions

Action Name	Brief Description of Action	Recommendation Intended for	Status
GLU-5	Data, protection measures and strategies relating to critical area protections should be documented as part of the watershed planning process. Encourage local jurisdictions to utilize the data, protection measures and strategies identified in the 2514 Wenatchee Watershed Plan in the development and update of critical area protections under GMA.	CCNRD	Recommendation to local jurisdictions

Table 3-4 is on page 15 of the text.

TABLE 3-5

Ranked and Completed Actions - Water Quality

Tier	Total Score	Original Action Number	New, Refined Action Number	Brief Description of Action	Status
Completed or in Process Actions					
--	--	QUAL FC-1	QUAL FC-1a	Make priority list for addressing areas of fecal coliform contamination based on water quality technical report.	Completed (see Completed Actions Table for Priority list)
--	--	QUAL DOpH-2	QUAL DOpH-2	Develop and implement controls through new and existing regulatory programs to reduce phosphorus inputs to surface and groundwaters from other point sources. Conduct associated monitoring and adaptive management.	Regulatory strategy ongoing--to be addressed by small group
--	--	QUAL DOpH-1	QUAL DOpH-1	A regulatory strategy should be developed and implemented with WWTPs and Ecology to institute controls over time through NPDES permits that will reduce phosphorous discharges to surface and ground waters.	Regulatory strategy ongoing--to be addressed by small group
Tier 1 Actions					
1	94	QUAL FC-1	QUAL FC-1b	Identify sources of FC in targeted reaches based on prioritization in 1a and additional testing if needed and work with landowners to mitigate sources.	Ranked
1	94	QUAL FC-8	QUAL FC-8	CDHD and WQTSC develop and implement a grant/loan funding program to replace or repair failing septic systems.	Ranked
1	92	QUAL T-5	QUAL T-5a	Identify and prioritize locations for riparian plantings for shade. Base on LIDAR, Temp modeling and TMDL tech report, FLIR	Ranked
1	91	QUAL FC-1	QUAL FC-1d	Design and implement a monitoring system to assess the affects of BMPs and determine whether TMDL Technical Assessment target reductions for fecal coliform have been achieved.	Ranked

Tier	Total Score	Original Action Number	New, Refined Action Number	Brief Description of Action	Status
1	90	QUAL FC-6	QUAL FC-6	Provide onsite sewage disposal system technical assistance and education programs for homeowners and the industry.	Ranked
1	89	QUAL FC-1	QUAL FC-1c	Identify other opportunities and work with willing landowners to address fecal coliform sources in other areas of the watershed.	Ranked
1	85	QUAL FC-12	QUAL FC-12	Develop and implement a public education and outreach program addressing fecal coliform in the watershed.	Ranked
1	85	QUAL DOpH-3	QUAL DOpH-3c	Identify willing landowners and implement the BMPs identified in DOpH-3a above.	Ranked
Tier 2 Actions					
2	84	QUAL T-8	QUAL T-8	Develop new, or support existing, voluntary programs to increase riparian vegetation where needed or protect existing riparian areas on private lands (focus on areas identified in QUAL T-5a)	Ranked
2	84	QUAL FC-4	QUAL FC-4	Identify where root intrusion is occurring in the sewer system, especially in areas near streams. Repair and upgrade the sewer system in these areas.	Ranked
2	84	QUAL DOpH-3	QUAL DOpH-3a	Design and conduct a study to identify the source of phosphorus in groundwater in the Dryden and Cashmere reaches (as identified in the TMDL technical report) and develop BMPs to address these specific sources.	Ranked
2	83	QUAL FC-23	QUAL FC-23	Work with wastewater purveyors to examine sewer collection systems to identify problems or damage within them that may contribute fecal coliform loading in the watershed.	Ranked
2	82	QUAL DOpH-3	QUAL DOpH-3b	Design and conduct a monitoring study to identify any non-point sources in tributaries that may be contributing to nutrient loads.	Ranked
2	82	QUAL DOpH-5	QUAL DOpH-5b	Design and conduct a study to assess the capacity of soils in the watershed to handle onsite septic systems.	Ranked

Tier	Total Score	Original Action Number	New, Refined Action Number	Brief Description of Action	Status
2	81	QUAL T-12	QUAL T-12 a	The WQTSC will evaluate current temperature monitoring locations and determine whether existing temperature monitoring locations are adequate to continue to monitor temperature for the TMDL	Ranked
2	81	QUAL T-14	QUAL T-14 CHANGE TO T12-b	Consider continuously-recording water temperature monitors should be deployed from July through August to capture the critical conditions.	Ranked
2	79	QUAL DOpH-3	QUAL DOpH-3e	Design and implement a monitoring system to assess the affects of BMPs (as applied in DopH 3a, 3b, 3c, 3d above) and conduct associated adaptive management	Ranked
Tier 3 Actions					
3	78	QUAL DOpH-3	QUAL DOpH-3d	Identify other opportunities and work with willing landowners to address non-point phosphorus sources in other areas of the watershed (to those identified in DOpH-3b)	Ranked
3	77	QUAL T-5	QUAL T-5c	Using list from 5a, implement riparian plantings in targeted areas (use voluntary programs from QUAL T-8)	Ranked
3	75	QUAL T-17	QUAL T-17	Develop and implement an education, outreach, and technical assistance program for the watershed for temperature.	Ranked
3	73	--	QUAL T-14 CHANGE TO T12-c	Effectiveness monitoring associated with BMPs should be conducted to track progress toward shade and water quality targets.	Ranked
3	72	QUAL DOpH-7	QUAL DOpH-7a	Develop and implement a public education and outreach program addressing sources of phosphorus in the watershed.	Ranked
3	69	QUAL DDT-3	QUAL DDT-3a	Conduct a study to evaluate soil transport of DDT-TSS to streams during large rainfall events and determine the potential for additional DDT loading.	Ranked
3	68	QUAL DDT-7	QUAL DDT-7	Develop and implement a public education and outreach program addressing DDT in the watershed.	Ranked

Tier	Total Score	Original Action Number	New, Refined Action Number	Brief Description of Action	Status
3	66	QUAL T-5	QUAL T-5b	Opportunistic upper watershed riparian plantings - increase shade on private land	Ranked
3	65	QUAL T-18a (new)	QUAL T-18a (new)	Identify and prioritize locations that are flow impaired and listed for temperature that could potentially benefit from increased groundwater recharge and increased hyphoreic exchange flows.	Ranked
Tier 4 Actions					
4	63	QUAL FC-10	QUAL FC-10	Obtain funding for, and have the CDHD, with County assistance, implement the development and maintenance of a database for all onsite septic system permits issued in Chelan County, and a GIS database of the onsite septic systems.	Ranked. In progress.
4	63	QUAL DDT-1	QUAL DDT-1b	Apply appropriate BMPs working with landowners identified in 1a.	Ranked
4	63	QUAL DDT-9	QUAL DDT-3b	Based on the results of the study performed in DDT-3a, develop BMPS to be implemented during soil disturbance to prevent DDT transport to surface water.	Ranked
4	58	QUAL DDT-1	QUAL DDT-1c	Design and implement a phased monitoring approach to assess the effectiveness of BMPs and DDT-TSS reduction efforts implemented in DDT-1b.	Ranked
4	58	QUAL DDT-5	QUAL DDT5a	Design and implement a monitoring program to determine whether DDT is present in the Icicle and Peshastin Irrigation canals.	Ranked
4	53	QUAL DDT-1	QUAL DDT-1a	Develop and support a program within the CD to identify willing landowners to address DDT.	Ranked
4	46	QUAL DDT-6	QUAL DDT-5b	If the results of QUAL DDT-5a show DDT presence in sediments in the Icicle or Peshastin Irrigation canals, assess other irrigation systems in areas in the watershed where DDT is known to have been applied and encourage BMPs.	Ranked
4	44	QUAL DDT-4	QUAL DDT-4	Design and implement a groundwater monitoring plan to determine whether DDT is present in groundwater.	Ranked

Tier	Total Score	Original Action Number	New, Refined Action Number	Brief Description of Action	Status
Replaced and Deleted Actions					
--	--	QUAL T-11	QUAL T-11	Actions to improve hyporheic exchange flows and groundwater-surface water recharge should be identified and implemented to improve the current temperature regime and reduce maximum daily instream temperatures.	Replaced with T-18 a, b, c
--	--	QUAL T-4	See T-18a, 18b and 18c.	Use the information in the TMDL technical reports and SIS along with their conclusions, recommendations, and actions for a more holistic approach to restoration, preservation, and enhancement of the watershed for all beneficial uses.	Replaced with new T-18a, b, c
--	--	QUAL FC-2	--	Identify sources of fecal coliform pollution to Chumstick Creek subwatershed, including Van Creek and Upper Eagle Creek, utilizing the FC technical study.	Replaced by FC-1a
--	--	QUAL FC-3	--	Implement and monitor BMPs to meet the Fecal Coliform TMDL Technical Assessment target reductions.	Replaced by FC-1d
--	--	QUAL FC-5	--	Conduct monitoring of on-site wells in areas of fecal coliform exceedences to help identify the source/s.	Replaced by FC-1b
--	--	QUAL FC-13	--	Conduct ongoing community fecal coliform education/awareness campaigns throughout the yea.	Replaced by new FC-12
--	--	QUAL FC-14	QUAL FC-14	Deal with the feral cats and dogs living within the stream corridor. Monitor and remove dead animals within the stream corridor throughout the year.	Replaced by new FC-12
--	--	QUAL FC-17	--	Work with the public and homeowners regarding BMPs to reduce fecal coliform runoff.	Replaced with FC-12. See FC-12 for actual action to rank
--	--	QUAL FC-19	--	Work with landowners regarding fecal coliform runoff.	Replace with FC-12. see FC-12 for actual action to rank

Tier	Total Score	Original Action Number	New, Refined Action Number	Brief Description of Action	Status
--	--	QUAL FC-21	--	Work with appropriate entities to reduce fecal coliform runoff from impervious surfaces.	Replaced with FC-12 and duplication of FC-20 and FC-22.
--	--	QUAL FC-24	--	Funding should be sought to implement actions and ongoing monitoring.	Replaced by FC-1e
--	--	QUAL DDT-2	--	A phased monitoring approach should be conducted to assess the effectiveness of BMPs and DDT-TSS reduction efforts.	Replaced by DDT-1c
--	--	QUAL DDT-8	--	The Department of Ecology should provide funding assistance to implement actions and ongoing monitoring. Other funding sources should also be identified.	Replaced by DDT-1d
--	--	QUAL DOpH-4	--	Assessments of groundwater contributions and sources of nutrients (phosphorous) should be conducted. Actions should be implemented based on the conclusions and recommendations of these studies to reduce inputs of phosphorous from these areas.	Replaced by DOpH-3b
--	--	QUAL DOpH-8	--	Work with the County, cities, businesses, and the WA State Department of Transportation to identify and reduce nutrient inputs from these practices. Conduct associated monitoring and adaptive management.	Deleted and replaced by DOpH-7a
--	--	QUAL DOpH-9	QUAL DOpH-9a	Work with developers to implement these actions. Include appropriate language in county and city comprehensive plans, growth management, and critical area ordinances. Conduct associated monitoring and adaptive management.	Deleted and replaced by DOpH-7a
--	--	QUAL DOpH-13	--	Work with irrigation districts to reduce nutrient inputs. Encourage lining of earthen canals. Work with irrigation districts to implement BMPs and adaptive management.	Deleted and replaced by DOpH-7a

Tier	Total Score	Original Action Number	New, Refined Action Number	Brief Description of Action	Status
--	--	QUAL DOpH-14	--	Work with the agricultural community to encourage practices that will reduce nutrient inputs to ground and surface waters while enhancing crop quality and yield. Conduct associated monitoring and adaptive management.	Deleted and replaced by DOpH-7a
--	--	QUAL DOpH-15	--	Funding for these projects should be sought through Department of Ecology Centennial and 319 grants and loans. Identify and access other funding sources through the Planning Unit and other entities.	Deleted and replaced by DOpH-3f
--	--	QUAL DOpH-16	--	Encourage implementation of wetlands, filter strips, riparian vegetation, bio-swales, drainage basins, pervious surfaces, etc. in development practices. Conduct associated monitoring and adaptive management.	Deleted and replaced by DOpH-7a
--	--	QUAL DOpH-17	--	Identify and investigate any non point sources in tributaries that may be contributing to nutrient loads.	Deleted and replaced by DOpH-3c
Placeholder					
--	--	QUAL FC-26	QUAL FC-26	Placeholder for addressing water quality impacts of increased septic systems resulting from growth.	Placeholder. Will be addressed in the next year of implementation

TABLE 3-6

Recommendations - Water Quality

Tier	Total Score	Original Action Number	New, Refined Action Number	Brief Description of Action	Recommendation Intended for	Implementation Notes and Follow-up
--	--	QUAL T-1	QUAL T-1	CCCD should continue to oversee and implement recommendations in the Wenatchee River Watershed Action Plan, ensure other entities are also implementing voluntary actions in the Watershed Action Plan, and encourage continued funding of these efforts.	CCD	--
--	--	QUAL T-2	QUAL T-2	Ecology should continue to work with the local watershed planning group through both implementation of the current TMDL, and on future TMDLs if further listings arise.	Ecology	--
--	--	QUAL T-3	QUAL T-3	Ecology should continue to work with the WWPU to assist in the identification of opportunities to fund future projects	Ecology	--
--	--	QUAL T-6	QUAL T-6	Encourage the USFS to increase shade in the upper watershed.	Water Quality Technical Subcommittee, USFS	--
--	--	QUAL T- 7	QUAL T- 7	Encourage DNR to increase shade on state and privately owned forest land in the upper watershed.	Water Quality Technical Subcommittee, DNR	--
--	--	QUAL T-9	QUAL T-9a	Encourage projects that have the potential to increase and protect surface and groundwater flows.	Water Quantity Subcommittee	--

Tier	Total Score	Original Action Number	New, Refined Action Number	Brief Description of Action	Recommendation Intended for	Implementation Notes and Follow-up
--	--	QUAL T-9	QUAL T-9b	Pursue voluntary programs to acquire water rights	Water Quantity Subcommittee	--
--	--	QUAL T-9	QUAL T-9c	Recommend that the evaluation of impacts of proposed storage projects include temperature effects.	Water Quantity Subcommittee	--
--	--	QUAL T-10	QUAL T-10	Encourage adaptive management activities to control potential channel widening processes.	Water Quality Technical Subcommittee	--
--	--	QUAL T-12	QUAL T-12d	Recommend that Ecology continue existing temperature monitoring.	Water Quality Technical Subcommittee, Ecology	--
--	--	QUAL T-12	QUAL T-12e	Expand the current temperature monitoring program if necessary such that it is consistent with flow monitoring actions recommended in the Wenatchee Watershed Plan.	Ecology	Is the temperature data collected at the streamflow gages able to be used for ongoing temperature data collection for the TMDL? Is it being used, does it meet their standards. Also, need to check where current temperature monitoring is occurring. Ecology to implement.
--	--	QUAL T-13	QUAL T-13	Recommend that the WQTS work with the WWPU in the development of proposed water storage, irrigation, habitat, and development projects to provide input regarding shade, riparian vegetation, and engineering to reduce water temperatures.	Water Quality Technical Subcommittee	--

Tier	Total Score	Original Action Number	New, Refined Action Number	Brief Description of Action	Recommendation Intended for	Implementation Notes and Follow-up
--	--	QUAL T-15	QUAL T-15	Funding assistance should be sought from Ecology through its grants and loans programs to implement actions and ongoing monitoring.	Water Quality Technical Subcommittee	--
--	--	QUAL T-16	QUAL T-16a	Manage vegetation in their right of ways, and runoff from paved surface areas near the water bodies covered in this TMDL.	DOT	--
--	--	QUAL T-16	QUAL T-16b	Include riparian management in collaboration with the TMDL in road right-of-ways.	County, USFS	See also T-6
--	--	QUAL T-18b (new)	QUAL T-18b (new)	Coordinate with Water Quantity/ISF and Habitat Subcommittees to implement opportunistic flow improvements to address temperature.	Water Quality Technical Subcommittee	deleted "upper watershed"
--	--	QUAL T-18c (new)	QUAL T-18c (new)	Coordinate with the Water Quantity/ISF and Habitat Subcommittees to implement prioritized projects.	Water Quality Technical Subcommittee	--
--	--	QUAL FC-1	QUAL FC-1e	Seek funding through Department of Ecology grants and loans programs and other sources to implement actions and ongoing monitoring.	Water Quality Technical Subcommittee	Replaces FC-24
--	--	QUAL FC-7	QUAL FC-7	CDHD continue to permit onsite sewage systems per Washington Administrative Code (WAC).	CDHD	Does the CDHD do all of this now?? If so, leave as a recommendation? Yes, they are currently doing this, but I wonder if we leave it in if it will allow them a means to try and get grant funding to help .--Mike R.

Tier	Total Score	Original Action Number	New, Refined Action Number	Brief Description of Action	Recommendation Intended for	Implementation Notes and Follow-up
--	--	QUAL FC-9	QUAL FC-9	CDHD explore obtaining legal authority from Chelan County to operate a pumper notification program with area septage pumpers as part of its onsite septic system operation and maintenance program.	CDHD	--
--	--	QUAL FC-11	QUAL FC-11	CCCD continue to oversee and implement recommendations in the Wenatchee River Watershed Action Plan, ensure other entities are also implementing voluntary actions in the Watershed Action Plan, and encourage continued funding of these efforts.	CCD	--
--	--	QUAL FC-15	QUAL FC-15	Enforce regulations on illegal dumping of wastes either to storm drains or directly to surface waters.	Ecology	--
--	--	QUAL FC-16	QUAL FC-16	WQTS encourage CDHD, Chelan County, cities, DOH, and utilities to continue ongoing review and upgrading of ordinances regarding developments and sewage systems technologies.	Water Quantity Subcommittee, CDHD, Chelan County, cities, DOH, utilities	--
--	--	QUAL FC-18	QUAL FC-18	Recommendation to irrigation districts to implement and enforce policies to prevent illegal fecal coliform discharges to irrigation canals.	irrigation districts	--
--	--	QUAL FC-20	QUAL FC-20	Chelan County and municipalities to develop and implement stormwater policies, standards, and guidelines in comprehensive plans, critical areas ordinances, growth management plans, and other appropriate plans.	Chelan County and municipalities	this may already be done……perhaps Mary Jo could help - Mike R.
--	--	QUAL FC-22	QUAL FC-22	Protect streams from fecal coliform runoff pollution on forested lands.	USFS, WA DNR	Private landowner component of QUAL FC-22 is covered in FC-12

Tier	Total Score	Original Action Number	New, Refined Action Number	Brief Description of Action	Recommendation Intended for	Implementation Notes and Follow-up
--	--	QUAL FC-25	QUAL FC-25	Recommend that wastewater utilities connect unconnected homes in the service area.	wastewater utilities	reworded
--	--	QUAL DDT-1	QUAL DDT-1d	Recommend that funding is sought through Department of Ecology grants and loans programs and other sources to implement actions and ongoing monitoring described in DDT-1a through DDT-1c.	Water Quality Technical Subcommittee	--
--	--	QUAL DDT-9	QUAL DDT-3c	Recommend that Chelan County and other municipalities include implementation of the BMPs developed in DDT-3b in Chelan County and municipal development ordinances.	Chelan County and associated municipalities	--
--	--	QUAL DDT-10	QUAL DDT-10	Recommend that an assessment be done of stormwater control systems in the watershed to identify mechanisms of sediment transport relevant to DDT.	CCD	--
--	--	QUAL DOpH-3	QUAL DOpH-3f	Recommend that funding for these projects D159+D98be sought through Department of Ecology Centennial and 319 grants and loans. Identify and access other funding sources through the Planning Unit and other entities.	Water Quality Technical Subcommittee	--
--	--	QUAL DOpH-5	QUAL DOpH-5a	Address failing septic systems through actions identified in the Wenatchee Watershed Fecal Coliform TMDL.	CDHD, CCD	--
--	--	QUAL DOpH-6	QUAL DOpH-6	Work with Chelan County and municipalities to reduce storm water inputs, utilizing the Eastern Washington Storm water Manual or equivalent. Include language in comprehensive plans and ordinances. Work with developers.	Chelan County, municipalities, developers	--
--	--	QUAL DOpH-7	QUAL DOpH-7b	The County and cities should consider implementing a ban on the sale of high phosphate detergents.	Chelan County	--

Tier	Total Score	Original Action Number	New, Refined Action Number	Brief Description of Action	Recommendation Intended for	Implementation Notes and Follow-up
--	--	QUAL DOpH-9	QUAL DOpH-9b	Recommend that Chelan County and associated cities include appropriate language addressing construction practices in county and city comprehensive plans, growth management, and critical area ordinances.	Chelan County and cities	--
--	--	QUAL DOpH-10	QUAL DOpH-10a	Recommend that Chelan PUD conduct an assessment of the possible back-water effect that may be created by operation of the Rock Island dam.	Chelan PUD	--
--	--	QUAL DOpH-10	QUAL DOpH-10b	Recommend that the Chelan PUD consider actions from the report's conclusions and recommendations (from DOpH-10a) to improve water quality.	Chelan PUD	--
--	--	QUAL DOpH-11	QUAL DOpH-11	Recommend to the WQTSC that the actions identified in the Wenatchee River Basin Temperature and Fecal Coliform TMDLs be implemented.	Water Quality Technical Subcommittee	--
--	--	QUAL DOpH-12	QUAL DOpH-12	Develop reserve load capacities for Biochemical Oxygen Demand (BOD) and nutrients for the Upper Wenatchee River and Icicle Creek	Ecology	Point source strategy for meeting the reserve load capacity is still in development - defer discussion

Table 3-7 is on page 19 of the text.

TABLE 3-8

Ranked and Completed Actions – Habitat

BBT	SST	Action ID	Brief Description of Action	Status
Completed or in Process Actions				
--	--	LW-1150	Monitor, evaluate and adaptively manage Channel Connectivity and Off-Channel Habitat at Gagnon	Completed 2007
--	--	NC-1840	Evaluation of sediment budget, appropriate channel migration and sequence of actions Primarily below White Pine in Nason Creek Assessment Unit.	Completed by USBR 2007
--	--	NC-1882	Channel Connectivity, Off-Channel Habitat and Channel Reconfiguration Completed 2007 at Nason Oxbow CMZ N2/3 (check #).	Completed 2007
--	--	WhR-2011	Monitor, Evaluate and adaptively manage Channel Connectivity and Off-Channel Habitat on White River Oxbow above Sears Crk. NF land.	Completed 2005
--	--	WhR-2112	Monitor, Evaluate and adaptively manage Channel Connectivity and Off-Channel Habitat at Upper Canyon Roads above Sears Creek	Completed 2005
--	--	WhR-2113	Monitor, Evaluate and adaptively manage White River bank stabilization on NF land above Sears Creek.	Completed 2005
--	--	CR-1780	Evaluate Road Drainage System Improvements and Erosion Control Structures on Lower Watershed and Tributaries of Chiwawa River.	Assessment completed above Chikamin Creek.
--	--	CR-1811	Implement Culvert Improvements or Upgrades and Culvert Removal on Clear Creek #1, #2 & #3.	Completed 2007
--	--	CR-1812	Implement Culvert Improvements or Upgrades and Culvert Removal on Alder Creek #1 & #2.	Completed 2007
--	--	NST-1201	Four culverts replaced on NF lands on Derby Creek in 2006 (Fischer Fire Recovery).	Four culverts replaced on NF lands on Derby Creek in 2006 (Fischer Fire Recovery).
--	--	LW-1161	Implement Channel Connectivity and Off-Channel Habitat at CMZ 11	Funded for construction in 2008
--	--	LW-1162	Implement Channel Connectivity and Off-Channel Habitat at CMZ 12/13	Funded for construction in 2008
--	--	LW-1163	Design, seek funding and implement Channel Connectivity and Off-Channel Habitat at CMZ 2 (Goodfellow)	Seeking funding

BBT	SST	Action ID	Brief Description of Action	Status
--	--	LW-1181	Monitor, evaluate and adaptively manage planting at Leavenworth Golf Course	2,380 linear feet completed (Golf Course)
--	--	LW-1182	Planting scheduled for 2008 at Irwin Riparian (across from Blackbird Is.)	Funded for implementation in 2008
--	--	CC-1480	Conduct a surface/ground water interaction study throughout Chumstick Creek assessment unit.	Funded Jan. 2008 - June 2009
--	--	LW-1164	Alternatives Analysis of Channel Connectivity and Off-Channel Habitat at CMZ 17 (confluence of Peshastin Crk)	Funded for Alternatives Analysis for 2008
--	--	LW-1165	Alternatives Analysis of Channel Connectivity and Off-Channel Habitat at CMZ 20 (confluence of Icicle Crk)	Funded for Alternatives Analysis for 2008
--	--	LW-1163	Seek funding and implement Streambank Protection, Upland Protection and Wetland Protection at CMZ 2 (Goodfellow)	Design completed? Seeking funding
--	--	CC-1551	13 Culvert Improvements or Upgrades scheduled for 2009 on mainstem Chumstick for fish passage.	Funding secured for 2009 construction
--	--	IC-1641	Implemented Riparian Planting and Sediment Control in 2007 in Icicle Creek Assessment Unit; monitor.	740 linear feet planted in 2007
--	--	NC-1881	Develop process for implementing Channel Connectivity, Off-Channel Habitat and Channel Reconfiguration projects with BNSF from Mouth of Nason Creek to White Pine Creek.	Funded, project underway
--	--	NC-1901	Monitor Culvert Improvements or Upgrades Culvert Removal at Mill Creek - Westbound HW2.	Completed in 2006
Biological Benefit Tier 1, Social Benefit Tier 1				
1	1	CC-1560	Culvert Improvements or Upgrades scheduled for 2010 on North Road, Lower Chumstick for fish passage.	funding being secured by CC Public Works
1	1	CC-1490	Education program to conserve water use through domestic and agri-business practices throughout Chumstick Creek assessment unit.	--
1	1	WhR-1980	Acquire conservation easements and pursue other innovative measures for Streambank Protection, Upland Protection and Wetland Protection on Lower mainstem White River.	Check with CDLT on status

BBT	SST	Action ID	Brief Description of Action	Status
Biological Benefit Tier 1, Social Benefit Tier 2				
1	2	WhR-1990	Evaluate specific need and develop schedule for planting from Mouth of White River to Sears Ck. Implement approximately 500 feet per year as appropriate	--
1	2	NC-1850	Ongoing, acquire Streambank Protection, Upland Protection and Wetland Protection as available or based on USBR Assessment from Mouth of Nason Creek to White Pine Creek.	--
1	2	LW-1100	Assess feasibility of reconnection side channels under Highway 2 from Sleepy Hollow to Monitor (CMZ 6, highway)	Funded for Alternatives Analysis for 2008
1	2	LW-1110	Assess feasibility/Design of Channel Connectivity and Off-Channel Habitat above Sleepy Hollow (side channel spring river Left)	--
1	2	PC-1360	Assess irrigation improvement practices in Tandy Ditch and PID (efficiency) incorporate existing irrigation district facility improvement plans	--
1	2	PC-1361	Convert 9,900 feet of open canal to pipe in Peshastin Irrigation District, lower part of canal	Funding secured
1	2	NC-1870	Evaluate specific need for Channel Reconfiguration and develop schedule based on USBR Assessment for Mouth of Nason Creek to Whitepine Creek.	--
1	2	NC-1880	Implement and evaluate natural and/or historic lower Nason side/off channel habitats from Mouth to White Pine Creek.	--
Biological Benefit Tier 1, Social Benefit Tier 3				
1	3	LW-1120	Evaluated Channel Connectivity and Off-Channel Habitat near Monitor (CMZ?, Pioneer diversion)	--
1	3	LW-1130	Evaluate Channel Connectivity and Off-Channel Habitat at Cashmere (Barrow pits)	--
1	3	LW-1140	Monitor, evaluate and adaptively manage Channel Connectivity and Off-Channel Habitat Below Dryden Dam (CMZ?)	Completed 2006/7 by CCPUD
1	3	LW-1160	Implement high priority CMZ projects	--
1	3	PC-1390	USBR conducting fluvial assessment to identify opportunities from Peshastin Creek Mouth to Ingalls (20 - 30 structures). Evaluate and prioritize results.	USBR assessment 2008/09
1	3	PC-1450	USBR conducting fluvial assessment to identify opportunities for channel reconfiguration structures at and below PID (10 structures). Evaluate and prioritize results.	USBR assessment 2008/09

BBT	SST	Action ID	Brief Description of Action	Status
1	3	PC-1411	USBR conducting fluvial assessment to identify opportunities from Ingalls Creek to RM 1 on Peshastin Creek. Evaluate and prioritize results	USBR assessment 2008/09
1	3	UW and ChiwC-1720	USBR fluvial assessment to identify opportunities for log structures or log jams on Upper mainstem Wenatchee (Lake to Tumwater) and Chiwaukum Creek. Evaluate benefit and feasibility and prioritize results.	--
1	3	CR-1800	Implement Streambank Protection, Upland Protection and Wetland Protection on Lower 4 miles of Chiwawa as appropriate.	--
Biological Benefit Tier 1, Social Benefit Tier 4				
1	4	PC-1370	Assess efficiencies and identify funding sources Throughout Peshastin Creek Assessment Unit	--
Biological Benefit Tier 1, No Social Benefit Tier				
1	--	UW and ChiwC-1725	Implement as appropriate Streambank Protection, Upland Protection and Wetland Protection on mainstem Middle and Upper Wenatchee.	--
1	--	LW-1170	Evaluate high risk areas and prioritize (see CMZ Study) Streambank Protection, Upland Protection and Wetland Protection Throughout Lower Wenatchee Assessment Unit and associated with CMZ sites	--
1	--	PC-1420	Evaluate potential site selection for Streambank Protection, Upland Protection and Wetland Protection Downstream of Ingalls Creek.	--
1	--	LitWR-1970	Acquire conservation easements and pursue other innovative measures as opportunities arise for Streambank Protection, Upland Protection and Wetland Protection in lower Little Wenatchee River assessment unit.	--
1	--	WhR-2010	Streambank Stabilization, Channel Connectivity and Off-Channel Habitat Below Sears Creek.	--
1	--	WhR-2020	Wetland Improvement and Enhancement and Wetland Restoration Below Sears Creek.	--
1	NR	PC-1380	Evaluate options such as use of storage, changed point of diversion, water right purchase or lease throughout Peshastin Creek Assessment Unit	--
Biological Benefit Tier 2, Social Benefit Tier 1				
2	1	NC-1890	Evaluate feasibility of Culvert Improvements or Upgrades and Culvert Removal along Coulter/Roaring (Railroad Crossing), look at USBR Assessment and Barrier Study	--

BBT	SST	Action ID	Brief Description of Action	Status
2	1	NC-1900	Evaluate feasibility of Culvert Improvements or Upgrades and Culvert Removal along Mill Creek, look at Barrier Study.	--
2	1	NC-1910	Evaluate feasibility of Culvert Improvements or Upgrades and Culvert Removal in Gill and Roaring Creeks (lower reaches), look at USBR Assessment and Barrier Study	--
2	1	CC-1550	Culvert Improvements or Upgrades on mainstem Chumstick for fish passage.	--
2	1	IC-1670	Restore passage at dam 5 and headgate in Icicle Creek Assessment Unit.	permitting is underway by USFWS?
2	1	LitWR-1960	Assess, design, permit, implement Recreation Management and Planting at Dispersed recreation sites below Little Wenatchee Falls in Little Wenatchee River Assessment Unit.	--
Biological Benefit Tier 2, Social Benefit Tier 2				
2	2	IC-1650	Evaluate feasibility of road obliteration near Trout Creek (USFS).	--
2	2	NC-1860	Evaluate specific need for Forestry Practices or Stand Management and Planting and develop schedule based on USBR Assessment from Mouth of Nason Creek to Whitepine Creek.	--
2	2	CC-1520	Evaluate and implement planting as appropriate in selected areas: Eagle Cr - to Little Chumstick.	--
2	2	CC-1521	Complete and monitor planting for 17 landowners within selected areas in Chumstick creek Assessment unit.	7,140 linear feet planted in 2007
2	2	CC-1500	Evaluate and implement as appropriate Fencing, Lifestock Exclusion and Conservation Grazing Management throughout Chumstick Creek assessment unit.	--
2	2	IC-1610	Improve intake, providing pump back (20 cfs) and improving the delivery pipe of Cascade and hatchery pipe (USFWS)	--
Biological Benefit Tier 2, Social Benefit Tier 3				
2	3	CC-1510	Evaluate and implement weed control as appropriate throughout Chumstick Creek assessment unit.	--
2	3	IC-1640	Evaluate overall need of Riparian Planting and Sediment Control below Icicle Creek Hatchery.	--
2	3	IC-1660	Reconnect side channel above LNFH between headgate and dam 5 completed by (USFWS).	Structures between headgate and dam 5 removed in 2003

BBT	SST	Action ID	Brief Description of Action	Status
2	3	CR-1830	Evaluate approach, identify appropriate methods and obtain permits and approval for Carcass Analog and Carcass Placement Within current and historic range, consistent within individual stream capacity within the Chiwawa River assessment unit.	--
2	3	NC-1920	Evaluate approach, identify appropriate methods and obtain permits and approval for Carcass Analog and Carcass Placement Within current and historic range, consistent within individual stream capacity in Little Wenatchee River Assessment Unit.	--
2	3	LitWR-1930	Fund NEPA to implement USFS Roads Analysis recommendations throughout Little Wenatchee River Assessment Unit.	--
2	3	LitWR-1950	Evaluate approach, identify appropriate methods and obtain permits and approval for Carcass Analog and Carcass Placement Within current and historic range, consistent within individual stream capacity in the Little Wenatchee River Assessment Unit.	--
2	3	WhR-2000	Evaluate approach, identify appropriate methods and obtain permits and approval for Carcass Analog and Carcass Placement Within current and historic range, consistent within individual stream capacity in the White River Assessment Unit.	--
Biological Benefit Tier 2, Social Benefit Tier 4				
2	4	CC-1530	Evaluate and implement Road Drainage System Improvements, Erosion Control Structures and Road Obliteration on Tributaries and upper watershed.	--
2	4	IC-1600	Work with irrigation districts to increase irrigation delivery and use efficiency Throughout icicle Creek Assessment Unit	--
Biological Benefit Tier 2, No Social Benefit Tier				
2	--	IC-1680	Evaluate, design and implement fishways where appropriate in Icicle Creek Assessment Unit. Assess all irrigation structures in conjunction with appropriate irrigation districts.	--
Biological Benefit Tier 3, Social Benefit Tier 1				
3	1	MC-1240	Education program to determine BMPs for domestic and agri-business practices Throughout Mission Creek Assessment Unit	--
3	1	CR-1810	Evaluate future Culvert Improvements or Upgrades and Culvert Removal, complete those in progress on Clear, Minnow, Alder, and Deep creeks.	--

BBT	SST	Action ID	Brief Description of Action	Status
3	1	LitWR-1940	Evaluate need for Planting and Forestry Practices or Stand Management in the Little Wenatchee River Assessment Unit.	--
3	1	LW-1180	Implement in conjunction with CMZ projects and others as appropriate	--
3	1	IC-1630	Evaluate opportunities and acquire as available Streambank Protection, Upland Protection and Wetland Protection below Icicle Creek Hatchery.	--
Biological Benefit Tier 3, Social Benefit Tier 2				
3	2	IC-1690	Complete LNFH (USFWS). Replace Icicle/ Leavenworth and LNFH-Cascade screens in Icicle Creek Assessment Unit.	--
3	2	MC-1340	Evaluate Channel Reconfiguration on Mission from Mouth to NF Boundary	Cross Vanes completed 2007
Biological Benefit Tier 3, Social Benefit Tier 3				
3	3	MC-1270	Evaluate effects and identify areas where feasibility exists Throughout Mission Creek Assessment Unit	--
Biological Benefit Tier 3, Social Benefit Tier 4				
3	4	CC-1540	Reconnect side-channel throughout Chumstick Creek watershed.	--
3	4	MC-1250	Increase Irrigation efficiency Throughout Mission Creek Assessment Unit	--
3	4	CR-1820	Evaluate approach to Reduce or Eliminate Brook Trout in Minnow and Schaefer Lakes.	--
Biological Benefit Tier 3, No Social Benefit Tier				
3	--	IC-1665	Implement Streambank Protection, Upland Protection and Wetland Protection as appropriate from mouth of Icicle Creek to hatchery.	--
3	--	MC-1260	Evaluate storage from other watersheds (Peshastin and Icicle Creeks) for Mission Creek.	Assessment being done in 2008/09
3	--	UW and ChiwC-1710	USBR fluvial assessment. Evaluate the need and feasibility of lower River Road modification/relocation of NF Road above Tumwater Canyon.	--
3	--	UW and ChiwC-1730	Evaluate NF campground relationship to river function in Upper Wenatchee (Lake to Tumwater) and Chiwaukum Creek Assessment Unit.	--

BBT	SST	Action ID	Brief Description of Action	Status
Biological Benefit Tier 4, Social Benefit Tier 1				
4	1	MC-1350	Check with barrier inventory to identify locations (E. Fork, Little Camas, lower mainstem?) for Culvert Improvements or Upgrades, Culvert Removal, Channel Reconfiguration, Weirs (log or rock) and Diversion Dam or Push-up Dam Removal throughout Mission Creek assessment unit	--
4	1	PC-1460	Check with barrier inventory for culvert improvements or upgrades on Mill Creek, Ruby and Scotty Creek. Assess and engineer.	--
4	1	UW and ChiwC-1760	Determine rank among Wenatchee priorities of 6 culverts starting at RM 0.3 (others within potential fish distribution?). Implement 1-2 per year in years 2-3.	--
4	1	UW and ChiwC- 1761	Implement Culvert Improvements or Upgrades at Beaver Complex #1, #2, #3.	Beaver 1&3 completed 2007. #2 funded and scheduled for 2008
4	1	UW and ChiwC- 1762	Implement Culvert Improvements or Upgrades at Chiwawa Loop Rd.	Funded and scheduled for 2008
Biological Benefit Tier 4, Social Benefit Tier 2				
4	2	IC-1620	500-1000 feet per year of planting/weed control below Icicle Creek Hatchery.	--
Biological Benefit Tier 4, Social Benefit Tier 3				
4	3	LW-1050	Conversion of small pumps to wells in Lower Wenatchee Assessment Unit	--
4	3	LW-1060	Provide incentives for conserving water - municipal in Lower Wenatchee Assessment Unit	--
4	3	MC-1290	Evaluate Japanese Knotweed removal and implement as appropriate Throughout Mission Creek Assessment Unit	--
4	3	MC-1310	Road Analysis on NF Roads in Mission Creek Assessment Unit	--
4	3	CR-1770	Evaluate Channel Connectivity and Off-Channel Habitat at Chikamin Flat.	Project being developed by USFS w/landowner
Biological Benefit Tier 4, Social Benefit Tier 4				
4	4	LW-1080	Investigate water right purchase or lease in Lower Wenatchee Assessment Unit	--
4	4	MC-1320	Evaluate Channel Connectivity and Off-Channel Habitat Between RM 4 and RM 6 in Mission Creek Assessment Unit.	--
4	4	MC-1330	Assess and reduce County / City and (2-3 miles Brender) road interferences with channel function in Mission Creek Assessment Unit.	--

BBT	SST	Action ID	Brief Description of Action	Status
4	4	LW-1040	Improve irrigation delivery and use efficiency in Lower Wenatchee Assessment Unit	--
4	4	PC-1410	Alternatives Analysis of Channel Connectivity and Off-Channel Habitat on Lower Peshastin (mouth to RM 1).	--
4	4	LW-1061	Provide incentives for conserving water - irrigation districts in Lower Wenatchee Assessment Unit	--
4	4	LW-1070	Develop administrative structure for a water bank in Lower Wenatchee Assessment Unit	--
Biological Benefit Tier 4, No Social Benefit Tier				
4	--	MC-1300	Implement planting as opportunities arise Throughout Mission Creek Assessment Unit	--
4	--	MC-1302	Monitor 1,950 linear feet planted in 2007 throughout Mission Creek Assessment Unit	1,950 linear feet planted in 2007
4	--	PC-1430	Assessment for shade and channel structure, plantings as opportunities arise Throughout Peshastin Creek Assessment Unit	--
4	--	CR-1790	Implement, monitor, adaptively manage NF campsites - middle/upper watershed.	Completed by USFS 2006-07
4	NR	MC-1301	Evaluate feasibility of planting program, Implement IRIS program, on Mainstem between RM 4-6	--
4	Same as LW 4 from old table?	LW-1030	Implement irrigation practice improvements as appropriate through current and future FSA programs in conjunction with WWPU in Lower Wenatchee Assessment Unit	--
No Biological Benefit Tier, Social Benefit Tier 1				
--	1	IC-1580	Education program to determine BMPs for domestic and agri-business practices Throughout icicle Creek Assessment Unit	--
--	1	UW and ChiwC-1750	Implement Culvert Improvements or Upgrades on Skinny Creek.	Upper Skinny Completed 2006
No Biological Benefit Tier, Social Benefit Tier 2				
--	2	UW and ChiwC-1700	100 - 500 feet of planting per year Associated with some residential development (above Tumwater Canyon).	--

BBT	SST	Action ID	Brief Description of Action	Status
--	2	IC-1590	Implement recommendations from TMDL Throughout icicle Creek Assessment Unit	--
No Biological Benefit Tier, Social Benefit Tier 4				
--	4	NST-1190	Evaluate, design and implement Road Reconstruction, Road Relocation, Road Obliteration and Sediment Control Throughout Northside Tributaries Assessment Unit	--
--	4	LW-1000	Work through TMDL process to evaluate / model affect of irrigation withdrawal on flow / water temperature relationship in Lower Wenatchee Assessment Unit	Model completed in TMDL assessment

TABLE 3-9

Recommendations and Assessments – Habitat

Action ID	Brief Description of Action
LW-1010	Implement recommendations from temperature TMDL in Lower Wenatchee Assessment Unit
LW-1090	Assess influence of groundwater withdrawals on surface water in Lower Wenatchee Assessment Unit
PC-1440	Assessment for road channel structure (focus on NF - tributaries above Ingalls) Above Ingalls Creek and Upper Tributaries.
UW and ChiwC-1741	ID funding source to partner w/ WSDOT for channel reconfiguration on Skinney Creek (RM 0.0-0.5).
NST-1200	Update barrier inventory and assess potential projects Throughout Northside Tributaries Assessment Unit
NST-1210	Evaluate options such as use of out-of-basin water, pumping from lower Wenatchee reserve, PUD hookup, deep groundwater, storage, water right purchase Throughout Northside Tributaries Assessment Unit
MC-1220	Evaluate BOD and affect to DO Throughout Mission Creek Assessment Unit
MC-1230	Monitor fish health / toxicology Throughout Mission Creek Assessment Unit
IC-1570	Evaluation of sediment budget, appropriate channel migration and sequence of actions from Mouth to Boulder Field in Icicle Creek Assessment Unit.
UW and ChiwC-1740	Evaluate and obtain permission to remove old earth dikes, canary reed grass, reestablish channel's) and native vegetation on Lower sections (of chiwaukum or Skinney?.sounds like Skinney habitat).

TABLE 3-10

Phase III Habitat Actions Not Ranked in Phase IV Plan

Recommended Action	Responsible Entity	Status
H-1: Implementation of watershed planning will be coordinated with the Salmon Recovery Implementation Schedule (the Implementation Plan Matrix is Appendix H in UCSRB (2005)) and the Upper Columbia Salmon Recovery Implementation Team. The Wenatchee Habitat Subcommittee will serve as the local coordinating body for implementation of salmon recovery habitat actions across the watershed. Chelan County Natural Resource Department is currently developing a habitat project database that will be available to the subcommittee in the near future to list past projects, track current projects, and evaluate what future habitat actions should take place.	CCNRD	In progress
H-2: The WRIA 45 Planning Unit supports implementation of projects identified in the Wenatchee River and Nason Creek Channel Migration Zone Study (Jones and Stokes, 2004).	WWPU	The high priority CMZ projects that should be done are being specifically identified in the implementation schedule during this update process. See LW-1160
H-3: The WRIA 45 Planning Unit supports implementation of the actions in the Wenatchee Subbasin Plan (Subbasin Plan sections 7.4 to 7.8 (NPCC, 2004)), and supports the Subbasin Plan approach to evaluation and monitoring of terrestrial and aquatic ecosystems in the Wenatchee Watershed. Section 2.5.1 of the Wenatchee Subbasin Plan which lists key findings from the Terrestrial Assessment is reproduced in Appendix C. The Planning Unit asks the co-planners and co-managers to seek funding from Bonneville Power Administration (BPA) and other sources for implementation of these actions.	WWPU, Co-managers, BPA	Recommendation
H-4: The Habitat Subcommittee with Chelan County as lead should coordinate with funding organizations and action agencies to maintain a publicly accessible database of past and current habitat projects for the Wenatchee Watershed.	Habitat Subcommittee	Done through CCNRD EkoSystem. Being revised for regional use through Habitat Work Schedule (coordinated with all Lead Entities, UCSRB and HSC)

Recommended Action	Responsible Entity	Status
H-5: The Planning Unit will provide opportunities for public comment on watershed scale studies and plans when, by a vote of the Planning Unit, they are determined to be a priority of the Planning Unit and important to aquatic health and habitat.	WWPU	Recommendation
H-6: The mainstem Wenatchee River provides habitat *important to the entire watershed* for many life stages of spring and summer Chinook, steelhead, bull trout and other culturally important species, and needs to be protected, enhanced, and restored. All remaining intact areas on the mainstem should be maintained. Where possible, floodplain function should be restored, particularly from the Mission Creek confluence downstream to the Columbia River confluence.	Chelan County, others?	Included in Implementation Schedule as a Tier 1 biological benefit protection action, LW-1170
H-7: All property owners and managers in the watershed are encouraged to continue to cooperate in maintaining forest roads. Opportunities for inter-agency or multiple owner cooperation in roads management should continue to be supported (Additional and background information on forest roads in presented in Appendix C).	Forest Service, Private forest interests: Property owners and managers	Recommendation. Specific road actions are listed in Imp Schedule by Sub-Watershed.
H-8: Noxious weeds threaten aquatic and terrestrial ecosystems throughout the Wenatchee Watershed. The Planning Unit supports efforts toward noxious weed control and eradication.	WWPU	Will include in watershed wide actions during next update
H-9: Consider using the Icicle Fund "Natural Resource Profile" as a tool to identify terrestrial habitat opportunities (Pacific Biodiversity Institute, 2002).	CCNRD	Recommendation
H-10: A fish barrier inventory has been conducted in many areas of the watershed; however, key inventory data regarding each barrier is not always consistent (i.e. whether it is a partial or full barrier, etc.). A method for updating the inventory should be established and funded. The Chelan County fish barrier inventory should be integrated with fish barrier information collected by other land managers, such as the Forest Service. Look at SalmonScape as a starting point for integrating barrier information. The organization has been able to integrate barrier information from other land managers. In addition, the Habitat Subcommittee should try to address the need to include irrigation diversions, specifically pump diversions, in the Chelan County Fish barrier inventory using appropriate funding sources.	CCNRD, others?	See WW-3010 and specific culvert recommendations by Sub-Watershed in Appendix C. The Upper Columbia Regional Technical Team is currently prioritizing culverts for implementation. This information will be added to Appendix C.

Recommended Action	Responsible Entity	Status
H-11: Efforts that are ongoing in the Wenatchee Watershed to improve or maintain habitat quality need to be encouraged and retained. Recognize and acknowledge achievements in the watershed that have accomplished habitat improvement or protection. Develop a landowner or organization recognition program to recognize habitat improvement projects or achievements in the watershed.	CCNRD	Move to Outreach
H-12: Initiate public information efforts to discourage harassment of spawning salmonids (UCRTT, 2002).		Move to Outreach or watershed wide
H-13: Salmon habitat restoration and protection actions should be coordinated with the Wenatchee Habitat Subcommittee to ensure consistency with watershed-wide strategies as identified in the watershed plan and other plans. Additionally, all other actions related to salmon recovery, including hatchery, harvest and hydropower activities, should be coordinated with the Wenatchee Habitat Subcommittee. Hatchery, harvest and hydropower activities that have a negative or adverse affect on local habitat restoration or protection actions must be carefully considered in the context of the local habitat strategy.	CCNRD	Ongoing through HSC; Recommendation to other entities.

TABLE 4-1

Watershed Wide Tier 1 and 2 Ranked Water Quantity/Instream Flow/Growth and Land Use Actions

Action Name	Brief Description of Action
Tier 1 Actions	
GLU-3	Ensure that water availability is considered in UGA and LAMIRD (Local Area Managed Intense Rural Development) boundary decisions for existing and new UGAs.
WRMS-4	Continue Gaging throughout the watershed to support the new instream flow rule.
QUANT-8, QUANT-9, ChumQUANT-5, MissionQUANT-3	Track Water Availability and Use. Develop and administer reservation accounting system and verify per household water use factors.
GLU-1a and GLU-2	Chelan County Natural Resource Department (CCNRD) will provide technical input regarding the reservation and eligible uses into the decision making process for consideration by city and county land use decision makers. As part of Chelan County's zone change process, water supply and water resource information is available for use from CCNRD.
QUANT-18 and ChumQUANT-11	Encourage the County to provide information and education about water conservation options and fire planning; including: outdoor watering, timing, types of native vegetation that require low water use, lawn size, low flow fixtures, etc. to the new land user.
Tier 2 Actions	
QUANT-13	Provide public education as to the roles, responsibilities and regulations pertinent to exempt wells, and encourage the proper entities to enforce/implement (CDHD, DOH, Ecology, County).
QUANT-15 (includes 15a - 15f)	Chelan County and cities should develop policies that can be used to ensure efficient use of water in the event of a land division or new development.
QUANT-16b	Encourage funding to line canals or implement other delivery system improvements, where appropriate.
QUANT-7	Investigate water rights for purchase or lease in WRIA 45
QUANT-10, ChumQUANT-9, MissionQUANT-6	The Planning Unit recommends metering be required for all new uses eligible under the reserve.
QUANT-16d and ChumQUANT-11	Convene a forum to investigate conservation strategies and how they could be implemented by irrigation districts, ditches and other private companies.
QUANT-21	Evaluate the consumptive portion of reserved water uses and determine if recharge credit should be included in the accounting of the reservation.
Ranked as part of another Tier 1 or Tier 2 Action[1]	
QUANT-9a	Track new exempt wells through the building permit process and will coordinate with the CDHD. A joint city/county process will need to be implemented to assist the county in tracking any building permits requiring exempt wells that are issued by other cities (if applicable) within the watershed.
QUANT-9b	New rights that are granted by Ecology for domestic water uses will be tracked by CCNRD. Determine the mechanism for tracking the new permitted uses that will debit the reserve.
QUANT-9c	Long-term funding for tracking is required.

Action Name	Brief Description of Action
QUANT-16	Research how different entities in the watershed are implementing conservation measures and acknowledge current efforts. Encourage additional conservation measures where needed. Encourage incentive based solutions.
QUANT-19	Consider funding storage options from the Storage Assessment.
GLU-1	Establish a resource base for decision-makers to use to consider technical water resource information when making land use change decisions and when considering land use permit applications.

Notes
1. See the status column of Appendix A for the action with which each action in this section was ranked.

TABLE 4-2

Tier 1 and 2 Ranked Water Quality Actions

Original Action Number	New, Refined Action Number	Brief Description of Action
Tier 1 Actions		
QUAL FC-1	QUAL FC-1b	Identify sources of FC in targeted reaches based on prioritization in 1a and additional testing if needed and work with landowners to mitigate sources.
QUAL FC-8	QUAL FC-8	CDHD and WQTSC develop and implement a grant/loan funding program to replace or repair failing septic systems.
QUAL T-5	QUAL T-5a	Identify and prioritize locations for riparian plantings for shade. Base on LIDAR, Temp modeling and TMDL tech report, FLIR
QUAL FC-1	QUAL FC-1d	Design and implement a monitoring system to assess the affects of BMPs and determine whether TMDL Technical Assessment target reductions for fecal coliform have been achieved.
QUAL FC-6	QUAL FC-6	Provide onsite sewage disposal system technical assistance and education programs for homeowners and the industry.
QUAL FC-1	QUAL FC-1c	Identify other opportunities and work with willing landowners to address fecal coliform sources in other areas of the watershed.
QUAL FC-12	QUAL FC-12	Develop and implement a public education and outreach program addressing fecal coliform in the watershed.
QUAL DOpH-3	QUAL DOpH-3c	Identify willing landowners and implement the BMPs identified in DOpH-3a above.
Tier 2 Actions		
QUAL T-8	QUAL T-8	Develop new, or support existing, voluntary programs to increase riparian vegetation where needed or protect existing riparian areas on private lands (focus on areas identified in QUAL T-5a)
QUAL FC-4	QUAL FC-4	Identify where root intrusion is occurring in the sewer system, especially in areas near streams. Repair and upgrade the sewer system in these areas.
QUAL DOpH-3	QUAL DOpH-3a	Design and conduct a study to identify the source of phosphorus in groundwater in the Dryden and Cashmere reaches (as identified in the TMDL technical report) and develop BMPs to address these specific sources.
QUAL FC-23	QUAL FC-23	Work with wastewater purveyors to examine sewer collection systems to identify problems or damage within them that may contribute fecal coliform loading in the watershed.
QUAL DOpH-3	QUAL DOpH-3b	Design and conduct a monitoring study to identify any non-point sources in tributaries that may be contributing to nutrient loads.
QUAL DOpH-5	QUAL DOpH-5b	Design and conduct a study to assess the capacity of soils in the watershed to handle onsite septic systems.

Original Action Number	New, Refined Action Number	Brief Description of Action
QUAL T-12	QUAL T-12 a	The WQTSC will evaluate current temperature monitoring locations and determine whether existing temperature monitoring locations are adequate to continue to monitor temperature for the TMDL
QUAL T-14	QUAL T-14 CHANGE TO T12-b	Consider continuously-recording water temperature monitors should be deployed from July through August to capture the critical conditions.
QUAL DOpH-3	QUAL DOpH-3e	Design and implement a monitoring system to assess the affects of BMPs (as applied in DopH 3a, 3b, 3c, 3d above) and conduct associated adaptive management

TABLE 4-3

Watershed Wide Habitat Actions

Action ID	Action Type	Specific Actions	2008-2010	2011-2013	2014-2017	After 2017	Long-term	Status	Notes/Project Development Guide
WW-3000	Fish Screening	Fish Screen Installation Fish Screen Replacement Fish Screen Removal							
WW-3010	Fish Passage	Culvert Improvements and Upgrades Culvert Removal							
WW-3020	Instream Flow	Water Leased or Purchased Change Point of Diversion Irrigation Practice Improvements Other conservation and efficiency actions							
WW-3030	Sediment Reduction	Riparian Habitat Planting	Develop watershed wide outreach program for landowners						
WW-3040	Sediment Reduction	Road Reconstruction Road Relocation Road Drainage System Improvements Road Obliteration Erosion Control	Evaluate and implement road management program as identified						(forest practices and land conversion) Watershed wide

Action ID	Action Type	Specific Actions	2008-2010	2011-2013	2014-2017	After 2017	Long-term	Status	Notes/Project Development Guide
		Structures Sediment Control							
WW-3050	Water Quality Improvement	Refuse Removal							
WW-3060	Land Protection, Acquisition or Lease	Streambank Protection Upland Protection Wetland Protection							
WW-3070	Instream	Large Woody Debris (LWD)	Develop potential LWD supplies for future projects and stockpile system						Work with Methow Restoration Council?
WW-3080	Education and Outreach								
H-8		Noxious weeds threaten aquatic and terrestrial ecosystems throughout the Wenatchee Watershed. The Planning Unit supports efforts toward noxious weed control and eradication.							Will include in watershed wide actions during next update

TABLE 5-1

Lower Wenatchee Priority Actions

Tier[1]	Action Name[2]	Brief Description of Action	Responsible Entity	Status
Water Quantity Tier 2 Actions				
2	NSTQUANT-3	Chelan County and Ecology to provide public information regarding water limitations in Northside Tributaries (Fact Sheets).	Chelan County, Ecology	Ranked
Water Quality Tier 1 Actions				
1	QUAL DOpH-3c	Identify willing landowners and implement the BMPs identified in DOpH-3a above.	Not identified	Ranked
Water Quality Tier 2 Actions				
2	QUAL FC-4	Identify where root intrusion is occurring in the sewer system, especially in areas near streams. Repair and upgrade the sewer system in these areas.	Not identified	Ranked
2	QUAL DOpH-3a	Design and conduct a study to identify the source of phosphorus in groundwater in the Dryden and Cashmere reaches (as identified in the TMDL technical report) and develop BMPs to address these specific sources.	Not identified	Ranked
2	QUAL FC-23	Work with wastewater purveyors to examine sewer collection systems to identify problems or damage within them that may contribute fecal coliform loading in the watershed.	Not identified	Ranked
2	QUAL DOpH-3b	Design and conduct a monitoring study to identify any non-point sources in tributaries that may be contributing to nutrient loads.	Not identified	Ranked
2	QUAL T-12 a	The WQTSC will evaluate current temperature monitoring locations and determine whether existing temperature monitoring locations are adequate to continue to monitor temperature for the TMDL	Not identified	Ranked
2	QUAL T-14 CHANGE TO T12-b	Consider continuously-recording water temperature monitors should be deployed from July through August to capture the critical conditions.	Not identified	Ranked
Biological Benefit Tier 1, Social Benefit Tier 2				
BB1, SB2	LW-1100	Assess feasibility of reconnection side channels under Highway 2 from Sleepy Hollow to Monitor (CMZ 6, highway)	Not Identified	Funded for Alternatives Analysis for 2008

Tier[1]	Action Name[2]	Brief Description of Action	Responsible Entity	Status
BB1, SB2	LW-1110	Assess feasibility/Design of Channel Connectivity and Off-Channel Habitat above Sleepy Hollow (side channel spring river Left)	Not Identified	Ranked
Biological Benefit Tier 1, Social Benefit Tier 3				
BB1, SB3	LW-1120	Evaluated Channel Connectivity and Off-Channel Habitat near Monitor (CMZ?, Pioneer diversion)	Not Identified	Ranked
BB1, SB3	LW-1130	Evaluate Channel Connectivity and Off-Channel Habitat at Cashmere (Barrow pits)	Not Identified	Ranked
BB1, SB3	LW-1140	Monitor, evaluate and adaptively manage Channel Connectivity and Off-Channel Habitat Below Dryden Dam (CMZ?)	Not Identified	Completed 2006/7 by CCPUD
BB1, SB3	LW-1160	Implement high priority CMZ projects	Not Identified	Ranked
Biological Benefit Tier 1, No Social Benefit Tier				
BB1, No SB	LW-1170	Evaluate high risk areas and prioritize (see CMZ Study) Streambank Protection, Upland Protection and Wetland Protection Throughout Lower Wenatchee Assessment Unit and associated with CMZ sites	Not Identified	--
Biological Benefit Tier 3, Social Benefit Tier 1				
BB3, SB1	LW-1180	Implement in conjunction with CMZ projects and others as appropriate	Not Identified	Ranked

Notes

1. The habitat actions were ranked for two tiers. BB is the biological benefit tier, and SB is the social benefit tier.
2. The action name for the water quality actions reflects the new, refined action name. See Appendix B for the original action name.

TABLE 5-2

Mission Priority Actions

Tier	Action Name[1]	Brief Description of Action	Responsible Entity	Status
Water Quantity Tier 1 Actions				
1	QUANT-8, QUANT-9, ChumQUANT-5, MissionQUANT-3	Track Water Availability and Use. Develop and administer reservation accounting system and verify per household water use factors.	CCNRD; Ecology, Chelan County	Ranked. Mission QUANT-3 done in instream flow rule and forum process. In Process. Funding secured to develop reservation accounting and metering plan. Grant timeline 2-08 thru 6-09
1	MissionQUANT-4	Evaluate alternatives that could increase available water for instream and out-of-stream uses.	Water Quantity/Instream Flow/Storage Subcommittee	Ranked, in process. Funded through Ecology grant for Mission and Chumstick Water Forum. Grant timeline 4-08 thru 6-09
Water Quantity Tier 2 Actions				
2	MissionQUANT-8	Investigate water rights for purchase or lease as part of the mitigation and enhancement strategy for Mission Sub-watershed.	Chelan County, funding Entities could include: BPA, WWT, WRC, BOR, NPCC, Ecology, others	Ranked
2	QUANT-10, ChumQUANT-9, MissionQUANT-6	The Planning Unit recommends metering be required for all new uses eligible under the reserve.	WWPU	Ranked. Funded to develop metering plan by June 30, 09

Tier	Action Name[1]	Brief Description of Action	Responsible Entity	Status
Ranked as part of another Tier 1 or Tier 2 action				
--	MissionQUANT-5	Consider storage opportunities within Mission Sub-watershed.	--	See QUANT-19
Water Quality Tier 1 Actions				
1	QUAL FC-1b	Identify sources of FC in targeted reaches based on prioritization in 1a and additional testing if needed and work with landowners to mitigate sources.	Not identified	Ranked
1	QUAL FC-1d	Design and implement a monitoring system to assess the affects of BMPs and determine whether TMDL Technical Assessment target reductions for fecal coliform have been achieved.	Not identified	Ranked
1	QUAL FC-12	Develop and implement a public education and outreach program addressing fecal coliform in the watershed.	Not identified	Ranked
1	QUAL T-5a	Identify and prioritize locations for riparian plantings for shade. Base on LIDAR, Temp modeling and TMDL tech report, FLIR	Not identified	Ranked
Water Quality Tier 2 Actions				
2	QUAL FC-23	Work with wastewater purveyors to examine sewer collection systems to identify problems or damage within them that may contribute fecal coliform loading in the watershed.	Not identified	Ranked
2	QUAL DOpH-3b	Design and conduct a monitoring study to identify any non-point sources in tributaries that may be contributing to nutrient loads.	Not identified	Ranked
2	QUAL T-8	Develop new, or support existing, voluntary programs to increase riparian vegetation where needed or protect existing riparian areas on private lands (focus on areas identified in QUAL T-5a)	Not identified	Ranked
2	QUAL T-12 a	The WQTSC will evaluate current temperature monitoring locations and determine whether existing temperature monitoring locations are adequate to continue to monitor temperature for the TMDL	Not identified	Ranked

Tier	Action Name[1]	Brief Description of Action	Responsible Entity	Status
2	QUAL T-14 CHANGE TO T12-b	Consider continuously-recording water temperature monitors should be deployed from July through August to capture the critical conditions.	Not identified	Ranked
Biological Benefit Tier 3, Social Benefit Tier 1				
BB3, SB1	MC-1240	Education program to determine BMPs for domestic and agri-business practices Throughout Mission Creek Assessment Unit	Not Identified	--
Biological Benefit Tier 4, Social Benefit Tier 1				
BB4, SB1	MC-1350	Check with barrier inventory to identify locations (E. Fork, Little Camas, lower mainstem?) for Culvert Improvements or Upgrades, Culvert Removal, Channel Reconfiguration, Weirs (log or rock) and Diversion Dam or Push-up Dam Removal throughout Mission Creek assessment unit	Not Identified	--

Notes

1. The action name for the water quality actions reflects the new, refined action name. See Appendix B for the original action name.

TABLE 5-3

Peshastin Priority Actions

Tier[1]	Action Name[2]	Brief Description of Action	Responsible Entity	Status
Water Quantity Tier 1 Actions				
1	Peshastin QUANT-3	Evaluate alternatives that could increase available water for instream and out-of-stream uses.	Water Quantity/Instream Flow/Storage Subcommittee	Ranked
Water Quantity Tier 2 Actions				
2	Peshastin QUANT-4	Evaluate and institute programs to increase instream flows through water acquisitions, leases, and transfers.	Chelan County, funding Entities could include: BPA, WWT, WRC, BOR, NPCC, Ecology, others	Ranked
Water Quality Tier 1 Actions				
1	QUAL T-5a	Identify and prioritize locations for riparian plantings for shade. Base on LIDAR, Temp modeling and TMDL tech report, FLIR	Not identified	Ranked
Water Quality Tier 2 Actions				
2	QUAL T-8	Develop new, or support existing, voluntary programs to increase riparian vegetation where needed or protect existing riparian areas on private lands (focus on areas identified in QUAL T-5a)	Not identified	Ranked
2	QUAL T-12 a	The WQTSC will evaluate current temperature monitoring locations and determine whether existing temperature monitoring locations are adequate to continue to monitor temperature for the TMDL	Not identified	Ranked
2	QUAL T-14 CHANGE TO T12-b	Consider continuously-recording water temperature monitors should be deployed from July through August to capture the critical conditions.	Not identified	Ranked
Biological Benefit Tier 1, Social Benefit Tier 2				
BB1, SB2	PC-1360	Assess irrigation improvement practices in Tandy Ditch and PID (efficiency) incorporate existing irrigation district facility improvement plans	Not Identified	--

Tier[1]	Action Name[2]	Brief Description of Action	Responsible Entity	Status
BB1, SB2	PC-1361	Convert 9,900 feet of open canal to pipe in Peshastin Irrigation District, lower part of canal	Not Identified	Funding secured
Biological Benefit Tier 1, Social Benefit Tier 3				
BB1, SB3	PC-1390	USBR conducting fluvial assessment to identify opportunities from Peshastin Creek Mouth to Ingalls (20 - 30 structures). Evaluate and prioritize results.	Not Identified	USBR assessment 2008/09
BB1, SB3	PC-1450	USBR conducting fluvial assessment to identify opportunities for channel reconfiguration structures at and below PID (10 structures). Evaluate and prioritize results.	Not Identified	USBR assessment 2008/09
BB1, SB3	PC-1411	USBR conducting fluvial assessment to identify opportunities from Ingalls Creek to RM 1 on Peshastin Creek. Evaluate and prioritize results	Not Identified	USBR assessment 2008/09
Biological Benefit Tier 1, Social Benefit Tier 4				
BB1, SB4	PC-1370	Assess efficiencies and identify funding sources Throughout Peshastin Creek Assessment Unit	Not Identified	--
Biological Benefit Tier 1, No Social Benefit Tier				
BB1, No SB	PC-1420	Evaluate potential site selection for Streambank Protection, Upland Protection and Wetland Protection Downstream of Ingalls Creek.	Not Identified	--
BB1, No SB	PC-1380	Evaluate options such as use of storage, changed point of diversion, water right purchase or lease throughout Peshastin Creek Assessment Unit	Not Identified	--
Biological Benefit Tier 4, Social Benefit Tier 1				
BB4, SB1	PC-1460	Check with barrier inventory for culvert improvements or upgrades on Mill Creek, Ruby and Scotty Creek. Assess and engineer.	Not Identified	--

Notes

1. The habitat actions were ranked for two tiers. BB is the biological benefit tier, and SB is the social benefit tier.
2. The action name for the water quality actions reflects the new, refined action name. See Appendix B for the original action name.

TABLE 5-4

Chumstick Priority Actions

Tier[1]	Action Name[2]	Brief Description of Action	Responsible Entity	Status
Water Quantity Tier 1 Actions				
1	QUANT-8, QUANT-9, ChumQUANT-5, MissionQUANT-3	Track Water Availability and Use. Develop and administer reservation accounting system and verify per household water use factors.	CCNRD; Ecology, Chelan County	Ranked. Mission QUANT-3 done in instream flow rule and forum process. In Process. Funding secured to develop reservation accounting and metering plan. Grant timeline 2-08 thru 6-09
1	ChumQUANT-10	The Planning Unit and the Chumstick Forum (with Chelan County as lead) will evaluate alternatives that could increase available water for instream and out-of-stream uses.	Water Quantity/Instream Flow/Storage Subcommittee	Ranked, in process. Funded through Ecology grant for Mission and Chumstick Water Forum. Grant timeline 4-08 thru 6-09
1	QUANT-18 and ChumQUANT-11	Encourage the County to provide information and education about water conservation options and fire planning; including: outdoor watering, timing, types of native vegetation that require low water use, lawn size, low flow fixtures, etc. to the new land user.	Chelan County	Ranked
1	ChumQUANT-2	Chumstick Water Forum to assist in developing a data collection plan to monitor surface water flows (specify location) and develop management flows.	Chumstick Water Forum	Ranked, in process. Funded through Ecology grant for Mission and Chumstick Water Forum. Grant timeline 4-08 thru 6-09
1	ChumQUANT-3	Chumstick Water Forum, with assistance from Chelan County and Ecology, to conduct groundwater monitoring to understand hydraulic continuity and overall impact of exempt wells on groundwater levels and streamflows.	Chumstick Water Forum with assistance from Chelan County and Ecology	Ranked, In Process Grant timeline 2-08 thru 6-09

Tier[1]	Action Name[2]	Brief Description of Action	Responsible Entity	Status
1	ChumQUANT-6	A cumulative impact analysis of permit exempt use and uses associated with permits and claims approved since 1983 will be initiated by Ecology as authorized under the 1983 flow rule.	?	Ranked. In process. Grant timeline 2-08 thru 6-09.
1	ChumQUANT-7	Chumstick Forum, Chelan County and Ecology to re-evaluate a proposed strategy for the Chumstick in three years after rule adoption, when new monitoring data have been collected and assessed and cumulative impact analysis is complete.	?	Ranked. In process. Grant timeline 4-08 thru 6-09
Water Quantity Tier 2 Actions				
2	ChumQUANT-12	Investigate water rights for purchase or lease as part of the mitigation and enhancement strategy for Chumstick Sub-watershed.	Chelan County, funding Entities could include: BPA, WWT, WRC, BOR, NPCC, Ecology, others	Ranked
2	QUANT-10, ChumQUANT-9, MissionQUANT-6	The Planning Unit recommends metering be required for all new uses eligible under the reserve.	WWPU	Ranked. Funded to develop metering plan by June 30, 2009.
2	QUANT-16d and ChumQUANT-11	Convene a forum to investigate conservation strategies and how they could be implemented by irrigation districts, ditches and other private companies.	Chelan County, cities, water purveyors; Chelan County, Irrigation Districts, Canal Companies, other Agriculture. Assistance by Ecology; Chelan County, Irrigation Districts, Canal Companies, other Agriculture, cities, PUD. Ecology, others	Ranked

Tier[1]	Action Name[2]	Brief Description of Action	Responsible Entity	Status
Water Quality Tier 1 Actions				
1	QUAL FC-1b	Identify sources of FC in targeted reaches based on prioritization in 1a and additional testing if needed and work with landowners to mitigate sources.	Not identified	Ranked
1	QUAL FC-1d	Design and implement a monitoring system to assess the affects of BMPs and determine whether TMDL Technical Assessment target reductions for fecal coliform have been achieved.	Not identified	Ranked
1	QUAL FC-12	Develop and implement a public education and outreach program addressing fecal coliform in the watershed.	Not identified	Ranked
1	QUAL T-5a	Identify and prioritize locations for riparian plantings for shade. Base on LIDAR, Temp modeling and TMDL tech report, FLIR	Not identified	Ranked
Water Quality Tier 2 Actions				
2	QUAL FC-23	Work with wastewater purveyors to examine sewer collection systems to identify problems or damage within them that may contribute fecal coliform loading in the watershed.	Not identified	Ranked
2	QUAL T-8	Develop new, or support existing, voluntary programs to increase riparian vegetation where needed or protect existing riparian areas on private lands (focus on areas identified in QUAL T-5a)	Not identified	Ranked
2	QUAL DOpH-3b	Design and conduct a monitoring study to identify any non-point sources in tributaries that may be contributing to nutrient loads.	Not identified	Ranked
Biological Benefit Tier 1, Social Benefit Tier 1				
BB1, SB1	CC-1560	Culvert Improvements or Upgrades scheduled for 2010 on North Road, Lower Chumstick for fish passage.	Not Identified	funding being secured by CC Public Works
BB1, SB1	CC-1490	Education program to conserve water use through domestic and agri-business practices throughout Chumstick Creek assessment unit.	Not Identified	--

Tier[1]	Action Name[2]	Brief Description of Action	Responsible Entity	Status
Biological Benefit Tier 2, Social Benefit Tier 1				
BB2, SB1	CC-1550	Culvert Improvements or Upgrades on mainstem Chumstick for fish passage.	Not Identified	--
Biological Benefit Tier 2, Social Benefit Tier 2				
BB2, SB2	CC-1520	Evaluate and implement planting as appropriate throughout Chumstick Creek assessment unit.	Not Identified	--
BB2, SB2	CC-1521	Complete and monitor planting for 17 landowners within selected areas in Chumstick creek Assessment unit.	Not Identified	7,140 linear feet planted in 2007
BB2, SB2	CC-1500	Evaluate and implement as appropriate Fencing, Lifestock Exclusion and Conservation Grazing Management throughout Chumstick Creek assessment unit.	Not Identified	--

Notes
1. The habitat actions were ranked for two tiers. BB is the biological benefit tier, and SB is the social benefit tier.
2. The action name for the water quality actions reflects the new, refined action name. See Appendix B for the original action name.

TABLE 5-5

Icicle Priority Actions

Tier[1]	Action Name[2]	Brief Description of Action	Responsible Entity	Status
Water Quantity Tier 2 Actions				
2	IcicleQUANT-1	Evaluate alternatives that could increase available water for instream and out-of-stream uses.	Water Quantity/Instream Flow/Storage Subcommittee	Ranked
Water Quality Tier 1 Actions				
1	QUAL T-5a	Identify and prioritize locations for riparian plantings for shade. Base on LIDAR, Temp modeling and TMDL tech report, FLIR	Not identified	Ranked
Water Quality Tier 2 Actions				
2	QUAL DOpH-3b	Design and conduct a monitoring study to identify any non-point sources in tributaries that may be contributing to nutrient loads.	Not identified	Ranked
2	QUAL T-8	Develop new, or support existing, voluntary programs to increase riparian vegetation where needed or protect existing riparian areas on private lands (focus on areas identified in QUAL T-5a)	Not identified	Ranked
2	QUAL T-12 a	The WQTSC will evaluate current temperature monitoring locations and determine whether existing temperature monitoring locations are adequate to continue to monitor temperature for the TMDL	Not identified	Ranked
2	QUAL T-14 CHANGE TO T12-b	Consider continuously-recording water temperature monitors should be deployed from July through August to capture the critical conditions.	Not identified	Ranked
Biological Benefit Tier 2, Social Benefit Tier 1				
BB2, SB1	IC-1670	Restore passage at dam 5 and headgate in Icicle Creek Assessment Unit.	Not Identified	permitting is underway by USFWS?
Biological Benefit Tier 2, Social Benefit Tier 2				
BB2, SB2	IC-1650	Evaluate feasibility of road obliteration near Trout Creek (USFS).	Not Identified	--

Tier[1]	Action Name[2]	Brief Description of Action	Responsible Entity	Status
BB2, SB2	IC-1610	Improve intake, providing pump back (20 cfs) and improving the delivery pipe of Cascade and hatchery pipe (USFWS)	Not Identified	--
Biological Benefit Tier 2, No Social Benefit Tier				
BB2, No SB	IC-1680	Evaluate, design and implement fishways where appropriate in Icicle Creek Assessment Unit. Assess all irrigation structures in conjunction with appropriate irrigation districts.	Not Identified	--
Biological Benefit Tier 3, Social Benefit Tier 1				
BB3, SB1	IC-1630	Evaluate opportunities and acquire as available Streambank Protection, Upland Protection and Wetland Protection below Icicle Creek Hatchery.	Not Identified	--
No Biological Benefit Tier, Social Benefit Tier 1				
No BB, SB1	IC-1580	Education program to determine BMPs for domestic and agri-business practices Throughout icicle Creek Assessment Unit	Not Identified	--

Notes

1. The habitat actions were ranked for two tiers. BB is the biological benefit tier, and SB is the social benefit tier.
2. The action name for the water quality actions reflects the new, refined action name. See Appendix B for the original action name.

TABLE 5-6

Upper Wenatchee and Chiwaukum Priority Actions

Tier[1]	Action Name	Brief Description of Action	Responsible Entity	Status
Biological Benefit Tier 1, Social Benefit Tier 3				
BB1, SB3	UW and ChiwC-1720	USBR fluvial assessment to identify opportunities for log structures or log jams on Upper mainstem Wenatchee (Lake to Tumwater) and Chiwaukum Creek. Evaluate benefit and feasibility and prioritize results.	Not Identified	--
Biological Benefit Tier 1, No Social Benefit Tier				
BB1, No SB	UW and ChiwC-1725	Implement as appropriate Streambank Protection, Upland Protection and Wetland Protection on mainstem Middle and Upper Wenatchee.	Not Identified	--
Biological Benefit Tier 4, Social Benefit Tier 1				
BB4, SB1	UW and ChiwC-1760	Determine rank among Wenatchee priorities of 6 culverts starting at RM 0.3 (others within potential fish distribution?). Implement 1-2 per year in years 2-3.	Not Identified	--
BB4, SB1	UW and ChiwC- 1761	Implement Culvert Improvements or Upgrades at Beaver Complex #1, #2, #3.	Not Identified	Beaver 1&3 completed 2007. #2 funded and scheduled for 2008
BB4, SB1	UW and ChiwC- 1762	Implement Culvert Improvements or Upgrades at Chiwawa Loop Rd.	Not Identified	Funded and scheduled for 2008
No Biological Benefit Tier, Social Benefit Tier 1				
No BB, SB1	UW and ChiwC-1750	Implement Culvert Improvements or Upgrades on Skinny Creek.	Not Identified	Upper Skinny Completed 2006

Notes
1. The habitat actions were ranked for two tiers. BB is the biological benefit tier, and SB is the social benefit tier.

TABLE 5-7

Chiwawa Priority Actions

Tier[1]	Action Name	Brief Description of Action	Responsible Entity	Status
Biological Benefit Tier 1, Social Benefit Tier 3				
BB1, SB3	CR-1800	Implement Streambank Protection, Upland Protection and Wetland Protection on Lower 4 miles of Chiwawa as appropriate.	Not Identified	--
Biological Benefit Tier 3, Social Benefit Tier 1				
BB3, SB1	CR-1810	Evaluate future Culvert Improvements or Upgrades and Culvert Removal, complete those in progress on Clear, Minnow, Alder, and Deep creeks.	Not Identified	--

Notes
1. The habitat actions were ranked for two tiers. BB is the biological benefit tier, and SB is the social benefit tier.

TABLE 5-8

Nason Priority Actions

Tier[1]	Action Name[2]	Brief Description of Action	Responsible Entity	Status
Water Quality Tier 1 Actions				
1	QUAL T-5a	Identify and prioritize locations for riparian plantings for shade. Base on LIDAR, Temp modeling and TMDL tech report, FLIR	Not identified	Ranked
Water Quality Tier 2 Actions				
2	QUAL T-8	Develop new, or support existing, voluntary programs to increase riparian vegetation where needed or protect existing riparian areas on private lands (focus on areas identified in QUAL T-5a)	Not identified	Ranked
2	QUAL T-12 a	The WQTSC will evaluate current temperature monitoring locations and determine whether existing temperature monitoring locations are adequate to continue to monitor temperature for the TMDL	Not identified	Ranked
2	QUAL T-14 CHANGE TO T12-b	Consider continuously-recording water temperature monitors should be deployed from July through August to capture the critical conditions.	Not identified	Ranked
Biological Benefit Tier 1, Social Benefit Tier 2				
BB1, SB2	NC-1850	Ongoing, acquire Streambank Protection, Upland Protection and Wetland Protection as available or based on USBR Assessment from Mouth of Nason Creek to White Pine Creek.	Not Identified	--
BB1, SB2	NC-1870	Evaluate specific need for Channel Reconfiguration and develop schedule based on USBR Assessment for Mouth of Nason Creek to Whitepine Creek.	Not Identified	--
BB1, SB2	NC-1880	Implement and evaluate natural and/or historic lower Nason side/off channel habitats from Mouth to White Pine Creek.	Not Identified	--
Biological Benefit Tier 2, Social Benefit Tier 1				
BB2, SB1	NC-1890	Evaluate feasibility of Culvert Improvements or Upgrades and Culvert Removal along Coulter/Roaring (Railroad Crossing), look at USBR Assessment and Barrier Study	Not Identified	--
BB2, SB1	NC-1900	Evaluate feasibility of Culvert Improvements or Upgrades and Culvert Removal along Mill Creek, look at Barrier Study.	Not Identified	--
BB2, SB1	NC-1910	Evaluate feasibility of Culvert Improvements or Upgrades and Culvert Removal in Gill and Roaring Creeks (lower reaches), look at USBR Assessment and Barrier Study	Not Identified	--

Biological Benefit Tier 2, Social Benefit Tier 2				
BB2, SB2	NC-1860	Evaluate specific need for Forestry Practices or Stand Management and Planting and develop schedule based on USBR Assessment from Mouth of Nason Creek to Whitepine Creek.	Not Identified	--

Notes

1. The habitat actions were ranked for two tiers. BB is the biological benefit tier, and SB is the social benefit tier.
2. The action name for the water quality actions reflects the new, refined action name. See Appendix B for the original action name.

TABLE 5-9

White, Little Wenatchee and Lake Wenatchee Priority Actions

Tier[1]	Action Name	Brief Description of Action	Responsible Entity	Status
Biological Benefit Tier 1, Social Benefit Tier 1				
BB1, SB1	WhR-1980	Acquire conservation easements and pursue other innovative measures for Streambank Protection, Upland Protection and Wetland Protection on Lower mainstem White River.	Not Identified	Check with CDLT on status
Biological Benefit Tier 1, Social Benefit Tier 2				
BB1, SB2	WhR-1990	Evaluate specific need and develop schedule for planting from Mouth of White River to Sears Ck. Implement approximately 500 feet per year as appropriate	Not Identified	--
Biological Benefit Tier 2, Social Benefit Tier 1				
BB2, SB1	LitWR-1960	Assess, design, permit, implement Recreation Management and Planting at Dispersed recreation sites below Little Wenatchee Falls in Little Wenatchee River Assessment Unit.	Not Identified	--
Biological Benefit Tier 1, No Social Benefit Tier				
BB1, No SB	LitWR-1970	Acquire conservation easements and pursue other innovative measures as opportunities arise for Streambank Protection, Upland Protection and Wetland Protection in lower Little Wenatchee River assessment unit.	Not Identified	--
BB1, No SB	WhR-2010	Streambank Stabilization, Channel Connectivity and Off-Channel Habitat Below Sears Creek.	Not Identified	--
BB1, No SB	WhR-2020	Wetland Improvement and Enhancement and Wetland Restoration Below Sears Creek.	Not Identified	--
Biological Benefit Tier 3, Social Benefit Tier 1				
BB3, SB1	LitWR-1940	Evaluate need for Planting and Forestry Practices or Stand Management in the Little Wenatchee River Assessment Unit.	Not Identified	--

Notes
1. The habitat actions were ranked for two tiers. BB is the biological benefit tier, and SB is the social benefit tier.

TABLE 6-1

Outreach Actions

Tier	Action Name[1]	Action Description	Responsible Entity	Status	Implementation Notes and followup
Water Quantity Actions					
1	QUANT-18 and ChumQUANT-11	QUANT-18: Encourage the County to provide information and education about water conservation options and fire planning; including: outdoor watering, timing, types of native vegetation that require low water use, lawn size, low flow fixtures, etc. to the new land user. The Municipal Water Law requires that water systems provide education and outreach regarding water conservation. However, water users that are using irrigation ditch water for outdoor use and/or exempt wells will not receive this information. Irrigation systems may also be able to provide materials in monthly billings. The details of this educational program will be determined during Phase IV, Implementation. Realtors should be encouraged to distribute public education materials describing water conservation and efficient water management techniques. ChumQUANT-11: Encourage conservation and outreach.	Chelan County	Ranked	education
2	QUANT-13	Provide public education as to the roles, responsibilities and regulations pertinent to exempt wells, and encourage the proper entities to enforce/implement (CDHD, DOH, Ecology, County).	CDHD, DOH, Ecology, County	Ranked	public education
2	QUANT-15 (includes 15a - 15f)	As part of Phase IV, Implementation, Chelan County and cities should develop policies that can be used to ensure efficient use of water in the event of a land division or new development. These include: 15a - 15 f (develop policies and public education).	Chelan County, cities, other water purveyors, also CDHD	Ranked	--

Tier	Action Name[1]	Action Description	Responsible Entity	Status	Implementation Notes and followup
2	QUANT-16d	QUANT-16d: As part of Phase IV, Implementation, convene a forum to investigate conservation strategies and how they could be implemented by irrigation districts, ditches and other private companies. Involve utilities, cities, Chelan County and Ecology when appropriate. There is a need to work with members of irrigation districts, ditches and others to determine ways to save water and ensure that water rights are protected into the future. Items of discussion could include alternative rate structures based on purpose of water use; partnerships with cities and utilities; utility coordination during development; tools to conserve water, improve instream flows and protect water rights at the same time; and distribution of public education materials.	Not identified	Ranked	--
2	NSTQUANT-3	Chelan County and Ecology to provide public information regarding water limitations in Northside Tributaries (Fact Sheets).	Chelan County, Ecology	Ranked	--
3	QUANT-17	Encourage on-farm efficiencies and implementation of Best Management Practices (BMPs) to encourage water conservation.	Chelan County	Ranked	--
3	GLU-1b	Water resource and supply related data for the watershed will be maintained in a database by CCNRD (eg., a water supply dataset including water system boundaries, an exempt well tracking system, on-going tally of water rights and water use per water system, instream flow and groundwater level data, an assessment of whether current water rights can service full build-out based on current zoning, etc.). CCNRD would update this information as a larger population is served in the future and ensure the information is available in a format that is easily understood by the public.	CCNRD	Ranked	Wenatchee Water Resource Data Base.

Tier	Action Name[1]	Action Description	Responsible Entity	Status	Implementation Notes and followup
Water Quality Actions					
1	QUAL FC-6	CDHD continue to provide onsite sewage disposal system technical assistance and education programs for homeowners and the industry.	Not identified	Ranked	Recommendation?? They are already doing this, but by listing this it might allow them a means to get grant funding to continue.
1	QUAL FC-12	Develop and implement a public education and outreach program addressing fecal coliform in the watershed. This may include: (1) stream walk cleanups along the stream (Fall, Spring, Summer) with area schools, homeowners, and other groups , (2) ongoing community fecal coliform education/awareness campaigns throughout the year (FC-13); (3) coordination with outreach that the CDHD is doing in association with their technical assistance on septic systems (see QUAL FC-6); (4) addressing illegal dumping of wastes to storm drains and surface waters (FC-15). (5) BMPs to reduce fecal coliform runoff (FC-17, FC-19, FC-22). (6) Monitor and remove dead animals within the stream corridor and work with Humane Society to address feral cats and dogs.	Not identified	Ranked	Includes all education and outreach program components. Includes parts of FC-12, FC-13, FC-6, FC-15, FC-17 and FC-19
2	QUAL T-8	Develop new, or support existing, voluntary programs to increase riparian vegetation where needed or protect existing riparian areas on private lands (focus on areas identified in QUAL T-5a)	Not identified	Ranked	--

Tier	Action Name[1]	Action Description	Responsible Entity	Status	Implementation Notes and followup
3	QUAL T-17	Develop and implement an education, outreach, and technical assistance program for the watershed for temperature.	Not identified	Ranked	Somewhat being accomplished by Chelan County NRD Riparian Program. Coordinate between existing
3	QUAL DDT-7	Develop and implement a public education and outreach program addressing DDT in the watershed. Provide technical assistance to growers, streamside landowners, developers, stakeholders, and the general public.	Not identified	Ranked	--
3	QUAL DOpH-7a	Develop and implement a public education and outreach program addressing sources of phosphorus in the watershed. Work with members of the community with residential yards and gardens, hobby farms, City and County Parks Departments and business owned landscapes (QUAL DOpH-7). Work with County, cities and State DOT to reduce non-point phosphorus from roads and parking lots (DOpH-8). Work with the development community to employ appropriate BMPs during construction activities (DOpH-9). Work with the agricultural community to provide technical assistance through farm plans and BMPs (DOpH-14). Encourage filtration of nutrients through land use practices, including wetlands, filter strips, riparian vegetation, bio-swales, drainage basins, pervious surfaces, etc. in residential, commercial, agricultural, industrial, development, and municipal practices (DOpH-16). Work with irrigation districts to reduce nutrient inputs (DOpH-13).	Not identified	Ranked	--

Tier	Action Name[1]	Action Description	Responsible Entity	Status	Implementation Notes and followup
Habitat Actions					
BB1, SB1	CC-1490	Education program to conserve water use through domestic and agri-business practices throughout Chumstick Creek assessment unit.	Not identified	--	--
No BB, SB1	IC-1580	Education program to determine BMPs for domestic and agri-business practices Throughout icicle Creek Assessment Unit	Not identified	--	--
--	H-11	Efforts that are ongoing in the Wenatchee Watershed to improve or maintain habitat quality need to be encouraged and retained. Recognize and acknowledge achievements in the watershed that have accomplished habitat improvement or protection. Develop a landowner or organization recognition program to recognize habitat improvement projects or achievements in the watershed.	CCNRD	--	Phase III habitat action not ranked in Phase IV
--	H-12	Initiate public information efforts to discourage harassment of spawning salmonids (UCRTT, 2002).	Not identified	--	Phase III habitat action not ranked in Phase IV

Notes
1. The action name for the water quality actions reflects the new, refined action name. See Appendix B for the original action name.

TABLE 8-1

Inchoate Water Right and Water Use Data Received from WRIA 45 Purveyors

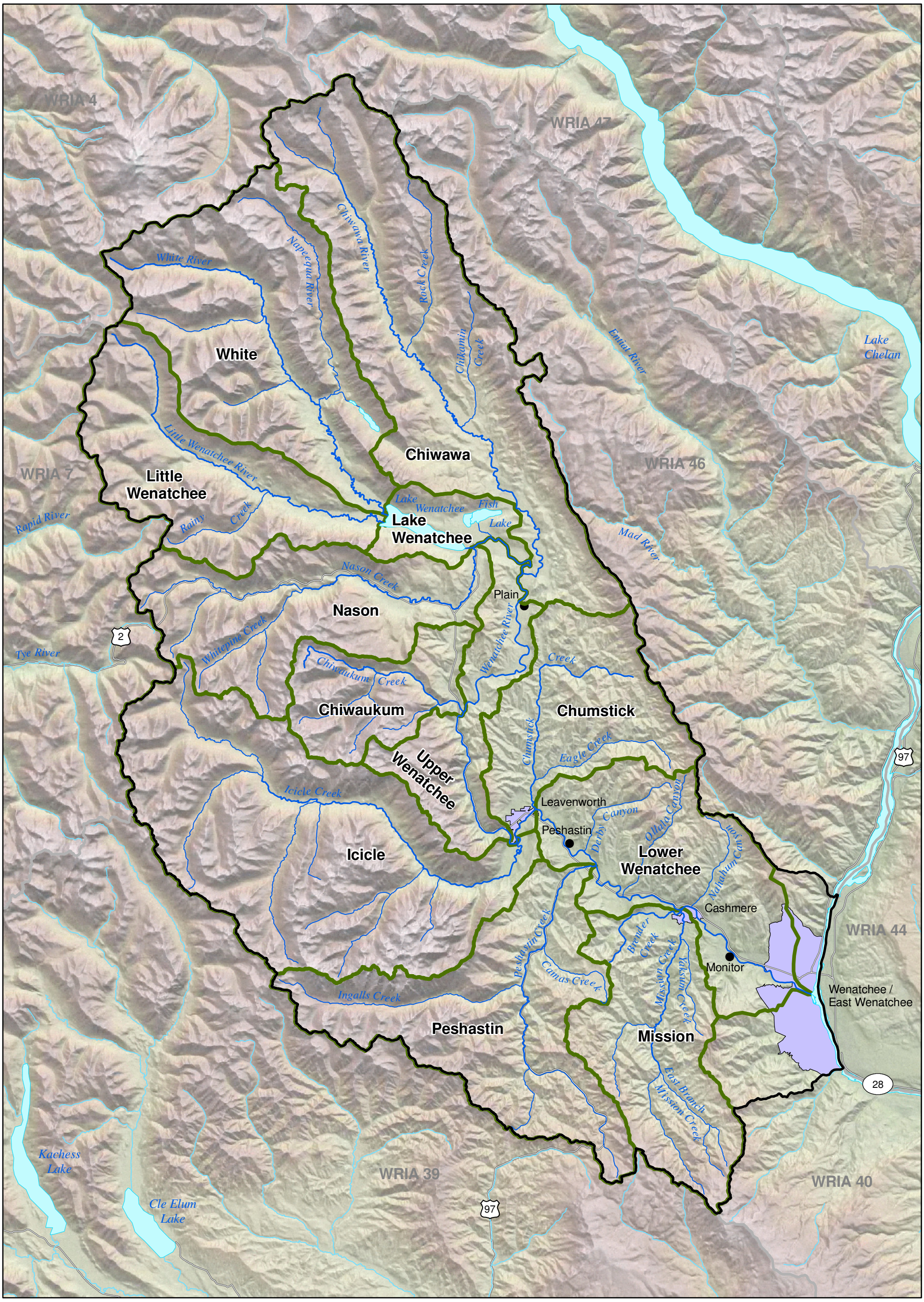
Group System	#1 Water right number and details			#2 Annual Avg use		#3 Connect-ions	#4 Pumping Capacity	#5 Year water right is anticipated to be fully used	Other Info
	Water Right Number	Q_i (gpm)	Q_a (ac-ft/yr)	Year	Use				
CCPUD-Olalla	53-00974P	161.6	73.4	2007	2,420,800 gal	27	30 gpm	Over 20 years	--
CCPUD-Dryden	G4-27929C	150	74	2007	7,153,800 gal	63	90 gpm	Over 20 years	--
City of Cashmere	10 water rights[1]	4,317	1,352[1]	2006	376,000,000 to 411,000,000 gal	1,040	well #4 and well #10 is 345 gpm Water Treatment Plant (Surface) is 2,400 gpm	2010 to 2011	A rough, preliminary estimate indicates city will need to increase current total annual water rights (Q_a) by at least 50% to meet projected 20-year demand. This is about another 700 acre-feet, and includes only the growth figures for the City, not the UGA.
Lake Wenatchee South (State Park)	5P431C	--	--	--	In process of installing meter	6	43 gpm	Unknown	No water needed at this time
Lake Wenatchee Water Users Assoc.	17516	--	--	2007	3,991,160 gal	40	30 gpm (3/4 hp submersible in 120 ft well)	2012 to 2015	Will be joining the Lake Wenatchee Water District in 2008. These water rights will become a part of their system.
Lake Wenatchee Water Users Assoc.	17516	--	--	2006	4,629,900 gal	--	--	--	

Group System	#1 Water right number and details			#2 Annual Avg use		#3 Connect-ions	#4 Pumping Capacity	#5 Year water right is anticipated to be fully used	Other Info
	Water Right Number	Q_i (gpm)	Q_a (ac-ft/yr)	Year	Use				
Mountain Springs Lodge (private well)	AA495	--	--	not required	--	--	Well #1 = 35 gpm Well #1 = 70 gpm	2020	Current wells should meet future growth demand. Will need a well for a new subdivision with 5 hook-ups (The Cascades) by summer 2009.
River Bend Mobile Park	unknown	--	--	--	unknown	32 (from DOH)	unknown	Do not anticipate any growth	--
Sunny Sites Addition 1	85390 9	--	--	2007	1,534,000 gal	29	cannot find info at this time	Now	Getting additional water would require drilling another well, and we do not have the funds to do that.
Tall Timber Homeowner Assoc./Tall Timber Sub-division	64 01194C	--	22	not required	estimate 12 ac-ft	26	80 gpm	estimate 2012	Existing water rights seem adequate. We are not affiliated with Tall Timber Ranch (camp)

Notes

1. The City of Cashmere has multiple surface water rights: Cert #9658, Superseding Cert # 3775, Superseding Cert # 11153, Superseding Cert # 729D, Superseding Cert # 728D, Superseding Cert # 3225A, Superseding Cert # 4032A, and Superseding Cert # 5448A. The city also has supplemental groundwater rights that add to the Q_i but not the total Q_a including Cert # 731D and Cert #G4-25814. However, it is possible that Cert # 731D is not supplemental in which case the total Q_a would be 1,688 AF/year.

FIGURES



LEGEND

- WRIA 45 Boundary
- WRIA Boundary
- Sub-Watershed Boundary
- Major Road
- Waterbody
- Watercourse
- Urban Area

0 5

Scale in Miles

Map Projection:
Washington State Plane,
North Zone, NAD 83, Feet

Source: Chelan County, USGS, WAGDA, WSDOE, WSDOT

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WENATCHEE WATERSHED OVERVIEW

Chelan/WRIA 45 Implementation Plan/WA

Drawn: SJG	Revison: 0	Date: Mar. 24, 2008	Figure: 1-1

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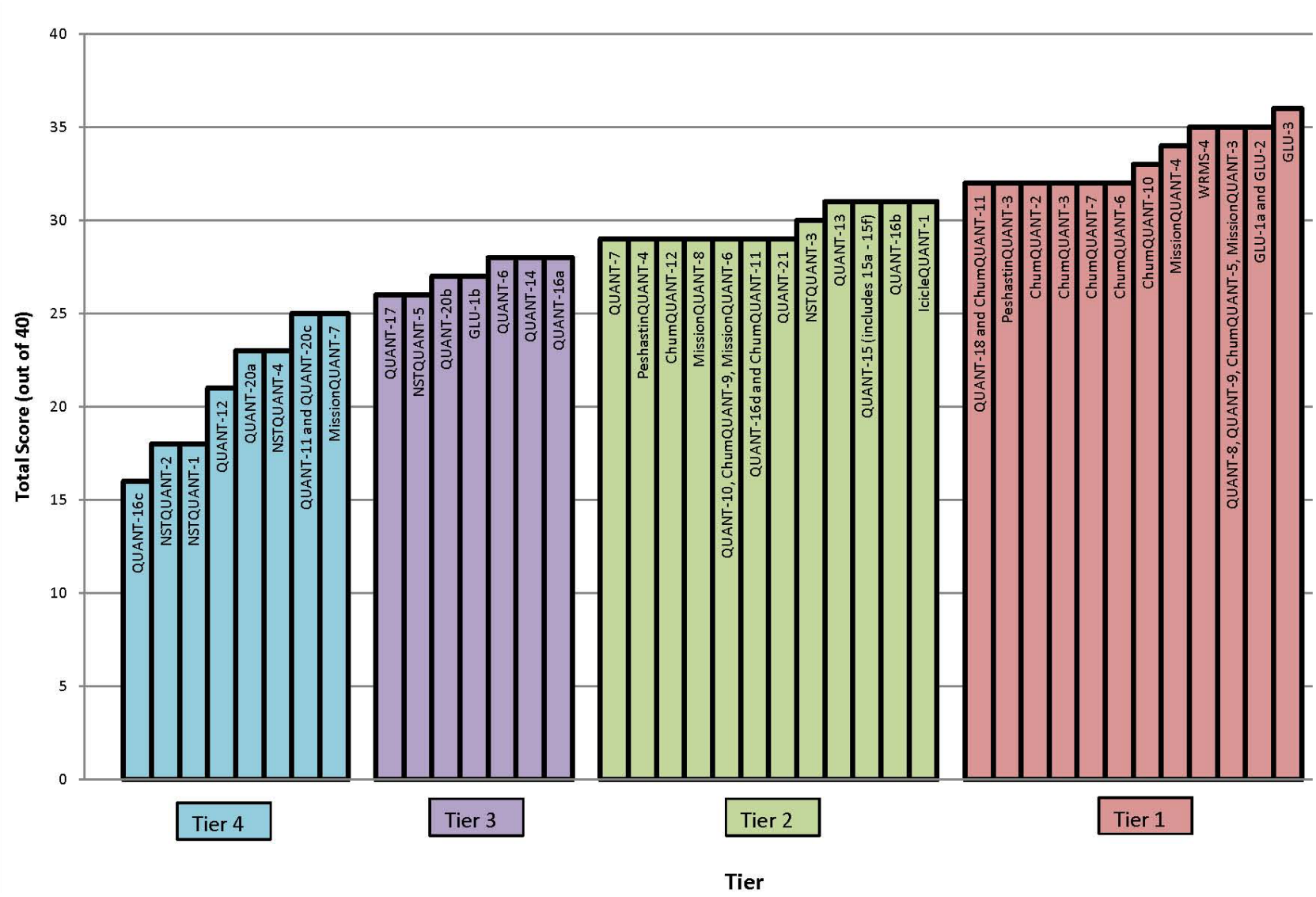
Golder Associates and Dally Environmental

Figure 3-1. All Ranked Water Quantity, Instream Flow, and Growth and Land Use Actions



DOE ID	Name	Parameter
2260	Chumstick Creek	Fecal Coliform, Temperature
2354	Wenatchee River	Dissolved oxygen, Temperature
2445	Van Creek	Fecal Coliform, pH
2776	Icicle Creek	Dissolved oxygen, pH
2897	Mission Creek	Fecal Coliform, pH, Temperature
2900	Brender Creek	4,4'-DDE, 4,4'-DDT, Dissoved Oxygen, Fecal Coliform, Temperature
2904	Mission Creek	4,4'-DDE, 4,4'-DDT, Fecal Coliform, Guthion(azinphos-methyl), pH
2920	Mission Creek	Fecal Coliform, Temperature
2926	Mission Creek	Fecal Coliform, Temperature
2927	Wenatchee River	pH, Temperature
2937	Yaksum Creek	4,4'-DDE, 4,4'-DDT
2990	Mission Creek	Fecal Coliform, Temperature
6059	No Name Creek	Fecal Coliform, pH

WRIA 4
WRIA 7
WRIA 46
WRIA 39
WRIA 40
White
Chiwawa
Little Wenatchee
Lake Wenatchee
Nason
Chiwaukum
Upper Wenatchee
Icicle
Peshastin
Lower Wenatchee
Chumstick
Mission
White River
Napeequa River
Chiwawa River
Rock Creek
Chikamin Creek
Entiat River
Lake Chelan
Little Wenatchee River
Rapid River
Rainy Creek
Lake Wenatchee
Fish Lake
Mad River
Nason Creek
Whitepine Creek
Tye River
Chiwaukum Creek
Wenatchee River
Icicle Creek
Ingalls Creek
Chumstick Creek
Eagle Creek
Derby Canyon
Peshastin Creek
Camas Creek
Brender Creek
Mission Creek
Yaksum Creek
East Fork Mission Creek
Nahahum Canyon
Leavenworth
Cashmere
Wenatchee / East Wenatchee
Kachess Lake
2260
2354
2445
2776
2897
2900
6059
2904
2920
2927
2926
2990
2937
2
97
28

LEGEND

2004 - 303d List Category 5 Parameters

- 4,4'-DDE
- 4,4'-DDT
- Fecal Coliform
- Temperature
- pH
- Multiple Parameters

Other Land Use Data

- WRIA 45 Boundary
- WRIA Boundary
- Sub-Watershed Boundary
- Major Road
- Waterbody
- Watercourse
- Urban Area

0 5

Scale in Miles

Map Projection:
Washington State Plane,
North Zone, NAD 83, Feet

Source: Chelan County, USGS, WAGDA, WSDOE, WSDOT

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2004 303(D) LISTINGS FOR WRIA 45 TMDL

Chelan/WRIA 45 Implementation Plan/WA

Drawn: SJG	Revison: 0	Date: Mar. 24, 2008	Figure: 3-2

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Figure 3-3. All Ranked Water Quality Actions by Tier

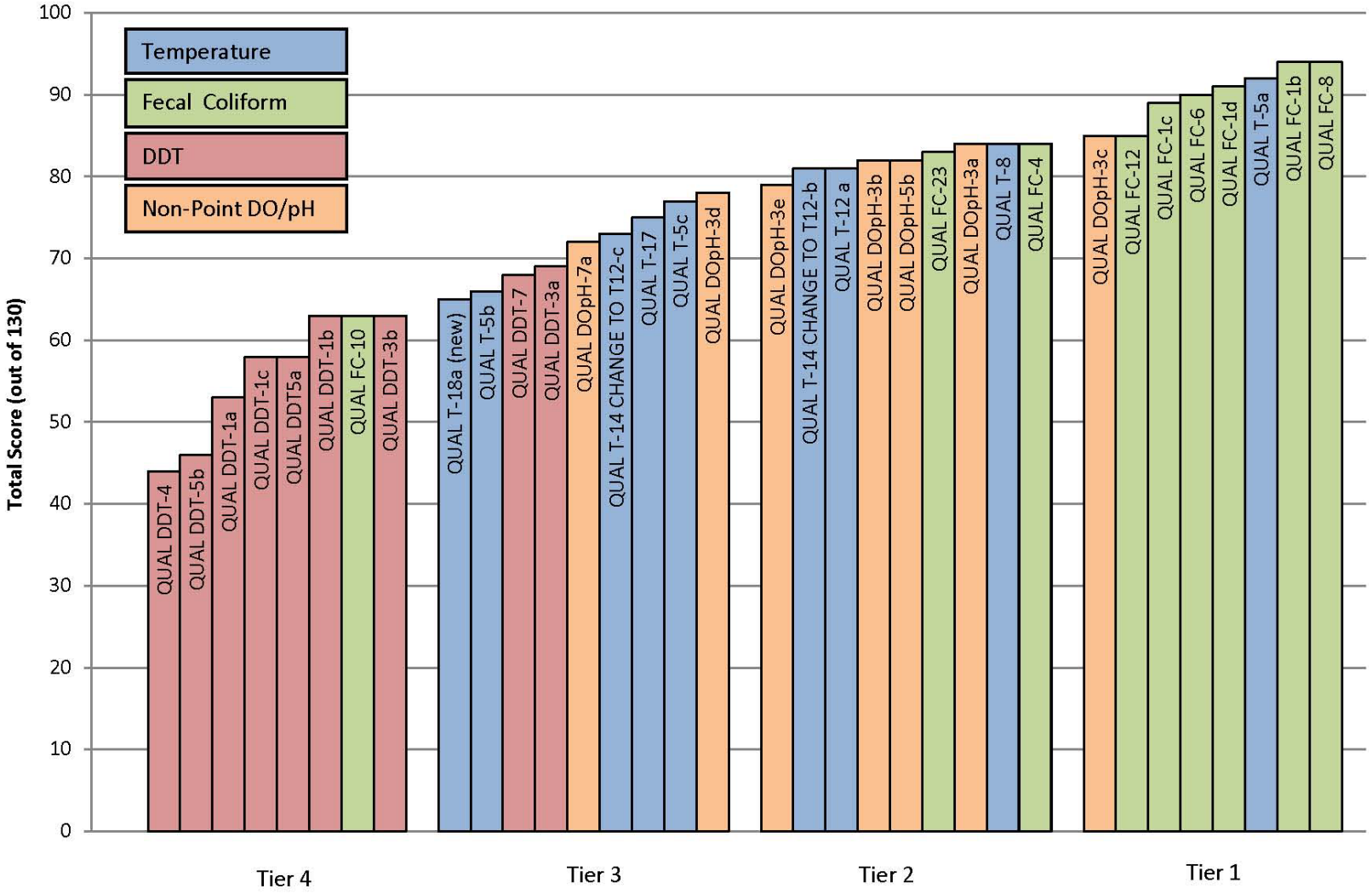
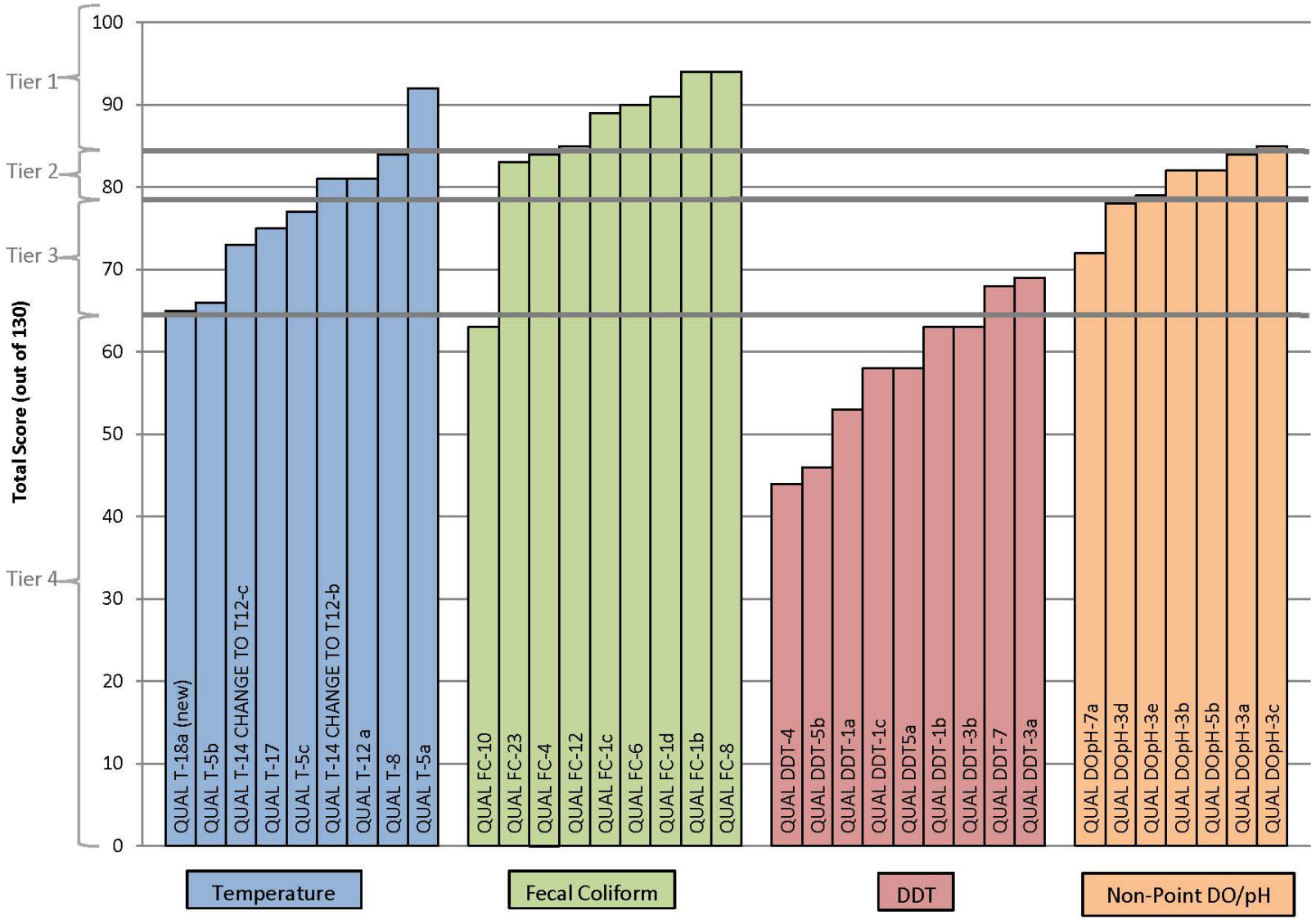
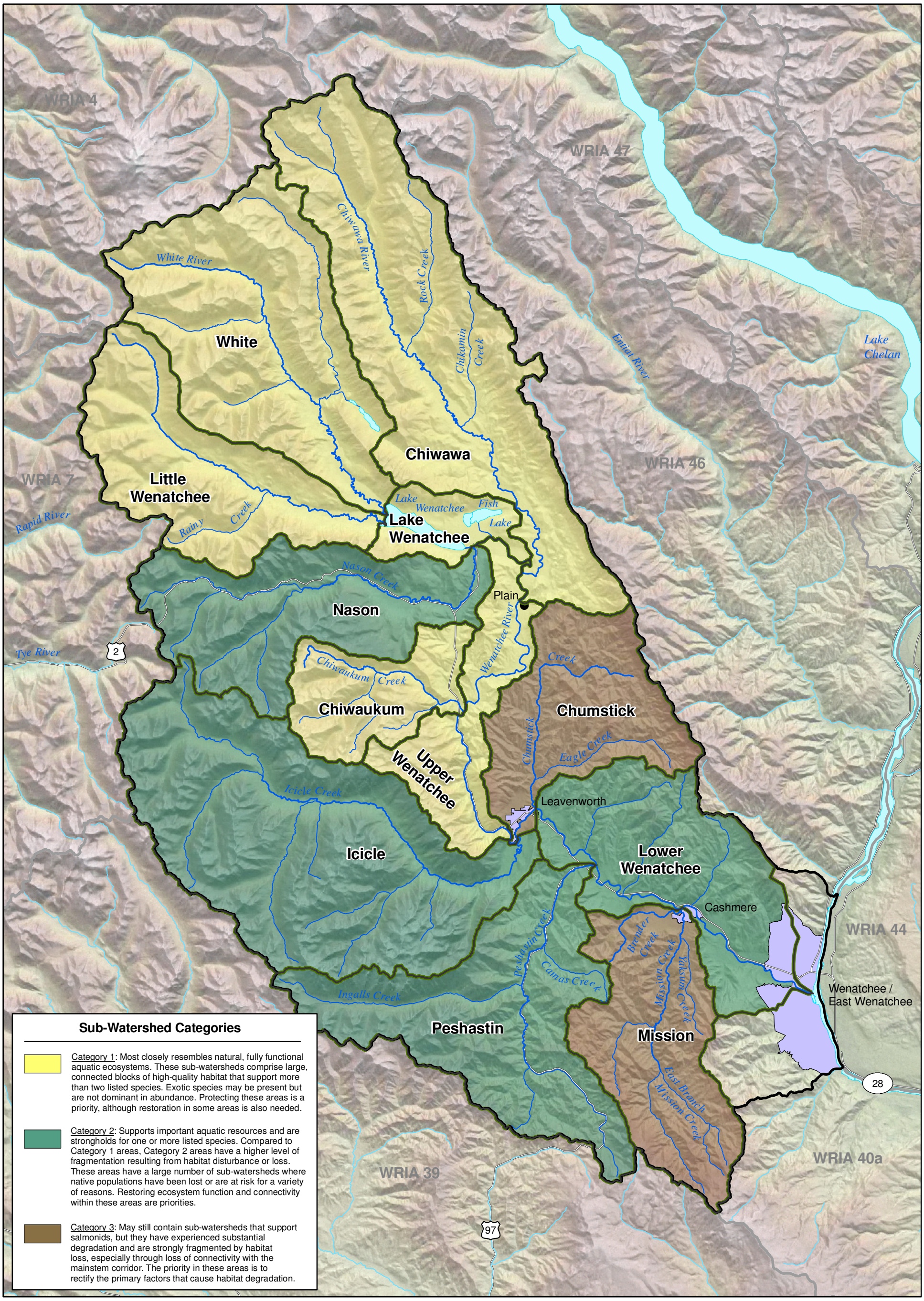


Figure 3-4. All Ranked Water Quality Actions by Parameter





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ECOSYSTEM FUNCTIONALITY CATEGORIES BY SUB-WATERSHED

Chelan/WRIA 45 Implementation Plan/WA

Drawn: SJG	Revison: 0	Date: Mar. 28, 2008	Figure: 3-5

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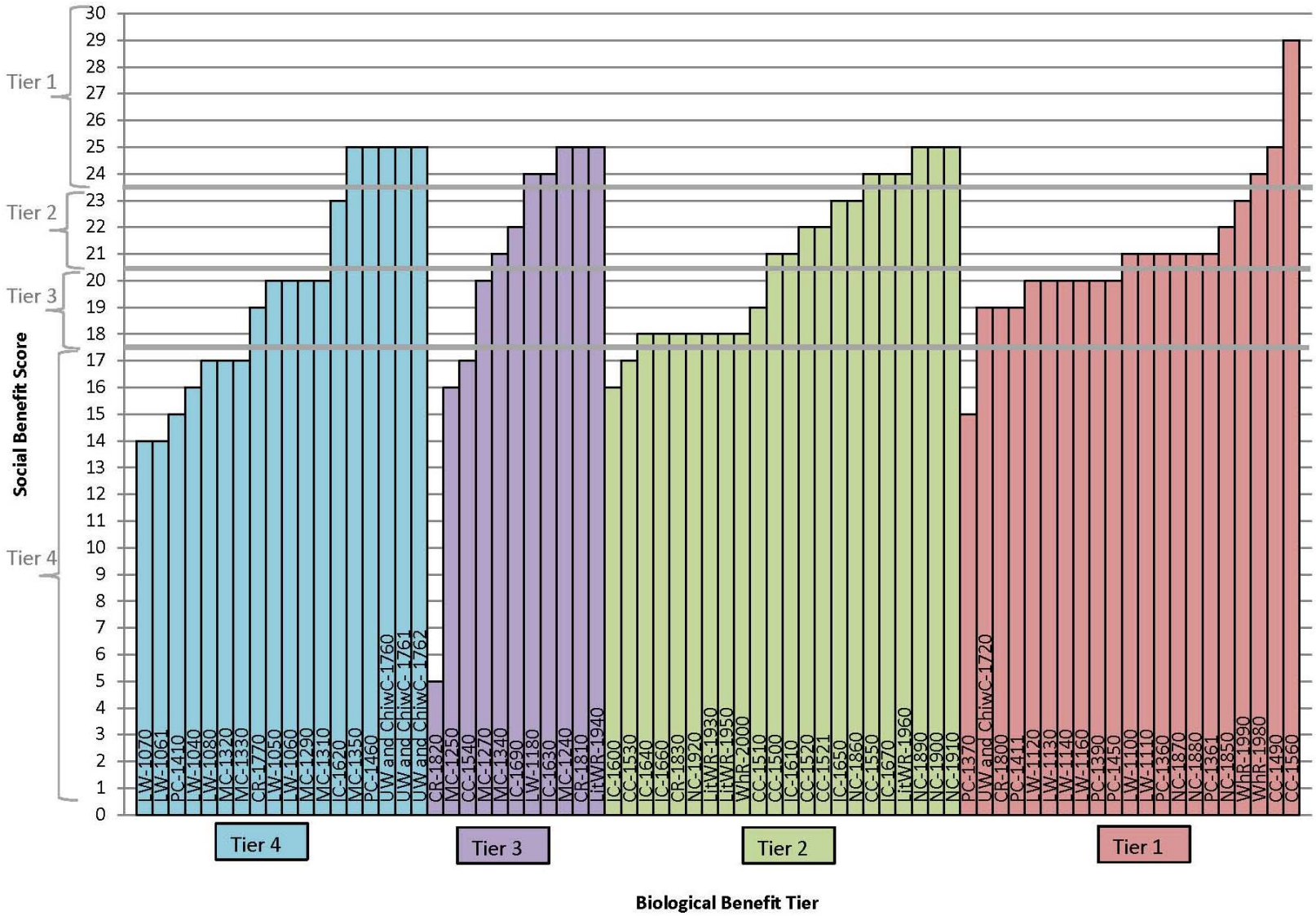
Golder Associates and Dally Environmental

Figure 3-6. All Social Benefit and Biological Benefit Ranked Habitat Actions



APPENDIX A

ACTION TABLES WITH RANKING

WATER QUANTITY/ISF/STORAGE/GROWTH AND LANDUSE

Appendix A

Action Tables with Ranking: Water Quantity/ISF/Storage/Growth and Land Use

Action Name	Action Description	Overall Benefit 20 points	Feasibility /Complexity 10 points	Community Support 10 points	Total Score	Tier	Implementation Notes and followup	Responsible Entity	Status
Water Resource Management Strategy Actions									
WRMS-1	Recommends that the State Department of Ecology adopt, in rule, the new water resource management strategy for WRIA 45, including the management flows (revised instream flows) at specified control points, the water reserve, and maximum allocations. The management flows, water reserve and maximum allocation are outlined in more detail in Sections 4.4 through 4.6.	--	--	--	--	--	--	Ecology	Completed as of December 2007
WRMS-2	Recommends that the Planning Unit or future implementing body in WRIA 45 be involved with Ecology, in any scoping, study planning, study implementation, alternatives analysis, negotiations or rule development if Ecology undertakes instream flow or related water management studies or rulemaking in the watershed.	--	--	--	--	--	--	Ecology, WWPU	No longer relevant; rule codified.
WRMS-3	The WWPU with Chelan County taking the lead role will participate in the development and implementation of an adaptive management process to support this water resource management strategy. The process should address flexibility in the distribution of the reserve across the WRIA. The details of the adaptive management process will be determined as part of Phase IV Implementation.	--	--	--	--	--	--	Chelan County, WWPU	Process, discuss in text
WRMS-4	**Continue Gaging throughout the watershed** to support the new instream flow rule. See specifically 4-a, 4-b, 4-c and 4-d per the watershed plan. **WRMS-4a:** Recommends that Ecology continue to support monitoring at all existing stream gages in the Wenatchee Watershed. Ecology and partners must ensure that the gages and streamflow data are well maintained. Updated data should be made available on the Ecology website in a timely manner for all gages managed by Ecology. **WRMS-4b:** Encourages the USGS to continue to maintain USGS gages in the watershed to support implementation of this water resource management strategy. **WRMS-4c:** Recommends a new stream gage be established at the existing control point on the Icicle Creek. Details will be determined during Phase IV, Implementation. **WRMS-4d:** Review the gage location on the Chiwawa River as related to the impacts on flows from withdrawals.	19	7	9	35	1	--	Ecology, USGS	Ranked
Water Quantity Actions									
QUANT-1	Develop recommendations for Ecology regarding the processing of new water right applications and applications for water right changes and transfers in WRIA 45. Create the recommendations through a collaborative approach between the Planning Unit and the Chelan County Water Conservancy Board, and base them on knowledge of water availability, allocation and flows; consistent with the proposed instream flow rule and resulting reservation and maximum allocation requirements for sub-watersheds. Recommendations may include data requirements necessary to evaluate the impacts of an application on surface and groundwater, areas of concern, policy regarding changes and transfers (may link to land use conversions or incentives for agricultural preservation). Recommendations should also consider facilitation of water right transfers or changes that will result in new water for a reservation in flow impaired sub-watersheds such as Mission and Chumstick Creeks.	--	--	--	--	--	--	WWPU and Chelan Water Conservancy Board	WWPU Recommendation Table
QUANT-2	Request additional Ecology staff time from the legislature to process WRIA 45 water rights. (Focus may be transfers or new applications).	--	--	--	--	--	--	Ecology	WWPU Recommendation Table
QUANT-3	Ecology should enforce existing regulations and policies concerning water rights and use.	--	--	--	--	--	--	Ecology	WWPU Recommendation Table
QUANT-4	Provide incentives for conserving water rather than using it to avoid losing it. Encourage efficiencies through current water law using tools such as water trusts and/or other innovative techniques. Consider the Irrigation Efficiencies Program, and other incentives programs offered by the state and other entities. Criteria for participation include a demonstration of financial need and environmental benefit, a minimum 10 year lease of the conserved water to the Trust Water Program, and the public investment in the project not exceeding 85% of the total cost. In general, the state offers financial programs and incentives to conserve when there is a public benefit. In many cases, dedication of the conserved water to instream flows has been the legislature's preferred means of securing the public benefit.	--	--	--	--	--	--	Chelan County, Irrigation Districts, Canal Companies, other Agriculture. Assistance by Ecology	WWPU Recommendation Table Recommendation to implementing entities to explore the trust program
QUANT-5	Consider Ecology's Trust Water Program as an option to temporarily safeguard water rights during times of non-use or reduced use while satisfying the needs of beneficial uses in the watershed. Develop strategies for using trust water to safeguard water that may be used in the future to support a more water-intensive crop type or conversion from agriculture to residential. Use of this program is consistent with the proposed water resource management strategy as described in Section 4.0.	--	--	--	--	--	--	Chelan County, Irrigation Districts, Canal Companies, other Agriculture. Assistance by Ecology	WWPU Recommendation Table; Recommendation to implementing entities to explore the trust program
QUANT-6	Develop an administrative structure for a water bank for WRIA 45. Section 5.1.3 introduces water banks; however, the details of the administration of a water bank in WRIA 45 will be determined in Phase IV, Implementation.	18	4	6	28	3	Funding in process	WWPU, Chelan County	Ranked

Appendix A

Action Tables with Ranking: Water Quantity/ISF/Storage/Growth and Land Use

Action Name	Action Description	Overall Benefit 20 points	Feasibility /Complexity 10 points	Community Support 10 points	Total Score	Tier	Implementation Notes and followup	Responsible Entity	Status
QUANT-7	Chelan County or other entity with agency funding assistance will investigate water rights for purchase or lease in WRIA 45. The County will seek funding from Washington Water Trust, Washington Rivers Conservancy, BPA, USBOR, NPCC, Ecology and others. Water rights that are purchased or leased can be used to extend the water reservation while adhering to a "no net impacts" standard. Investigate and Purchase to offset reserve	18	5	6	29	2	note that ChumQuant-12, Peshastin QUANT-4, and MissionQUANT-8 should be ranked as part of QUANT -7 Concerns about end use of info. Action assumes Investigate and Purchase water rights Work will begin in Mission and Chumstick under Ecology funding for water forum admin.	Chelan County, funding Entities could include: BPA, WWT, WRC, BOR, NPCC, Ecology, others	Ranked
PeshastinQUANT-4	Evaluate and institute programs to increase instream flows through water acquisitions, leases, and transfers.	18	5	6	29	2			Ranked
ChumQUANT-12	Chelan County or other entity with agency funding assistance will investigate water rights for purchase or lease as part of the mitigation and enhancement strategy for Chumstick Sub-watershed. The County will seek funding from BPA, Ecology, Washington Rivers Conservancy, Washington Water Trust, and others. As water rights are purchased or transferred for use in the Chumstick reserve to meet a "no net impact" standard, the first purchase(s) will credit the 0.043 cfs interim reserve, then the additional 0.09 cfs will be available for forecasted growth as it is purchased. Consider information from adjudication records (1982-1984) when investigating water rights for purchase or lease.	18	5	6	29	2			Ranked
MissionQUANT-8	Chelan County or other entity with agency funding assistance will investigate water rights for purchase or lease as part of the mitigation and enhancement strategy for Mission Sub-watershed. The County will seek funding from BPA, Ecology, Washington Rivers Conservancy, Washington Water Trust, and others. As water rights are purchased or transferred for use in the Mission reserve to meet a "no net impact" standard, the first purchase(s) will credit the 0.03 cfs interim reserve, then the additional 0.09 cfs will be available for forecasted growth as it is purchased.	18	5	6	29	2			Ranked
QUANT-8, QUANT-9, ChumQUANT-5, MissionQUANT-3	**QUANT-8 and QUANT-9:** Track Water Availability and Use: Develop and administer reservation accounting system and verify per household water use factors - see following actions: **QUANT-8**: Chelan County Natural Resource Department will develop and administer a monitoring program to assess actual domestic water use to verify the 380 gpd per household assumption used to debit the reservation and to adjust the amount of water remaining in the reservation at five year intervals, or more frequently if the number of wells drilled or building permits granted indicate that growth is occurring more rapidly than projected in any sub-watershed. These assessments will be conducted based on a statistical sample of new domestic water users (single domestic, group domestic and municipal water use and associated lawn and garden irrigation (some with separate irrigation, some without), some with stock, etc.). Metering data will be incorporated into the water use audit and the accounting system. See the recommended action in the Plan for more details. **QUANT-9**: Reservation accounting will include the tracking of new exempt wells by Chelan County through the building permit process, septic approval through the Chelan-Douglas Health District (CDHD), tracking new domestic and municipal water rights granted by Ecology and tracking well drilling permits as issued by Ecology. The mechanism for tracking the permitted uses will be determined as part of Phase IV, Implementation. Chelan County is currently developing a method for tracking new permit-exempt wells in WRIA 46. This should also be considered for WRIA 45. **ChumQUANT-5:** Ecology and Chelan County to implement reservation conditions as follows: One third (0.043 cfs) of the 0.13 cfs projected 2025 water needs is available for growth for three years after rule adoption. Allocation of the remainder of the reserve would be considered only after completion of additional instream flow assessments (ChumQUANT-2) and a cumulative impacts study (ChumQUANT-3, 6) and would be subject to appropriate conditions and limitations based on the result of those assessments (ChumQUANT-7). If, after completion of the cumulative impact study, Ecology determines that the cumulative effects of domestic water uses negatively affect water available for instream flows, Ecology will consider allowing only in-house water use from the reservation. If after 3 years, water rights are not purchased or leased to cover the interim reserve of 0.043 cfs or conservation measures that provide additional water are not implemented, Ecology would close the Chumstick Sub-watershed to further appropriation on a seasonal basis, and existing outdoor water use established subsequent to the adoption of WAC 173-545 could be curtailed when flows are not met. Note that the City of Leavenworth will debit any new water from the Lower Wenatchee Reserve and not the Chumstick Reserve. **MissionQUANT-3:** One quarter (0.03 cfs) of the 0.12 cfs projected 2025 water needs is available for growth for two years after rule adoption. If, after two years, water rights are not purchased or leased to cover the interim reserve of 0.03 cfs or conservation measures that provide additional water are not implemented, Ecology would close the Mission Sub-watershed to further appropriation on a seasonal basis, and existing outdoor water use established subsequent to the adoption of WAC 173-545 could be curtailed when flows are not met. All water allocated to the City of Cashmere will be debited to the Lower Wenatchee Reserve and not to the Mission Reserve.	18	8	9	35	1	Note that ChumQUANT-5 and MissionQUANT-3 should be ranked as part of QUANT-8 and QUANT-9: all are related	CCNRD; Ecology, Chelan County	Ranked. Mission QUANT-3 done in instream flow rule and forum process. In Process. Funding secured to develop reservation accounting and metering plan. Grant timeline 2-08 thru 6-09

Appendix A

Action Tables with Ranking: Water Quantity/ISF/Storage/Growth and Land Use

Action Name	Action Description	Overall Benefit 20 points	Feasibility /Complexity 10 points	Community Support 10 points	Total Score	Tier	Implementation Notes and followup	Responsible Entity	Status
QUANT-9a	Chelan County Natural Resource Department will track new exempt wells through the building permit process and will coordinate with the CDHD. A joint city/county process will need to be implemented to assist the county in tracking any building permits requiring exempt wells that are issued by other cities (if applicable) within the watershed.	--	--	--	--	--	--	CCNRD, CDHD, and possibly cities	Ranked as part of QUANT-9
QUANT-9b	New rights that are granted by Ecology for domestic water uses will be tracked by CCNRD. The mechanism for tracking the new permitted uses that will debit the reserve will be determined as part of Phase IV, Implementation.	--	--	--	--	--	--	CCNRD, Ecology	Ranked as part of QUANT-9
QUANT-9c	Long-term funding for tracking is required.	--	--	--	--	--	--	CCNRD and potential funding agencies	Ranked as part of QUANT-9
QUANT-10, ChumQUANT-9, MissionQUANT-6	**QUANT-10**: The Planning Unit recommends metering be required for all new uses eligible under the reserve. The Planning Unit will further define responsible entities, and staffing, budget and funding considerations of the metering program as part of Phase IV, Implementation. Chelan County, CDHD, Ecology, utilities, and others will work together to structure the program. The following should be addressed as part of phase IV: **ChumQUANT-9:** Metering of all new uses covered under the Chumstick reserve (includes all new domestic uses). **MissionQUANT-6:** Metering of all new uses covered under the Mission reserve (includes all new domestic uses).	19	5	5	29	2	Funded through Ecology grant to develop reservation accounting and metering plan	WWPU	Ranked Funded to develop metering plan by June 30, 09
QUANT-11 and QUANT-20c	**QUANT-11**: Undertake hydrogeologic studies to assess the influence of groundwater withdrawals on surface water. Identify funding for this study and responsible parties (WWPU to identify sub-areas for study, responsible entity as part of Phase IV, Implementation). **QUANT-20c:** There is a need to better understand the groundwater – surface water interaction in the watershed. Formalize studies to address this issue.	10	6	9	25	4	Study. Funding in process for Mission and Chumstick. Rank QUANT-20c with QUANT-11 - similar actions/studies	CCNRD, other entities	Ranked, In process for Mission and Chumstick
QUANT-12	Funding should be requested to survey (using GPS) private wells. The CDHD should investigate collaborating with Ecology to include these new data in the water well report log database. Recommend that the county, health district, and Ecology work together to identify, log and provide oversight of exempt wells. As part of this oversight responsibility, the CDHD should work with DOH to survey wells with greater than 3 connections. Chelan County has already conducted a GPS survey and evaluation of Group A systems (> than 14 connections).	10	5	6	21	4	Request funding and implement action	CDHD, Chelan County with Ecology	Ranked
QUANT-13	Provide public education as to the roles, responsibilities and regulations pertinent to exempt wells, and encourage the proper entities to enforce/implement (CDHD, DOH, Ecology, County).	13	9	9	31	2	public education	CDHD, DOH, Ecology, County	Ranked
QUANT-14	The well consolidation process addressed in RCW 90.44.105 provides credit to a water service provider for abandoned and/or decommissioned exempt wells. This statute presumes a credit of 800 gpd/well unless an alternative minimum is established by Ecology in consultation with DOH or there is credible evidence of non-use. Information on this RCW should be clarified and provided to Group A purveyors in the watershed.	10	9	9	28	3	This action is already formally in place under the RCW. Requires further clarification and disseminating information to Group A water purveyors.	Ecology, Chelan County, Water Systems	Ranked
QUANT-15 (includes 15a - 15f)	**QUANT-15**: As part of Phase IV, Implementation, Chelan County and cities should develop policies that can be used to ensure efficient use of water in the event of a land division or new development. These include: 15a - 15 f (develop policies and public education). **QUANT-15a:** For land division applications that have shares in an irrigation district, develop policies requiring that the developer provide tie-ins to the irrigation box; ensure easements; deliver water to parcels, where practicable; and form a Homeowners Association for residential uses. Encourage Irrigation Districts to work with the county and cities to extend infrastructure and irrigation water service where practicable. **QUANT-15b:** For land division applications on property with individual water rights, Chelan County should develop policies that encourage the developer to provide residential tie-ins to the water source for residential irrigation purposes. **QUANT-15c:** Encourage cities and Chelan County to develop policies that encourage conservation measures for outdoor water use as a condition of subdivision approval (eg., drought tolerant landscaping, maximum lawn size, stormwater collection systems, residential irrigation system installation). Encourage use of small scale storage, rain barrels, for outdoor irrigation. **QUANT-15d:** Encourage cities to develop policy statements that address transfer of water rights from private water right holders in the event of a land use conversion. For example, the City of Cashmere has policies in place that require water rights to be transferred to the City upon land division/service provision by the City's system. This policy helps preserve the City's ability to serve future users within the UGA with water. **QUANT-15e:** Provide public information that encourages actions QUANT-15a through QUANT-15d, and explains the benefits (provide this information during subdivision application or preliminary plat comment period). **QUANT-15f:** Encourage cluster development, and group domestic over single domestic systems to increase water use efficiency. Explore encouraging group domestic over single domestic use as part of the approval process for land division applications. Further develop this recommendation as part of Phase IV, Implementation.	19	6	6	31	2	--	Chelan County, cities, other water purveyors, also CDHD	Ranked

Appendix A

Action Tables with Ranking: Water Quantity/ISF/Storage/Growth and Land Use

Action Name	Action Description	Overall Benefit 20 points	Feasibility /Complexity 10 points	Community Support 10 points	Total Score	Tier	Implementation Notes and followup	Responsible Entity	Status
QUANT-16	Research how different entities in the watershed are implementing conservation measures and acknowledge current efforts. [Note that Leavenworth is metering and employs a rate and fee structure that encourages conservation. Cashmere is currently working on revising their rate structure such that there will be more incentive for conservation.] Encourage additional conservation measures where needed. Encourage incentive based solutions. These may include QUANT-16a through QUANT-16d.	--	--	--	--	--	this is actually outreach, see 16 a - 16d for specifics and rank separately	Chelan County, cities, water purveyors; Chelan County, Irrigation Districts, Canal Companies, other Agriculture. Assistance by Ecology ; Chelan County, Irrigation Districts, Canal Companies, other Agriculture, cities, PUD. Ecology, others	Ranked as part of QUANT-16a through 16d
QUANT-16a	Encourage cities and other water providers to implement a rate and fee structure that promotes conservation (similar to Leavenworth's current program and Cashmere's proposed program).	18	6	4	28	3			Ranked
QUANT-16b	Encourage funding to line canals or implement other delivery system improvements, where appropriate.	18	6	7	31	2			Ranked
QUANT-16c	Encourage the use of reclaimed water (tertiary treatment) for outdoor irrigation, industrial, and commercial use (see Ecology Watershed Guidance).	10	2	4	16	4			Ranked
QUANT-16d and ChumQUANT-11	**QUANT-16d**: As part of Phase IV, Implementation, convene a forum to investigate conservation strategies and how they could be implemented by irrigation districts, ditches and other private companies. Involve utilities, cities, Chelan County and Ecology when appropriate. There is a need to work with members of irrigation districts, ditches and others to determine ways to save water and ensure that water rights are protected into the future. Items of discussion could include alternative rate structures based on purpose of water use; partnerships with cities and utilities; utility coordination during development; tools to conserve water, improve instream flows and protect water rights at the same time; and distribution of public education materials. **ChumQUANT-11:** Encourage conservation and outreach.	18	6	5	29	2			Ranked
QUANT-17	Encourage on-farm efficiencies and implementation of Best Management Practices (BMPs) to encourage water conservation.	15	6	5	26	3	--	Chelan County	Ranked
QUANT-18 and ChumQUANT-11	**QUANT-18:** Encourage the County to provide information and education about water conservation options and fire planning; including: outdoor watering, timing, types of native vegetation that require low water use, lawn size, low flow fixtures, etc. to the new land user. The Municipal Water Law requires that water systems provide education and outreach regarding water conservation. However, water users that are using irrigation ditch water for outdoor use and/or exempt wells will not receive this information. Irrigation systems may also be able to provide materials in monthly billings. The details of this educational program will be determined during Phase IV, Implementation. Realtors should be encouraged to distribute public education materials describing water conservation and efficient water management techniques. **ChumQUANT-11**: Encourage conservation and outreach.	15	8	9	32	1	education	Chelan County	Ranked
QUANT-19	Consider funding storage options from the Storage Assessment. See relevant sub-watershed sections (Section 9.0) for specific storage opportunities as listed in the WRIA 45 Storage Assessment Report.	--	--	--	--	--	May need to revise action to include needs and alternative analyses which considers target instream flow improvements. This action also includes sub-watershed specific storage actions.	Water Quantity/Instream Flow/Storage Subcommittee	Ranked as part of PeshastinQUANT-3, MissionQUANT-4, ChumQUANT-10, IcicleQUANT-1
PeshastinQUANT-3	As part of Phase IV, Implementation, evaluate alternatives that could increase available water for instream and out-of-stream uses. Clearly address specific water needs in the Peshastin and evaluate water conservation, storage, purchase, lease and transfer of water rights, and other alternatives.	18	7	7	32	1			Ranked
MissionQUANT-4	**MissionQUANT-4:**As part of Phase IV, Implementation, evaluate alternatives that could increase available water for instream and out-of-stream uses. Clearly address specific water needs in the Mission and evaluate water conservation, storage, purchase, lease and transfer of water rights, and other alternatives.**MissionQUANT-4a:** Consider storing water in Icicle/Peshastin and use that water to augment flows and provide mitigation water in Mission Creek. **MissionQUANT-4b:** Consider storage opportunities within Mission Sub-watershed .	19	8	7	34	1			Ranked, in process. Funded through Ecology grant for Mission and Chumstick Water Forum. Grant timeline 4-08 thru 6-09
ChumQUANT-10	As part of Phase IV, Implementation, the Planning Unit and the Chumstick Forum (with Chelan County as lead) will evaluate alternatives that could increase available water for instream and out-of-stream uses. Clearly address specific water needs in the Chumstick and evaluate water conservation, storage opportunities, purchase, lease and transfer of water rights, water transfer from other sub-watersheds, and other alternatives. Consider conjunctive use and evaluate pumping from the deep aquifer to augment flows in the Chumstick. Investigate storage options where stored water could be used to augment flows and provide mitigation water.	19	7	7	33	1			Ranked, in process. Funded through Ecology grant for Mission and Chumstick Water Forum. Grant timeline 4-08 thru 6-09
IcicleQUANT-1	As part of Phase IV, Implementation, evaluate alternatives that could increase available water for instream and out-of-stream uses. Clearly address specific water needs in the Icicle and evaluate water conservation, storage, purchase, lease and transfer of water rights, and other alternatives.	18	6	7	31	2	--	Water Quantity/Instream Flow/Storage Subcommittee	Ranked

Appendix A

Action Tables with Ranking: Water Quantity/ISF/Storage/Growth and Land Use

Action Name	Action Description	Overall Benefit 20 points	Feasibility /Complexity 10 points	Community Support 10 points	Total Score	Tier	Implementation Notes and followup	Responsible Entity	Status
QUANT-20	CCNRD or other entities to administer studies on water resources throughout the watershed, especially in areas where inadequate data exist to make decisions regarding future water use (eg., Chumstick, Northside Tributaries).	--	--	--	--	--	Studies. Specifics in Chumstick quantity actions. Rank each study separately.	CCNRD, other entities	Ranked as part of QUANT-20a and 20b
QUANT-20a	Water budgets have been prepared by sub-watershed. These budgets indicate total water use by use type (eg., residential, industrial, commercial, agricultural, fish propagation), but do not provide estimates of consumptive use. A consumptive crop irrigation requirement is presented. Further this study by defining the consumptive portion of the water use in the water budgets. Incorporate water usage rates with varying efficiencies for each water use type. Use this information to develop appropriate and useful water use efficiency requirements on lands that have been converted from agricultural to residential.	11	5	7	23	4			Ranked
QUANT-20b	Study groundwater in specific areas of the watershed (eg., Mission Creek, Lower Chumstick/Eagle Creek area, Monitor area). Finalize the areas for study as part of Phase IV, Implementation.	14	5	8	27	3			Ranked. In Process
QUANT-21	Evaluate the consumptive portion of reserved water uses and determine if recharge credit should be included in the accounting of the reservation.	15	6	8	29	2	Study	?	Ranked
PeshastinQUANT-1	Evaluate passage requirements for fish immediately below the Peshastin Irrigation District diversion (addressing bypass reach/piping).	--	--	--	--	--	--	?	In process
PeshastinQUANT-2	Consider other instream projects that improve habitat.	--	--	--	--	--	Recommendation?	?	Ranked with habitat actions
ChumQUANT-1	Chelan County as lead (with support from Ecology), will convene a Chumstick Water Forum to guide data collection, oversee the proposed water management strategy, and help develop mitigation measures.	--	--	--	--	--	--	Chelan County with support from Ecology	Funded and In Process
ChumQUANT-2	Chumstick Water Forum to assist in developing a data collection plan to monitor surface water flows (specify location) and develop management flows.	18	6	8	32	1	Study. Data collection plan in ChumQUANT-2 is complete. Still need to monitor and develop flows for the Chumstick. Future strategy will include development of management flows.	Chumstick Water Forum	Ranked, in process. Funded through Ecology grant for Mission and Chumstick Water Forum. Grant timeline 4-08 thru 6-09
ChumQUANT-3	Chumstick Water Forum, with assistance from Chelan County and Ecology, to conduct groundwater monitoring to understand hydraulic continuity and overall impact of exempt wells on groundwater levels and streamflows.	18	6	8	32	1	Study. Funding in process	Chumstick Water Forum with assistance from Chelan County and Ecology	Ranked, In Process Grant timeline 2-08 thru 6-09
ChumQUANT-4	Recommend that Ecology close the Chumstick Sub-watershed for an interim period of three years while data are collected and alternatives are assessed. Uses that are not subject to the closure (and can continue throughout the three year interim closure) include: fire suppression, domestic use from wells, stock water uses, and seasonal storage, pending evaluation by the Chumstick Water Forum and Ecology. These exempt uses would be limited to a total of 0.043 cfs while studies are being performed to determine future water availability in the Chumstick and a future strategy is assessed. Seasonal storage opportunities and other alternatives in Chumstick will be evaluated by Ecology and the Chumstick Water Forum through the water right application process on a case-by-case basis during the three year interim period. Storage opportunities in Chumstick will be addressed as part of the Chumstick strategy after conclusion of the Forum's three year process and coordinated with the WRIA 45 Multi-Purpose Storage Assessment. This interim closure will be re-evaluated at the end of the three year period by the Chumstick Forum and Ecology. Note that water storage tanks as included in the Chumstick Community Wildfire Protection Program are exempt from this closure.	--	--	--	--	--	--	--	Complete Done in instream flow rule and ongoing Forum process
ChumQUANT-6	A cumulative impact analysis of permit exempt use and uses associated with permits and claims approved since 1983 will be initiated by Ecology as authorized under the 1983 flow rule. Chelan County will partner with Ecology in this study. The cumulative impacts assessment will help to determine whether Ecology will curtail outdoor domestic water use of wells installed after 1983, and whether Ecology will close the Chumstick Sub-watershed to outdoor water use in the future.	18	6	8	32	1	Study. Funding in process	?	Ranked. In process. Grant timeline 2-08 thru 6-09
ChumQUANT-7	Chumstick Forum, Chelan County and Ecology to re-evaluate a proposed strategy for the Chumstick in three years after rule adoption, when new monitoring data have been collected and assessed and cumulative impact analysis is complete. Consider allowing group domestic groundwater use of deeper aquifer only as part of the Chumstick strategy addressed by the Forum.	18	6	8	32	1	Study. Data collection plan in ChumQUANt-2 is complete. Still need to monitor and develop flows for the Chumstick. Future strategy will include development of management flows.	?	Ranked. In process. Grant timeline 4-08 thru 6-09
ChumQUANT-8	Chelan County will evaluate alternatives to improve fish passage at the North Road culvert, and further pursue replacement of culverts upstream of North Road on Chumstick Creek.	--	--	--	--	--	--	Chelan County	See Habitat Section for project ranking. Funding in process.
ChumQUANT-11	Encourage conservation and outreach.	--	--	--	--	--	--	?	See QUANT-16d and 18 for ranking

Appendix A

Action Tables with Ranking: Water Quantity/ISF/Storage/Growth and Land Use

Action Name	Action Description	Overall Benefit 20 points	Feasibility /Complexity 10 points	Community Support 10 points	Total Score	Tier	Implementation Notes and followup	Responsible Entity	Status
MissionQUANT-1	Chelan County as lead (with support from Ecology), will convene a Mission Creek Forum to assess options to provide water for future growth through the purchase, lease or transfer of existing, valid water rights or from storage (storage opportunities within Mission Sub-watershed or through the Peshastin and/or Icicle Irrigation districts). This will be conducted for the purpose of providing an uninterruptible supply for domestic, municipal and stock water uses. During Phase IV, Implementation, the Mission Creek Forum will determine whether the strategies for Mission are relevant to Brender Creek, and consider assembling separate strategies to address local instream flow concerns and conditions for Brender Creek, if appropriate. Within two years of rule adoption, the Forum will have developed opportunities and researched funding opportunities for these alternatives.	--	--	--	--	--	--	Chelan County, with participation from Ecology	Funded and ongoing
MissionQUANT-2	As part of Phase IV, Implementation, evaluate alternatives that could increase available water for instream and out-of-stream uses. Clearly address specific water needs in the Mission Creek and evaluate water conservation, storage, purchase, lease and transfer of water rights, water from other sub-watersheds, and other alternatives as appropriate.	--	--	--	--	--	--	--	Ongoing
MissionQUANT-5	Consider storage opportunities within Mission Sub-watershed (See Section 5.5).	--	--	--	--	--	--	--	See QUANT-19
MissionQUANT-7	Evaluate out-of-kind mitigation and enhancement projects over time, if appropriate. Identify habitat and water quality improvements to mitigate additional reserve water.	13	5	7	25	4	Coordinate with project implementation through the Habitat Subcommittee	?	Ranked
NSTQUANT-1	Future water supply availability should be discussed with Chelan County Public Utility District (PUD) to determine whether they have the capacity and infrastructure to provide backup supply. The East Bank Aquifer Regional Water Supply will only be considered as a source of water for this area if approved by the owners of the Regional Water Supply.	9	4	5	18	4	--	Chelan County PUD, others?	Ranked
NSTQUANT-2	PUD and Chelan County to consider pumping from Wenatchee Valley and a potential PUD hookup in Nahahum.	9	4	5	18	4	--	PUD, Chelan County	Ranked
NSTQUANT-3	Chelan County and Ecology to provide public information regarding water limitations in Northside Tributaries (Fact Sheets).	12	10	8	30	2	--	Chelan County, Ecology	Ranked
NSTQUANT-4	Chelan County and Ecology to work with local community to design and implement a groundwater monitoring program in existing wells to determine trends in groundwater levels.	10	5	8	23	4	--	Chelan County, Ecology	Ranked
NSTQUANT-5	Alternatives Analysis for Northside Tributaries to include options such as use of out-of-basin water, pumping from lower Wenatchee reserve, PUD hookup, deep groundwater, storage, and water right purchase.	12	6	8	26	3	--	?	Ranked
Growth and Land Use Actions									
GLU-1	As part of reservation accounting, establish a resource base for decision-makers to use to consider technical water resource information when making land use change decisions and when considering land use permit applications. This should include:	--	--	--	--	--	--	CCNRD	Ranked as GLU-1a, GLU-2 and GLU-1b
GLU-1a and GLU-2	**GLU-1a:** Chelan County Natural Resource Department (CCNRD) will provide technical input regarding the reservation and eligible uses into the decision making process for consideration by city and county land use decision makers. **GLU-2:** As part of Chelan County's zone change process, water supply and water resource information is available for use from CCNRD.	18	9	8	35	1	rank GLU-1a and GLU-2 together Include formal meeting with Community Development and Cities.	CCNRD	Ranked
GLU-1b	Water resource and supply related data for the watershed will be maintained in a database by CCNRD (eg., a water supply dataset including water system boundaries, an exempt well tracking system, on-going tally of water rights and water use per water system, instream flow and groundwater level data, an assessment of whether current water rights can service full build-out based on current zoning, etc.). CCNRD would update this information as a larger population is served in the future and ensure the information is available in a format that is easily understood by the public.	15	5	7	27	3	Wenatchee Water Resource Data Base.	CCNRD	Ranked
GLU-3	As there is urban growth in the WRIA, ensure that water availability is considered in UGA and LAMIRD (Local Area Managed Intense Rural Development) boundary decisions for existing and new UGAs. For proposed Urban Growth Area boundary expansions that are outside the jurisdiction of an existing water service area, the proposal for expansion will include documentation of a water purveyor's intention to provide water, their ability to provide water, or the ability of the development to provide water if it is to be self-served. (Note this is being done in Leavenworth and Cashmere and should be tracked as part of the DIP).	18	9	9	36	1	Track this in the DIP.	Cashmere, Leavenworth, Wenatchee, CCNRD	Ranked
GLU-4	The Wenatchee Watershed Planning Unit is supportive of the goals and intent of the GMA to provide critical area protections, as these are consistent with water quality, quantity and habitat goals of the Wenatchee Watershed Plan and the Watershed Planning Act. The Planning Unit further supports the efforts of local jurisdictions to implement non-regulatory programs that protect critical areas and is interested in exploring potential partnerships in these efforts.	--	--	--	--	--	--	WWPU	Recommendation and Statement of Support to local jurisdictions
GLU-5	Data, protection measures and strategies relating to critical area protections should be documented as part of the watershed planning process. Encourage local jurisdictions to utilize the data, protection measures and strategies identified in the 2514 Wenatchee Watershed Plan in the development and update of critical area protections under GMA. Ensure that this information is readily available to local jurisdictions. **(See also GLU-1b)**	--	--	--	--	--	--	CCNRD	Recommendation to local jurisdictions

Appendix A

Action Tables with Ranking: Water Quantity/ISF/Storage/Growth and Land Use

Action Name	Action Description	Overall Benefit 20 points	Feasibility /Complexity 10 points	Community Support 10 points	Total Score	Tier	Implementation Notes and followup	Responsible Entity	Status
GLU-6	The protection measures and strategies identified in the 2514 Watershed Plan should be considered by local governments as non-regulatory mechanisms to protect critical areas watershed wide. These approaches include: • Land protection measures such as easements, leases, purchases and other creative measures, such as transfer of development rights to protect remaining floodplain and riparian habitat • Wetland restoration • Fish passage improvements; removal of fish passage barriers • Restore channel function • Reconnect disconnected habitat areas • Restore floodplain function • Maintain forest roads • Control and eradicate noxious weeds	--	--	--	--	--	Don't rank or recommend. Defer to Habitat	Local Governments	Not ranked. Deferred to Habitat Subcommittee. See Habitat work schedule

APPENDIX B

ACTION TABLES WITH RANKING

WATER QUALITY

Original Action Number	SIS "Action"	New, Refined Action Number	New Action That Can be Ranked	Human Health Concerns	Number of Parameters/Plan elements	Source Control	Probability of Continued Benefit, etc	Project Complexity	Project Refinement	Anti-degradation	Community Awareness	Political/ Economic Impacts Applied to DO/pH	Total Score	Tier	Notes	Status
				0 or 20	5-20	0-20	0-20	0-20	0-10	0 or 5	0-5	0-10				
				1	2	3	4	5	6	7	8					
Temperature Actions																
QUAL T-1	CCCD should continue to oversee and implement recommendations in the Wenatchee River Watershed Action Plan, ensure other entities are also implementing voluntary actions in the Watershed Action Plan, and encourage continued funding of these efforts.	QUAL T-1	No Change	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation
QUAL T-2	Ecology should continue to work with the local watershed planning group through both implementation of the current TMDL, and on future TMDLs if further listings arise.	QUAL T-2	No Change	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation
QUAL T-3	Ecology should continue to work with the WWPU to assist in the identification of opportunities to fund future projects	QUAL T-3	No Change	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation
QUAL T-4	Encourage the WWPU and its other subcommittees (Water Quantity, Instream Flow, Habitat, and Growth and Land Use) to use the information in the TMDL technical reports and SIS along with their conclusions, recommendations, and actions for a more holistic approach to restoration, preservation, and enhancement of the watershed for all beneficial uses.	See T-18a, 18b and 18c.	Suggest Deletion and Replace with new T-18a, b, c.	--	--	--	--	--	--	--	--	--	--	--	Suggest deletion and replace with T-18 a, b, c	Replaced with new T-18a, b, c
QUAL T-5	Actions to improve shade near surface waters should be implemented, where feasible. Shade management practices should involve the development of mature riparian vegetation. The WQTS should use the information provided in this TMDL document, the temperature technical reports, and WWPU studies (FLIR, LIDAR, PHABSIM, etc.) to implement a prioritized list of locations and plans for establishing riparian vegetation. Associated monitoring should be planned and implemented over time, as site potential riparian vegetation requires many years to become established. Projects in the upper watershed should be prioritized as it has the most potential for shade improvements and water temperature reductions. The WQTS should coordinate with the WWPU's other subcommittee conclusions, recommendations, and actions to reduce water temperatures.	QUAL T-5a	Identify and prioritize locations for riparian plantings for shade. Base on LIDAR, Temp modeling and TMDL tech report, FLIR	0	20	20	17	20	10	0	5	--	92	1	--	Ranked
		QUAL T-5b	Opportunistic upper watershed riparian plantings - increase shade on private land	0	15	10	10	18	3	5	5	--	66	3	--	Ranked
		QUAL T-5c	Using list from 5a, implement riparian plantings in targeted areas (use voluntary programs from QUAL T-8)	0	20	20	14	15	3	0	5	--	77	3	--	Ranked
QUAL T-6	For USFS managed land, the riparian reserves prescriptions in the Northwest Forest Plan should continue to be maintained for the establishment of site potential riparian vegetation, where appropriate. The USFS should be the primary implementing agency. The WQTS and the Department of Ecology should coordinate with the USFS.	QUAL T-6	Encourage the USFS to increase shade in the upper watershed. "Recommend that for USFS managed land, the riparian reserves prescriptions in the Northwest Forest Plan continue to be maintained for the establishment of site potential riparian vegetation, where appropriate. The USFS should be the primary implementing agency. The WQTS and the Department of Ecology should coordinate with the USFS".	--	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation
QUAL T- 7	For state and privately owned forest land, the riparian vegetation prescriptions in the Forests and Fish Report (Department of Natural Resources, 1999) should be implemented for all perennial streams. Ecology will coordinate with the Department of Natural Resources	QUAL T- 7	Encourage DNR to increase shade on state and privately owned forest land in the upper watershed. "Recommend that for state and privately owned forest land, the riparian vegetation prescriptions in the Forests and Fish Report (Department of Natural Resources, 1999) be implemented for all perennial streams. Ecology will coordinate with the Department of Natural Resources".	--	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation

Original Action Number	SIS "Action"	New, Refined Action Number	New Action That Can be Ranked	Human Health Concerns	Number of Parameters/Plan elements	Source Control	Probability of Continued Benefit, etc	Project Complexity	Project Refinement	Anti-degradation	Community Awareness	Political/ Economic Impacts Applied to DO/pH	Total Score	Tier	Notes	Status
				0 or 20	5-20	0-20	0-20	0-20	0-10	0 or 5	0-5	0-10				
				1	2	3	4	5	6	7	8					
QUAL T-8	For areas that are not managed in accordance with either the Northwest Forest Plan or the Forests and Fish Report, voluntary programs to increase and protect riparian vegetation should be developed, such as riparian buffers and conservation easements. The WQTS and Ecology should work with private forested landowners, agencies, and stakeholders to develop and monitor the projects.	QUAL T-8	Develop new, or support existing, voluntary programs to increase riparian vegetation where needed or protect existing riparian areas on private lands (focus on areas identified in QUAL T-5a)	0	15	15	17	18	9	5	5	--	84	2	--	Ranked
QUAL T-9	Stream temperature is often related to the amount of instream flow, and increases in flow generally result in decreases in temperatures. The WQTS should work with the WWPU and watershed entities to encourage projects that have the potential to increase and protect surface and groundwater flows. Voluntary retirement, purchase, leasing of existing water rights, or other conservation methods to preserve and enhance instream flow should be encouraged. In addition, water storage opportunities that have the potential to increase instream flows during critical periods should be evaluated in regards to their impact on stream temperature.	QUAL T-9a	The WQTS should work with the WWPU and watershed entities to encourage projects that have the potential to increase and protect surface and groundwater flows.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation to Water Quantity Subcommittee to consider temperature
		QUAL T-9b	Pursue voluntary programs to acquire water rights	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation to Water Quantity Subcommittee
		QUAL T-9c	Recommend that the evaluation of impacts of proposed storage projects include temperature effects (evaluate as part of a feasibility study)	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation to Water Quantity Subcommittee
QUAL T-10	Adaptive management activities to control potential channel widening processes should be encouraged. Reductions in channel width are expected as mature riparian vegetation is established. For example, activities that reduce sediment runoff to surface waters from upland and channel erosion can affect channel width and temperatures.	QUAL T-10	Encourage adaptive management activities to control potential channel widening processes (eg., reduction in channel width as mature riparian vegetation is established).	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation as applied to T-5a, T-5b and T-5c
QUAL T-11	Actions to improve hyporheic exchange flows and groundwater-surface water recharge should be identified and implemented to improve the current temperature regime and reduce maximum daily instream temperatures. Factors that influence hyporheic exchange flow include the vertical hydraulic gradient between surface and subsurface waters as well as the hydraulic conductivity of streambed sediments. Activities that reduce instream flows, hyporheic exchange and hydraulic conductivity of streambed sediments can increase stream temperatures, such as drilling of wells along streams and connected ground water reservoirs, and development in the flood plain. The WQTS should work with the WWPU and its subcommittees to identify and implement management activities designed to protect and enhance instream flow and subsurface water exchange with streams. Actions should be identified and implemented to reduce upland and channel erosion and avoid sedimentation of fine materials in the stream substrate.	QUAL T-11	Suggest Deletion and Replace with new T-18a, b, c.	--	--	--	--	--	--	--	--	--	--	--	Suggest deletion and replace with T-18 a, b, c	Replaced with T-18 a, b, c

Original Action Number	SIS "Action"	New, Refined Action Number	New Action That Can be Ranked	Human Health Concerns 0 or 20 1	Number of Parameters/Plan elements 5-20 2	Source Control 0-20 3	Probability of Continued Benefit, etc 0-20 4	Project Complexity 0-20 5	Project Refinement 0-10 6	Anti-degradation 0 or 5 7	Community Awareness 0-5 8	Political/ Economic Impacts Applied to DO/pH 0-10	Total Score	Tier	Notes	Status
QUAL T-12	It is recommended that Ecology continue existing temperature monitoring, and expand the current temperature monitoring program such that it is consistent with flow monitoring actions recommended in the Wenatchee Watershed Plan, WRMS-4a and WRMS-4c.**WRMS-4a**: Recommends that Ecology continue to support monitoring at all existing stream gages in the Wenatchee watershed. Ecology and partners must ensure that the gages and streamflow data are well maintained. Updated data should be made available on the Ecology website in a timely manner for all gages managed by Ecology.**WRMS-4c:** Recommends a new stream gage be established at the existing control point on Icicle Creek. Details will be determined during Phase IV, Implementation (of the Wenatchee Watershed Plan).	QUAL T-12 a	The WQTSC will evaluate current temperature monitoring locations and determine whether existing temperature monitoring locations are adequate to continue to monitor temperature for the TMDL	0	15	20	14	15	10	5	2	--	81	2	CD to take lead. Ecology to assist with assessment of adequacy; Forest Service provide data; Integrate other entity monitoring efforts, summarize existing: WQTS determine adequacy. Includes all education and outreach program components. Includes parts of FC-12, FC-13, FC-6, FC-15, FC-17 and FC-19	Ranked
		QUAL T-12d	Based on the results of T-12a, recommend that Ecology continue existing temperature monitoring.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation to Ecology
		QUAL T-12e	Based on the results from T-12 a, expand the current temperature monitoring program if necessary such that it is consistent with flow monitoring actions recommended in the Wenatchee Watershed Plan, WRMS-4a and WRMS-4c. This includes temperature monitoring at all existing stream gages in the WRIA 45 watershed, and at a new stream gage to be established at the existing control point on Icicle Creek.	--	--	--	--	--	--	--	--	--	--	--	Is the temperature data collected at the streamflow gages able to be used for ongoing temperature data collection for the TMDL? Is it being used, does it meet their standards. Also, need to check where current temperature monitoring is occurring. Ecology to implement.	Recommendation to Ecology
QUAL T-13	The WQTS should work with the WWPU in the development of proposed water storage, irrigation, habitat, and development projects to provide input regarding shade, riparian vegetation, and engineering to reduce water temperatures.	QUAL T-13	Recommend that the WQTS work with the WWPU in the development of proposed water storage, irrigation, habitat, and development projects to provide input regarding shade, riparian vegetation, and engineering to reduce water temperatures.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation
QUAL T-14	To determine the effects of management strategies within the Wenatchee River watershed, regular monitoring is recommended. Continuously-recording water temperature monitors should be deployed from July through August to capture the critical conditions. The following locations should be targeted for a minimal sampling program: Wenatchee River near mouth, Icicle Creek near mouth, Nason Creek near mouth, Peshastin Creek near mouth, and Mission Creek near mouth. Monitoring should be conducted associated with BMPs to track progress toward shade and water quality targets. Water temperature monitoring should be conducted and coordinated with associated BMP projects over time.	QUAL T-14 CHANGE TO T12-b	Based on the evaluation in T-12a, consider continuously-recording water temperature monitors should be deployed from July through August to capture the critical conditions. The following locations should be targeted for a minimal monitoring program: Wenatchee River near mouth, Icicle Creek near mouth, Nason Creek near mouth, Peshastin Creek near mouth, and Mission Creek near mouth.	0	15	20	14	15	10	5	2	--	81	2	--	Ranked

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				0 or 20	5-20	0-20	0-20	0-20	0-10	0 or 5	0-5	0-10				
				1	2	3	4	5	6	7	8					
--	--	QUAL T-14 CHANGE TO T12-c	Effectiveness monitoring associated with BMPs should be conducted to track progress toward shade and water quality targets. Water temperature monitoring should be conducted and coordinated with associated BMP projects over time.	0	11	16	15	17	8	3	3	--	73	3	--	Ranked
QUAL T-15	Funding assistance should be sought from Ecology through its grants and loans programs to implement actions and ongoing monitoring. Other funding sources should be identified and applications submitted to provide funding for ongoing activities. The WQTS will recommend qualified entities to conduct associated monitoring.	QUAL T-15	No Change	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation
QUAL T-16	The WQTS, Ecology, and appropriate entities should work with the Washington State Department of Transportation (WSDOT) to manage paved surface areas near the water bodies covered in this TMDL. Runoff from those areas and the type and extent of vegetation in their right-of-way areas could be significant. The Wenatchee River, Nason Creek and Peshastin Creek all have state highways close to their banks. The management activities in the right-of-way should be informed by the TMDL riparian management strategies. Additionally, the TMDL recommends that as future highway reconstruction projects come up, consideration should be given to alignment changes away from the stream. County and Forest Service road right-of-ways also abut some of the waters in this watershed. Those road management agencies should include riparian management in collaboration with the TMDL.	QUAL T-16a	The WQTS, Ecology, and appropriate entities should work with the Washington State Department of Transportation (WSDOT) to manage vegetation in their right of ways, and runoff from paved surface areas near the water bodies covered in this TMDL. The WQTS and Ecology recommends WSDOT consider moving roads away from streams as future highway reconstruction projects are implemented.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation to DOT
		QUAL T-16b	Recommend that the County and Forest Service include riparian management in collaboration with the TMDL in road right-of-ways.	--	--	--	--	--	--	--	--	--	--	--	See also T-6	Recommendation
QUAL T-17	Ongoing education, outreach, and technical assistance should be provided. Participating entities should coordinate to provide education, outreach, and technical assistance regarding water temperature problems, solutions, and ongoing actions. An education, outreach, and technical assistance component for water temperature should be developed and implemented in the WQIP. Education, outreach, and technical assistance should be linked to all ongoing WQIP actions.	QUAL T-17	Develop and implement an education, outreach, and technical assistance program for the watershed for temperature.	0	15	12	15	18	5	5	5	--	75	3	Somewhat being accomplished by Chelan County NRD Riparian Program. Coordinate between existing	Ranked
QUAL T-18a (new)	new action to replace T-4 and T-11	QUAL T-18a (new)	*Coordinate with Habitat and Water Quantity subcommittees to* identify and prioritize locations that are flow impaired and listed for temperature that could potentially benefit from increased groundwater recharge and increased hyphoreic exchange flows. Base on Temp modeling and TMDL tech report, and stream gaging results.	0	15	20	8	10	10	0	2	--	65	3	a,b,c may already be covered by other committee recommendations	Ranked
QUAL T-18b (new)	CHANGE TO RECOMMENDATION new action to replace T-4 and T-11	QUAL T-18b (new)	Coordinate with Water Quantity/ISF and Habitat Subcommittees to implement opportunistic flow improvements to address temperature.	--	--	--	--	--	--	--	--	--	--	--	deleted "upper watershed"	Recommendation
QUAL T-18c (new)	CHANGE TO RECOMMENDATION new action to replace T-4 and T-11	QUAL T-18c (new)	Using list from 18a, coordinate with the Water Quantity/ISF and Habitat Subcommittees to implement prioritized projects.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation

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				0 or 20	5-20	0-20	0-20	0-20	0-10	0 or 5	0-5	0-10				
				1	2	3	4	5	6	7	8					
Fecal Coliform Actions																
QUAL FC-1	Identify sources of fecal coliform (FC) pollution to Mission Creek subwatershed, utilizing the FC technical study. Identify human and nonhuman sources and/or failing on-site septic systems. Plan and implement corrective actions. The Chelan-Douglas Health District (CDHD) should address failing septic systems. Other entities should address manageable sources of FC pollution as appropriate. Assessments should include the following areas (See SIS):	QUAL FC-1a	Make priority list for addressing areas of fecal coliform contamination based on water quality technical report (1). Also includes areas in the Chumstick subwatershed as specified in QUAL FC-2	--	--	--	--	--	--	--	--	--	--	--	See completion table for priority by reach	Completed (see Completed Actions Table for Priority list)
	a. Mission Creek between Binder Road (RM 1.2) and Creekside Place (RM 0.9). **b.** Mission Creek above RM 5.1, RM 3.8, and RM 1.2. **c.** A pipe discharge just below the Tripp Canyon road crossing of Mission Creek (RM 3.0) **d.** Mission Creek culvert at Pioneer Street that discharges from the City of Cashmere stormwater drain system and apparently runs in the dry season due to nearby seepage infiltration (RM 0.7) **e.** Mission Creek culvert at Pioneer Street that diverts irrigation management return flows from the Peshastin Irrigation Canal to Mission Creek (RM 0.7) **f.** The Peshastin Irrigation Canal discharge to the stormwater collection system to confirm it is not a source to Mission Creek (RM 0.7) **g.** The Peshastin Irrigation District drain that returns water to Brender Creek (RM 0.1) **h**. Yaksum Creek (RM 0.3 and RM 2.5), and two culverts at the Pioneer Street bridge crossing (RM 0.1 and RM 0.6) **i**. Brender Creek between river mile 1.2 (where Brender Creek first crosses Pioneer Road) and river mile 2.5. Investigate suspect domestic on-site septic systems in this reach (RM1.2 to RM 1.6) for proper functioning. A walking inspection of the creek should be conducted to look	QUAL FC-1b	Identify sources of FC in targeted reaches based on prioritization in 1a and additional testing if needed (eg., monitoring of wells in areas of fecal coliform exceedences) and work with landowners to mitigate sources (also includes FC-5).	20	12	20	20	9	8	0	5	--	94	1	CDHD Discussion Needed	Ranked
		QUAL FC-1c	Identify other opportunities and work with willing landowners to address fecal coliform sources in other areas of the watershed (in addition to those identified in FC-1a)	20	12	10	17	15	5	5	5	--	89	1	--	Ranked
		QUAL FC-1d	Design and implement a monitoring system to assess the affects of BMPs and determine whether TMDL Technical Assessment target reductions for fecal coliform have been achieved (previously QUAL FC-3).	20	12	17	15	15	10	0	2	--	91	1	--	Ranked
	for illegal discharges. j. No Name Creek from its source (RM 1.3), downstream to Mill Pond (RM 0.5), to the mouth (RM 0.1). k. Sand Creek in the forested area of upper Mission Creek (Station 45SN00.1) l. The ditch from the Icicle Creek Irrigation District irrigation management flow return (RM 0.1).	QUAL FC-1e	CCD, CDHD AND OTHERS WILL Seek funding through Department of Ecology grants and loans programs and other sources to implement actions and ongoing monitoring described in FC-1a through FC-1d. Explore self-sustaining funding mechanisms to reduce fecal coliform inputs.	--	--	--	--	--	--	--	--	--	--	--	Replaces FC-24	Recommendation
QUAL FC-2	Identify sources of fecal coliform pollution to Chumstick Creek subwatershed, including Van Creek and Upper Eagle Creek, utilizing the FC technical study. Identify human and nonhuman sources and/or failing on-site septic systems. Plan and implement corrective actions. The CDHD should address failing septic systems. Other entities should address manageable sources of FC pollution as appropriate.	--	Deleted and replaced by FC-1a	--	--	--	--	--	--	--	--	--	--	--	Replaced by FC-1a	Replaced by FC-1a
QUAL FC-3	Implement and monitor BMPs to meet the Fecal Coliform TMDL Technical Assessment target reductions**.**	--	Deleted and replaced by FC-1d	--	--	--	--	--	--	--	--	--	--	--	Replaced by FC-1d	Replaced by FC-1d
QUAL FC-4	Utilizing this report, City of Cashmere, and Ecology information, work with the City of Cashmere to identify sewer system root intrusion in areas near streams. Repair and upgrade sewer collection and delivery system.	QUAL FC-4	Work with the City of Cashmere to identify where root intrusion is occurring in the sewer system, especially in areas near streams. Repair and upgrade the sewer system in these areas.	20	10	10	18	15	3	5	3	--	84	2	--	Ranked
QUAL FC-5	The CDHD will continue to work with consenting homeowners to conduct monitoring of on-site wells in areas of fecal coliform exceedences to help identify the source/s. Utilize this assessment (July 2003) to help identify locations for testing.	--	Deleted and replaced by FC-1b	--	--	--	--	--	--	--	--	--	--	--	Replaced by FC-1b	Replaced by FC-1b

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				0 or 20	5-20	0-20	0-20	0-20	0-10	0 or 5	0-5	0-10				
				1	2	3	4	5	6	7	8					
QUAL FC-6	CDHD will continue to implement onsite sewage disposal system technical assistance and education programs for homeowners and the industry.	QUAL FC-6	CDHD continue to provide onsite sewage disposal system technical assistance and education programs for homeowners and the industry.	20	10	10	17	18	5	5	5	--	90	1	Recommendation?? They are already doing this, but by listing this it might allow them a means to get grant funding to continue.	Ranked
QUAL FC-7	The CDHD will continue to permit sewage systems per Washington Administrative Code (WAC), including analyzing soils and technologies suitable for individual sites; review/approve the proposed design, specifications, installation and if required, the ongoing maintenance in accordance with the WAC; provide public information under real estate disclosure laws; and review all land use proposals to ensure that the WAC is properly enforced prior to approval by the County.	QUAL FC-7	Recommend that the CDHD continue to permit onsite sewage systems per Washington Administrative Code (WAC), including analyzing soils and technologies suitable for individual sites; review/approve the proposed design, specifications, installation and if required, the ongoing maintenance in accordance with the WAC; provide public information under real estate disclosure laws; and review all land use proposals to ensure that the WAC is properly enforced prior to approval by the County.	--	--	--	--	--	--	--	--	--	--	--	Does the CDHD do all of this now?? If so, leave as a recommendation? Yes, they are currently doing this, but I wonder if we leave it in if it will allow them a means to try and get grant funding to help.	Recommendation
QUAL FC-8	A grant/loan funding program should be developed and implemented to replace or repair failing septic systems.	QUAL FC-8	CDHD, with the support of the WQTSC, to develop and implement a grant/loan funding program to replace or repair failing septic systems.	20	10	20	20	12	7	0	5	--	94	1	State DOH may fund, *who is implementing this???? WDOE already has a loan program available for this type of work. Not sure who the likely group would be to administer it.*	Ranked
QUAL FC-9	The CDHD should explore obtaining legal authority from Chelan County to operate a pumper notification program with area septage pumpers as part of its onsite septic system operation and maintenance program. The septage pumpers would work with the CDHD to appropriately identify and correct failing septic systems.	QUAL FC-9	No Change	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation
QUAL FC-10	The CDHD and watershed would benefit from the funding, development and maintenance of a digital system for all onsite septic system permits issued in Chelan County, and a GIS database of the onsite septic systems.	QUAL FC-10	Obtain funding for, and have the CDHD, with County assistance, implement the development and maintenance of a database for all onsite septic system permits issued in Chelan County, and a GIS database of the onsite septic systems.	20	5	5	10	14	5	0	4	--	63	4	CDHD is currently in the process of digitizing septic records.	Ranked. In progress.
QUAL FC-11	When the TMDL DIP is developed, the committee should utilize detailed recommendations from the Wenatchee River Watershed Action Plan.	QUAL FC-11	CCCD should continue to oversee and implement recommendations in the Wenatchee River Watershed Action Plan, ensure other entities are also implementing voluntary actions in the Watershed Action Plan, and encourage continued funding of these efforts.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation
QUAL FC-12	Conduct stream walk cleanups along the stream (Fall, Spring, Summer) with area schools, homeowners, and other groups.	QUAL FC-12	Develop and implement a public education and outreach program addressing fecal coliform in the watershed. This may include: (1) stream walk cleanups along the stream (Fall, Spring, Summer) with area schools, homeowners, and other groups , (2) ongoing community fecal coliform education/awareness campaigns throughout the year (FC-13); (3) coordination with outreach that the CDHD is doing in association with their technical assistance on septic systems (see QUAL FC-6); (4) addressing illegal dumping of wastes to storm drains and surface waters (FC-15). (5) BMPs to reduce fecal coliform runoff (FC-17, FC-19, FC-22). (6) Monitor and remove dead animals within the stream corridor and work with Humane Society to address feral cats and dogs.	20	12	5	15	18	5	5	5	--	85	1	Includes all education and outreach program components. Includes parts of FC-12, FC-13, FC-6, FC-15, FC-17 and FC-19	Ranked

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				0 or 20	5-20	0-20	0-20	0-20	0-10	0 or 5	0-5	0-10				
				1	2	3	4	5	6	7	8					
QUAL FC-13	Conduct ongoing community fecal coliform education/awareness campaigns throughout the year. Engage and get support from homeowners.	--	Deleted and replaced by new FC-12	--	--	--	--	--	--	--	--	--	--	--	Replaced by new FC-12	Replaced by new FC-12
QUAL FC-14	Work with City, County, State, and Federal governments, and the Humane Society to deal with the feral cats and dogs living within the stream corridor. Monitor and remove dead animals within the stream corridor throughout the year.	QUAL FC-14	Delete and replaced by new FC-12 (see item (6))	--	--	--	--	--	--	--	--	--	--	--	deleted and replaced with by new FC-12	Replaced by new FC-12
QUAL FC-15	Conduct education and enforcement actions to stop illegal dumping of wastes either to storm drains or directly to surface waters. This dumping may be of portable toilet wastes, recreational vehicle wastes, etc.	QUAL FC-15	Enforce regulations on illegal dumping of wastes either to storm drains or directly to surface waters. This dumping may be of portable toilet wastes, recreational vehicle wastes, etc.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation
QUAL FC-16	The WQTS should encourage the CDHD, Chelan County, Cities, DOH, and Utilities to continue ongoing review and upgrading of ordinances regarding developments and sewage systems technologies.	QUAL FC-16	No Change	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation
QUAL FC-17	The WQTS and its participating entities should work with the public and homeowners regarding BMPs to reduce fecal coliform runoff. General actions should include public information, education, and technical assistance regarding watering practices, landscaping, stormwater runoff, filtration practices, animal waste, etc.	--	Deleted and replaced by new FC-12	--	--	--	--	--	--	--	--	--	--	--	Replace with FC-12. see FC-12 for actual action to rank	Replaced with FC-12. See FC-12 for actual action to rank
QUAL FC-18	Work with irrigation districts to implement and enforce policies to prevent illegal fecal coliform discharges to irrigation canals.	QUAL FC-18	Recommendation to irrigation districts to implement and enforce policies to prevent illegal fecal coliform discharges to irrigation canals.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation to Irrigation Districts
QUAL FC-19	Work with landowners regarding fecal coliform runoff.		Deleted and replaced by new FC-12	--	--	--	--	--	--	--	--	--	--	--	Replace with FC-12. see FC-12 for actual action to rank	Replace with FC-12. see FC-12 for actual action to rank
QUAL FC-20	Encourage Chelan County and municipalities to develop and implement stormwater policies, standards, and guidelines, utilizing the Eastern Washington Stormwater Manual or equivalent, in comprehensive plans, critical area ordinances, growth management plans, and other appropriate plans.	QUAL FC-20	Recommendation to Chelan County and municipalities to develop and implement stormwater policies, standards, and guidelines, utilizing the Eastern Washington Stormwater Manual or equivalent, in comprehensive plans, critical area ordinances, growth management plans, and other appropriate plans.	--	--	--	--	--	--	--	--	--	--	--	This may already be done.	Recommendation to Chelan County and Municipalities
QUAL FC-21	Work with appropriate entities to reduce fecal coliform runoff from impervious surfaces.	--	Deleted and replaced by FC-20, FC-22 and FC-12	--	--	--	--	--	--	--	--	--	--	--	Replace with FC-12 and duplication of FC-20 and FC-22.	Replaced with FC-12 and duplication of FC-20 and FC-22.
QUAL FC-22	Work with U.S. Forest Service, Washington State Department of Natural Resources, and private owners on forested lands to restore and protect streams from fecal coliform runoff pollution.	QUAL FC-22	Recommend that U.S. Forest Service and Washington State Department of Natural Resources restore protect streams from fecal coliform runoff pollution on forested lands.	--	--	--	--	--	--	--	--	--	--	--	Private landowner component of QUAL FC-22 is covered in FC-12	Recommendation to the USFS and WA DNR
QUAL FC-23	Work with wastewater purveyors to examine sewer collection systems to identify problems or damage within them that may contribute fecal coliform loading in the watershed. Correct identified problems as appropriate.	QUAL FC-23	The WQTS and Ecology to work with wastewater purveyors to examine sewer collection systems to identify problems or damage within them that may contribute fecal coliform loading in the watershed. Correct identified problems as appropriate.	20	10	15	15	15	8	0	0	--	83	2	Purveyors need to be involved as part of sewer planning	Ranked

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				0 or 20	5-20	0-20	0-20	0-20	0-10	0 or 5	0-5	0-10				
				1	2	3	4	5	6	7	8					
QUAL FC-24	Funding should be sought through Department of Ecology grants and loans programs to implement actions and ongoing monitoring. Other funding sources should be identified and applications submitted to provide funding for ongoing activities. The WQTS will recommend qualified entities to conduct associated monitoring. Self-sustaining funding mechanisms to reduce fecal coliform inputs should be explored and developed in concert with the Wenatchee Watershed Planning Unit and its participating entities.	--	Deleted and replaced by FC-1e	--	--	--	--	--	--	--	--	--	--	--	Replaced by FC-1e	Replaced by FC-1e
QUAL FC-25	Work with the wastewater utilities regarding their ordinances to connect unconnected homes in the service area.	QUAL FC-25	Recommend that wastewater utilities connect unconnected homes in the service area.	--	--	--	--	--	--	--	--	--	--	--	reworded	Recommendation
QUAL FC-26	--	QUAL FC-26	Placeholder for addressing water quality impacts of increased septic systems resulting from growth. See also DO/pH - 5b.	--	--	--	--	--	--	--	--	--	--	--	--	Placeholder. Will be addressed in the next year of implementation
Actions identified in for DDT, DDD, and DDE for Mission Creek, Brender Creek, and Yaksum																
QUAL DDT-1	Significant reductions in DDT loads may be achieved by preventing bank erosion or by other means of limiting transport of upland soils to streams. Best Management Practices (BMPs) such as riparian buffers and wetlands can also filter and uptake DDT from surface and groundwater (Burgoon, 2002). Many BMPs are currently being implemented in the watershed. BMPs should be continued, refined, and expanded to further reduce erosion, surface runoff, TSS in the water column, and groundwater transport of DDT. BMPs include farm practices, storm water runoff, riparian vegetation planting, orchard conversions, residential practices, riparian buffers, wetlands, etc. These and other appropriate BMP actions BMP and locations should be coordinated by members of the Planning Unit and its committees.	QUAL DDT-1a	Develop and support a program within the CD to identify willing landowners to address DDT (start with Mission, Brender, Yaksum)	5	10	5	8	11	4	5	5	--	53	4	--	Ranked
		QUAL DDT-1b	Apply appropriate BMPs working with landowners identified in 1a (see DIP for specific BMPS)	5	10	10	12	12	4	5	5	--	63	4	--	Ranked
		QUAL DDT-1c	Design and implement a phased monitoring approach to assess the effectiveness of BMPs and DDT-TSS reduction efforts implemented in DDT-1b. The WQTS will recommend qualified entities to conduct associated monitoring.	5	10	10	12	8	10	0	3	--	58	4	--	Ranked
		QUAL DDT-1d	Recommend that funding is sought through Department of Ecology grants and loans programs and other sources to implement actions and ongoing monitoring described in DDT-1a through DDT-1c.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation
QUAL DDT-2	A phased monitoring approach should be conducted to assess the effectiveness of BMPs and DDT-TSS reduction efforts. This may take time to achieve and, as TSS loads are reduced and DDT levels are monitored, TSS targets may be adjusted to correspond to DDT targets.	--	Deleted and replaced by DDT-1c	--	--	--	--	--	--	--	--	--	--	--	Replaced by DDT-1c	Replaced by DDT-1c
QUAL DDT-3	Conduct an evaluation of soil transport to streams during large rainfall events when visual observations can be made and/or sections of streams with high sediment runoff and TSS can be isolated. An assessment should be conducted to investigate if any other events contribute soil to streams such as spring thaw processes or irrigation practices.	QUAL DDT-3a	Conduct a study to evaluate soil transport of DDT-TSS to streams during large rainfall events and determine the potential for additional DDT loading. As part of the study also evaluate whether spring thaw or irrigation contributes DDT-TSS to streams.	5	10	15	12	15	10	0	2	--	69	3	Has this been completed?	Ranked
QUAL DDT-4	More comprehensive groundwater monitoring should be conducted, including further assessment of the relationship between surface water, groundwater, and DDT fate and transport.	QUAL DDT-4	Design and implement a groundwater monitoring plan to determine whether DDT is present in groundwater. If DDT is found at detectable levels in groundwater samples, include an evaluation of DDT fate and transport..	5	5	5	5	15	4	0	5	--	44	4	--	Ranked

Original Action Number	SIS "Action"	New, Refined Action Number	New Action That Can be Ranked	Human Health Concerns 0 or 20 1	Number of Parameters/Plan elements 5-20 2	Source Control 0-20 3	Probability of Continued Benefit, etc 0-20 4	Project Complexity 0-20 5	Project Refinement 0-10 6	Anti-degradation 0 or 5 7	Community Awareness 0-5 8	Political/ Economic Impacts Applied to DO/pH 0-10	Total Score	Tier	Notes	Status
QUAL DDT-5	An assessment should be conducted to investigate if the Icicle and Peshastin canals are entraining DDT or not. Natural background conditions should be further identified as part of this assessment. It is not certain how canals may pick up DDT since no wastewater enters the systems and most canals are lined. Current irrigation system BMPs should continue that maintain lined canals and limit rapid increased flows during emergency situations. Lining of any remaining earthen canals should be encouraged. Other BMPs include irrigation water management, irrigation return drain monitoring and efficiencies, irrigation spill points where erosion control can be improved, spoil pile placement, maintaining canyon crossings, etc.	QUAL DDT5a	Design and implement a monitoring program to determine whether DDT is present in the Icicle and Peshastin Irrigation canals. Consider and refine potential BMPs to prevent further entrainment of DDT in irrigation canals such as lining of canals (see QUAL DDT-1b and 1c for BMPS).	5	10	10	12	8	10	0	3	--	58	4	--	Ranked
QUAL DDT-6	Assessments are recommended for all irrigation systems in the watershed to identify any mechanisms that may contribute to sediment transport which are not yet being addressed by BMPs. Actions should be identified and implemented to address the findings. Lining of earthen canals should be encouraged.	QUAL DDT-5b	If the results of QUAL DDT-5a show DDT presence in sediments in the Icicle or Peshastin Irrigation canals, assess other irrigation systems in areas in the watershed where DDT is known to have been applied and encourage BMPs.	5	10	5	7	8	10	0	1	--	46	4	--	Ranked
QUAL DDT-7	Activities should be identified and undertaken to provide ongoing outreach, education, and technical assistance to growers, streamside landowners, developers, and the general public.	QUAL DDT-7	Develop and implement a public education and outreach program addressing DDT in the watershed. Provide technical assistance to growers, streamside landowners, developers, stakeholders, and the general public.	5	10	5	15	18	5	5	5	--	68	3	--	Ranked
QUAL DDT-8	The Department of Ecology should provide funding assistance through its grants and loans programs to implement actions and ongoing monitoring. Other funding sources should be identified and applications submitted to provide funding for ongoing activities. The WQTS will recommend qualified entities to conduct associated monitoring.	--	Deleted and replaced by DDT-1d	--	--	--	--	--	--	--	--	--	--	--	--	Replaced by DDT-1d
QUAL DDT-9	Development over old orchards is a primary concern. Measures should be implemented to prevent DDT laden orchard soils disturbed during construction from being transmitted to streams and lakes in the watershed. Language requiring measures to prevent DDT laden soils from entering the waterways during and after construction should be developed by the WQTS and included in County and municipality development ordinances, growth management plans, and critical area ordinances. The Stormwater Management Manual for Eastern Washington or an equivalent document should be utilized in developing ordinances, and guiding municipal, private, and construction storm water practices.	QUAL DDT-3b	Based on the results of the study performed in DDT-3a, develop BMPS to be implemented during soil disturbance to prevent DDT transport to surface water.	5	10	15	15	12	3	0	3	--	63	4	who will develop BMPs?	Ranked
		QUAL DDT-3c	Recommend that Chelan County and other municipalities include implementation of the BMPs developed in DDT-3b in Chelan County and municipal development ordinances.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation to Chelan County and Associated Municipalities
QUAL DDT-10	Assessments are recommended for stormwater control systems in the watershed to identify any mechanisms that may contribute to sediment transport which are not yet being addressed by BMPs. Actions should be identified and implemented to address the findings through a list of prioritized projects.	QUAL DDT-10	Recommend that an assessment be done of stormwater control systems in the watershed to identify mechanisms of sediment transport relevant to DDT. Focus on subwatersheds where listings have occurred.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation

Original Action Number	SIS "Action"	New, Refined Action Number	New Action That Can be Ranked	Human Health Concerns	Number of Parameters/Plan elements	Source Control	Probability of Continued Benefit, etc	Project Complexity	Project Refinement	Anti-degradation	Community Awareness	Political/ Economic Impacts Applied to DO/pH	Total Score	Tier	Notes	Status
				0 or 20	5-20	0-20	0-20	0-20	0-10	0 or 5	0-5	0-10				
				1	2	3	4	5	6	7	8					
DO/pH (Non-point Phosphorus) Actions																
QUAL DOpH-1	Large reductions of phosphorus inputs are needed from point sources in the Wenatchee River watershed, especially waste water treatment plants (WWTPs). A regulatory strategy should be developed and implemented with WWTPs and Ecology to institute controls over time through NPDES permits that will reduce phosphorous discharges to surface and ground waters. WWTPs to be addressed include the Lake Wenatchee, Stevens Pass, Leavenworth, Peshastin, and Cashmere waste water treatment plants. Conduct associated monitoring and adaptive management.	QUAL DOpH-1	--	--	--	--	--	--	--	--	--	--	--	--	--	Regulatory strategy ongoing--to be addressed by small group
QUAL DOpH-2	Controls should be developed and implemented through new and existing regulatory permits, if needed, to reduce phosphorous inputs to surface and ground waters from other Wenatchee watershed point sources. Conduct associated monitoring and adaptive management.	QUAL DOpH-2	--	--	--	--	--	--	--	--	--	--	--	--	--	Regulatory strategy ongoing--to be addressed by small group
QUAL DOpH-3	Large reductions of phosphorus inputs are needed from nonpoint sources in the Wenatchee River watershed. Mass-balance modeling showed that two reaches of the lower Wenatchee River exhibit higher diffuse phosphorous loading than other reaches. One reach brackets the city of Dryden (which includes the Dryden community septic and drain field) and the other brackets the city of Cashmere (which includes the waste water treatment lagoons area). Studies should be done in these two reaches, focusing on groundwater-surface water interaction and land-uses that may be contributing phosphorus inputs to the river. Actions should be implemented based on the conclusions and recommendations of these studies to reduce inputs of phosphorous from these areas.	QUAL DOpH-3a	Design and conduct a study to identify the source of phosphorus in groundwater in the Dryden and Cashmere reaches (as identified in the TMDL technical report) and develop BMPs to address these specific sources. Consider sources from surrounding irrigated agricultural regions, rural and urban development (on-site septic and wastewater collection systems), land application of waste and process water, and other unidentified sources.	0	12	20	15	15	10	0	2	10	84	2	--	Ranked
		QUAL DOpH-3b	Design and conduct a monitoring study to identify any non-point sources in tributaries that may be contributing to nutrient loads. First, further nutrient sampling is recommended for Brender, Mission, and Chumstick Creeks(from DOpH-17). Second, conduct sampling to identify additional non-point source loading in the Wenatchee River and Icicle Creek and their tributaries (DOpH-4).	0	12	15	15	18	10	0	2	10	82	2	--	Ranked
		QUAL DOpH-3c	Identify willing landowners and implement the BMPs identified in DOpH-3a above.	0	12	20	18	15	5	0	5	10	85	1	--	Ranked
		QUAL DOpH-3d	Identify other opportunities and work with willing landowners to address non-point phosphorus sources in other areas of the watershed (to those identified in DOpH-3b)	0	12	15	17	15	4	5	5	5	78	3	Law re phosphorous soap?	Ranked
		QUAL DOpH-3e	Design and implement a monitoring system to assess the affects of BMPs (as applied in DopH 3a, 3b, 3c, 3d above) and conduct associated adaptive management	0	12	14	15	15	10	0	3	10	79	2	--	Ranked
		QUAL DOpH-3f	Recommend that funding for these projects D159+D98be sought through Department of Ecology Centennial and 319 grants and loans. Identify and access other funding sources through the Planning Unit and other entities	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation

Original Action Number	SIS "Action"	New, Refined Action Number	New Action That Can be Ranked	Human Health Concerns	Number of Parameters/Plan elements	Source Control	Probability of Continued Benefit, etc	Project Complexity	Project Refinement	Anti-degradation	Community Awareness	Political/ Economic Impacts Applied to DO/pH	Total Score	Tier	Notes	Status
				0 or 20	5-20	0-20	0-20	0-20	0-10	0 or 5	0-5	0-10				
				1	2	3	4	5	6	7	8					
QUAL DOpH-4	Groundwater discharges to the Wenatchee River, Icicle Creek, and their tributaries affects dissolved oxygen levels and nutrient concentrations. Groundwater is discharged to the river or creeks in some reaches, and is recharged in other reaches. In the Wenatchee basin, groundwater flow and BOD/nutrient concentrations may be elevated due to upland practices such as orchard irrigation and wastewater discharge to groundwater from lagoons and on-site septic systems. Assessments of groundwater contributions and sources of nutrients (phosphorous) should be conducted. Actions should be implemented based on the conclusions and recommendations of these studies to reduce inputs of phosphorous from these areas.	--	Deleted and replaced by DOpH-3b	--	--	--	--	--	--	--	--	--	--	--	--	Replaced by DOpH-3b
QUAL DOpH-5	Non-point sources along the length of the river may be contributing BOD and nutrients. Address failing septic systems through actions identified in the Wenatchee Watershed Fecal Coliform TMDL. Continue site specific inspections and enforcement of regulations that restrict placement of on-site septic drain fields from areas with inadequate unsaturated soils. A study should be conducted to assess soils and onsite septic systems. Estimates should be made of the maximum number and density of on-site drain fields that the upper basin can accommodate and still meet the water quality standards, as was done in the Lake Chelan study (Patmont et al., 1989). Conduct associated monitoring and adaptive management.	QUAL DOpH-5a	Address failing septic systems through actions identified in the Wenatchee Watershed Fecal Coliform TMDL. Continue site specific inspections and enforcement of regulations that restrict placement of on-site septic drain fields from areas with inadequate unsaturated soils.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation to ?
		QUAL DOpH-5b	**[Permitting of septic systems and subsequent development should consider water quality issues]**Design and conduct a study to assess the capacity of soils in the watershed to handle onsite septic systems. Estimate the density or capacity for onsite drainfields based on soil properties, as was done in the Lake Chelan Study. Develop and implement regulations that restrict placement of drainfields in areas with inadequate unsaturated soils. **[Combine with new growth and land use action relating to water quality OR a new FC-26]**	10	14	5	20	12	3	5	3	10	82	2	**revisit after action is refined ??? This action applies to both DO/pH and Fecal Coliform parameters**	Ranked
QUAL DOpH-6	Nutrients (phosphorous) can enter streams from storm water events. Work with Chelan County and municipalities to reduce storm water inputs, utilizing the Eastern Washington Storm water Manual or equivalent. Include language in comprehensive plans and ordinances. Work with developers. See item #16. Conduct associated	QUAL DOpH-6	Work with Chelan County and municipalities to reduce storm water inputs, utilizing the Eastern Washington Storm water Manual or equivalent. Include language in comprehensive plans and ordinances. Work with developers.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation
QUAL DOpH-7	Nutrients (phosphorous) can enter surface and ground water from residential yards and gardens, hobby farms, City and County Parks, business owned landscapes, etc. An education outreach plan should be developed and implemented to heighten awareness and reduce inputs from these sources. Policies and practices should be implemented in City and County Public Works departments. The County and cities should consider implementing a ban on the sale of high phosphate detergents, such as is being considered in Spokane. Conduct associated monitoring and adaptive management.	QUAL DOpH-7a	Develop and implement a public education and outreach program addressing sources of phosphorus in the watershed. Work with members of the community with residential yards and gardens, hobby farms, City and County Parks Departments and business owned landscapes (QUAL DOpH-7). Work with County, cities and State DOT to reduce non-point phosphorus from roads and parking lots (DOpH-8). Work with the development community to employ appropriate BMPs during construction activities (DOpH-9). Work with the agricultural community to provide technical assistance through farm plans and BMPs (DOpH-14). Encourage filtration of nutrients through land use practices, including wetlands, filter strips, riparian vegetation, bio-swales, drainage basins, pervious surfaces, etc. in residential, commercial, agricultural, industrial, development, and municipal practices (DOpH-16). Work with irrigation districts to reduce nutrient inputs(DOpH-13).	0	12	5	15	20	5	5	5	5	72	3	--	Ranked
		QUAL DOpH-7b	The County and cities should consider implementing a ban on the sale of high phosphate detergents, such as is being considered in Spokane.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation to Chelan County

Original Action Number	SIS "Action"	New, Refined Action Number	New Action That Can be Ranked	Human Health Concerns	Number of Parameters/Plan elements	Source Control	Probability of Continued Benefit, etc	Project Complexity	Project Refinement	Anti-degradation	Community Awareness	Political/ Economic Impacts Applied to DO/pH	Total Score	Tier	Notes	Status
				0 or 20	5-20	0-20	0-20	0-20	0-10	0 or 5	0-5	0-10				
				1	2	3	4	5	6	7	8					
QUAL DOpH-8	Nutrients can enter streams from materials used to de-ice, clean, and maintain roads and parking lots. Animal waste from roads and parking lots can enter streams and increase nutrient loading. Work with the County, cities, businesses, and the WA State Department of Transportation to identify and reduce nutrient inputs from these practices. Conduct associated monitoring and adaptive management.	--	Deleted and replaced by DOpH-7a	--	--	--	--	--	--	--	--	--	--	--	--	Deleted and replaced by DOpH-7a
QUAL DOpH-9	Nutrients (phosphorous) can be released to ground and surface waters from development practices, such as disruption of soils during conversions of orchard lands to housing. Actions should be conducted to prevent nutrients from entering ground and surface waters before, during and after construction. Work with developers to implement these actions. Include appropriate language in county and city comprehensive plans, growth management, and critical area ordinances. Conduct associated monitoring and adaptive management.	QUAL DOpH-9a	Deleted and replaced by DOpH-7a	--	--	--	--	--	--	--	--	--	--	--	--	Deleted and replaced by DOpH-7a
		QUAL DOpH-9b	Recommend that Chelan County and associated cities include appropriate language addressing construction practices in county and city comprehensive plans, growth management, and critical area ordinances.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation to Chelan County and Cities
QUAL DOpH-10	The operation of Columbia River dams apparently backs up the Wenatchee River from its mouth approximately one mile. It has been hypothesized that this back-water may contribute to the exceedences of pH and dissolved oxygen levels in that reach. Work with the Chelan PUD to conduct an assessment of the possible back-water effect that may be created by operation of the Rock Island dam. Implement actions from the report's conclusions and recommendations to improve water quality.	QUAL DOpH-10a	Recommend that Chelan PUD conduct an assessment of the possible back-water effect that may be created by operation of the Rock Island dam.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation to Chelan PUD
		QUAL DOpH-10b	Recommend that the Chelan PUD consider actions from the report's conclusions and recommendations (from DOpH-10a) to improve water quality.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation to Chelan PUD
QUAL DOpH-11	Actions identified in the Wenatchee River Basin Temperature and Fecal Coliform TMDLs should be implemented. Lowering temperatures and reducing nutrient inputs will improve pH and dissolved oxygen levels in the Wenatchee River watershed.	QUAL DOpH-11	Recommend to the WQTSC that the actions identified in the Wenatchee River Basin Temperature and Fecal Coliform TMDLs be implemented.	--	--	--	--	--	--	--	--	--	--	--	--	Recommendation
QUAL DOpH-12	Reserve load capacities for Biochemical Oxygen Demand (BOD) and nutrients should be established for the Upper Wenatchee River and Icicle Creek. Reserve load capacities are needed because there is no additional assimilative capacity for dissolved oxygen in the upper watershed during critical conditions. A point source regulatory strategy and nonpoint source BMP strategy should be developed to protect the reserve capacities and maintain water quality standards.	QUAL DOpH-12	Develop reserve load capacities for Biochemical Oxygen Demand (BOD) and nutrients for the Upper Wenatchee River and Icicle Creek	--	--	--	--	--	--	--	--	--	--	--	Point source strategy for meeting the reserve load capacity is still in development - defer discussion	Recommendation to Ecology
QUAL DOpH-13	Work with irrigation districts to reduce nutrient inputs. Encourage lining of earthen canals. Work with irrigation districts to implement BMPs and adaptive management.	--	Deleted and replaced by DOpH-7a	--	--	--	--	--	--	--	--	--	--	--	--	Deleted and replaced by DOpH-7a
QUAL DOpH-14	Agricultural practices can contribute nutrients to ground and surface waters through crop watering practices, application of fertilizers, and soil disturbance activities. Work with the agricultural community to encourage practices that will reduce nutrient inputs to ground and surface waters while enhancing crop quality and yield. Examples include technical assistance through farm plans and Best Management Practices (BMPs). Conduct associated monitoring and adaptive management.	--	Deleted and replaced by DOpH-7a	--	--	--	--	--	--	--	--	--	--	--	--	Deleted and replaced by DOpH-7a

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				0 or 20	5-20	0-20	0-20	0-20	0-10	0 or 5	0-5	0-10				
				1	2	3	4	5	6	7	8					
QUAL DOpH-15	Funding for these projects should be sought through Department of Ecology Centennial and 319 grants and loans. Identify and access other funding sources through the Planning Unit and other entities. Ongoing adaptive management should be utilized to provide the best use of funds and environmental benefits.	--	Deleted and replaced by DOpH-3f	--	--	--	--	--	--	--	--	--	--	--	--	Deleted and replaced by DOpH-3f
QUAL DOpH-16	Proper filtration of nutrients through land use practices can have a beneficial effect on nutrient reductions to ground and surface waters. Encourage implementation of wetlands, filter strips, riparian vegetation, bio-swales, drainage basins, pervious surfaces, etc. in residential, commercial, agricultural, industrial, development, and municipal practices. Conduct associated monitoring and adaptive management.	--	Deleted and replaced by DOpH-7a	--	--	--	--	--	--	--	--	--	--	--	--	Deleted and replaced by DOpH-7a
QUAL DOpH-17	Identify and investigate any non point sources in tributaries that may be contributing to nutrient loads.	--	Deleted and replaced by DOpH-3c	--	--	--	--	--	--	--	--	--	--	--	--	Deleted and replaced by DOpH-3c

APPENDIX C

ACTION TABLES WITH RANKING

HABITAT

Action ID	Limiting Factor	Action Type	Specific Actions	Location	2008-2010	2011-2013	2014-2017	Long-term	Long-term	Units	Estimated Costs	Actual Costs	Bio Strat Tier	Social Tier	Social Raw Score	Status	Notes/ Project Development Guide
Lower Wenatchee Assessment Unit Actions																	
LW-1000	Water Quality	Water Quality Improvement	Assessment	Throughout Assessment Unit	Work through TMDL process to evaluate / model affect of irrigation withdrawal on flow / water temperature relationship	Implement recommendations from TMDL					$ 100,000		--	4	13	Model completed in TMDL assessment	--
LW-1010	Water Quality	Water Quality Improvement	Check with TMDL	Throughout Assessment Unit		Implement recommendations from temperature TMDL					$ 375,000		--	--	--	--	--
LW-1030	Water Quantity	Instream Flow	Irrigation Practice Improvements	Throughout Assessment Unit	Implement as appropriate through current and future FSA programs in conjunction with WWPU	Implement as appropriate through current and future FSA programs in conjunction with WWPU	Implement as appropriate	Implement as appropriate					4	Same as LW 4 from old table?	--	--	--
LW-1040	Water Quantity	Instream Flow	Irrigation Practice Improvements	Throughout Assessment Unit	Improve irrigation delivery and use efficiency	Implement as recommended by WWPU process	Implement as recommended by WWPU process	Implement as recommended by WWPU process					4	4	16	--	--
LW-1050	Water Quantity	Instream Flow	Irrigation Practice Improvements	Throughout Assessment Unit	Conversion of small pumps to wells					wells			4	3	20	--	--
LW-1060	Water Quantity	Instream Flow	Irrigation Practice Improvements Water Leased or Purchased	Throughout Assessment Unit	Provide incentives for conserving water - municipal								4	3	20	--	--
LW-1061	Water Quantity	Instream Flow	Irrigation Practice Improvements Water Leased or Purchased	Throughout Assessment Unit	Provide incentives for conserving water - irrigation districts								4	4	14	--	--
LW-1070	Water Quantity	Instream Flow	Water Leased or Purchased	Throughout Assessment Unit	Develop administrative structure for a water bank								4	4	14	--	--
LW-1080	Water Quantity	Instream Flow	Water Leased or Purchased	Throughout Assessment Unit	Investigate water right purchase or lease								4	4	17	--	--
LW-1090	Water Quantity	Instream Flow	Assessment	Throughout Assessment Unit	Assess influence of groundwater withdrawals on surface water					studies			--	--	--	--	--
LW-1100	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat	Sleepy Hollow to Monitor (CMZ 6, highway)	Assess feasibility of reconnection side channels under Highway 2				Improve habitat diversity and quantity by 2 to 3 miles of side channel habitat				1	2	21	Funded for Alternatives Analysis for 2008	--
LW-1110	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat	Above Sleepy Hollow (side channel spring river Left)	Assess feasibility/Design	Implement	Monitor		Improve habitat diversity and quantity by 2 to 3 miles of side channel habitat	miles			1	2	21	--	--

Action ID	Limiting Factor	Action Type	Specific Actions	Location	2008-2010	2011-2013	2014-2017	Long-term	Long-term	Units	Estimated Costs	Actual Costs	Bio Strat Tier	Social Tier	Social Raw Score	Status	Notes/ Project Development Guide
LW-1120	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat	Near Monitor (CMZ?, Pioneer diversion)	Evaluated in 2007	Re-evaluate	Design and Implement		Improve habitat diversity and quantity by 2 to 3 miles of side channel habitat	miles			1	3	20	--	--
LW-1130	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat	Cashmere (Barrow pits)		Evaluate	Design and Implement		Improve habitat diversity and quantity by 2 to 3 miles of side channel habitat	miles			1	3	20	--	--
LW-1140	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat	Below Dryden Dam (CMZ?)	Implemented 2006	Monitor, evaluate and adaptively manage			Improve habitat diversity and quantity by 2 to 3 miles of side channel habitat	miles		Talk to Steve Hayes	1	3	20	Completed 2006/7 by CCPUD	--
LW-1150	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat	Gagnon	Implemented 2007	Monitor, evaluate and adaptively manage			Improve habitat diversity and quantity by 2 to 3 miles of side channel habitat	miles			--	--	--	Completed 2007	--
LW-1160	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat		Implement high priority CMZ projects		Evaluate and Prioritize	Implement 1-2 CMZ projects	Improve habitat diversity and quantity by 2 to 3 miles of side channel habitat	miles			1	3	20	--	Based on recommendation from RTT, hold off on back-channel projects until monitoring and effectiveness data from Gagnon are evaluated.
LW-1161	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat	CMZ 11	Implement 2008								--	--	--	Funded for construction in 2008	BPA?
LW-1162	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat	CMZ 12/13	Implement 2008								--	--	--	Funded for construction in 2008	--
LW-1163	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat	CMZ 2 (Goodfellow)	Design, seek funding and implement	Monitor, evaluate and adaptively manage							--	--	--	Seeking funding	Design being re-done based on RTT review
LW-1164	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat	CMZ 17 (confluence of Peshastin Crk)	Alternatives Analysis								--	--	--	Funded for Alternatives Analysis for 2008	Implementation will depend on outcome of alternatives analysis
LW-1165	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat	CMZ 20 (confluence of Icicle Crk)	Alternatives Analysis								--	--	--	Funded for Alternatives Analysis for 2008	Implementation will depend on outcome of alternatives analysis
LW-1170	Habitat Diversity and Quantity	Land Protection, Acquisition or Lease	Streambank Protection Upland Protection Wetland Protection	Throughout Assessment Unit and associated with CMZ sites	Evaluate high risk areas and prioritize (see CMZ Study)								1	--	--	--	--
LW-1163	Habitat Diversity and Quantity	Land Protection, Acquisition or Lease	Streambank Protection Upland Protection Wetland Protection	CMZ 2 (Goodfellow)	Seek funding and implement								--	--	--	Design completed? Seeking funding	This project includes both protection and active restoration, so its listed twice

Action ID	Limiting Factor	Action Type	Specific Actions	Location	2008-2010	2011-2013	2014-2017	Long-term	Long-term	Units	Estimated Costs	Actual Costs	Bio Strat Tier	Social Tier	Social Raw Score	Status	Notes/ Project Development Guide
LW-1180	Habitat Diversity and Quantity	Riparian Habitat	Planting Forestry Practices or Stand Management Weed Control Livestock Exclusion	Throughout Assessment Unit	Implement in conjunction with CMZ projects and others as appropriate				Improve habitat diversity and quantity by 2 to 3 miles of side channel habitat	acres/linear foot			3	1	24	--	--
LW-1181	Habitat Diversity and Quantity	Riparian Habitat	Planting	Leavenworth Golf Course	Implemented 2007	Monitor, evaluate and adaptively manage						$24,400 (Golf Course)	--	--	--	2,380 linear feet completed (Golf Course)	Specify type of labor, other things that affect total cost
LW-1182	Habitat Diversity and Quantity	Riparian Habitat	Planting	Irwin Riparian (across from Blackbird Is.)	Scheduled for 2008								--	--	--	Funded for implementation in 2008	--
Northside Tributaries Assessment Unit Actions																	
NST-1190	Habitat Diversity and Quantity	Sediment Reduction	Road Reconstruction Road Relocation Road Obliteration Sediment Control	Throughout Assessment Unit			Evaluate, design and implement	Monitor		miles	$ 200,000		--	4	14	--	SB difficult to rank
NST-1200	Habitat Diversity and Quantity	Fish Passage	Barriers Culvert Improvements or Upgrades Road Crossings (bridges) Diversion Dam or Push-Up Dam Removal	Throughout Assessment Unit	Update barrier inventory and assess potential projects	Implement	Monitor	Monitor		miles	$ 550,000		--	--	--	--	--
NST-1201	Habitat Diversity and Quantity	Fish Passage	Culvert Improvement or Upgrade	Derby Creek									--	--	--	Four culverts replaced on NF lands on Derby Creek in 2006 (Fischer Fire Recovery).	This may need to go into "past" projects.
NST-1210	Water Quantity	Instream Flow	Water Leased or Purchased Change Point of Diversion Irrigation Practice Improvements	Throughout Assessment Unit	Evaluate options such as use of out-of-basin water, pumping from lower Wenatchee reserve, PUD hookup, deep groundwater, storage, water right purchase						$ 75,000		--	--	--	--	--
Mission Creek Assessment Unit Actions																	
MC-1220	Water Quality	Water Quality Improvement	Assessment	Throughout Assessment Unit		Evaluate BOD and affect to DO	Implement corrective measures as identified through WWPU	Implement corrective measures as identified through WWPU		studies	$ 75,000		--	--	--	--	--

Action ID	Limiting Factor	Action Type	Specific Actions	Location	2008-2010	2011-2013	2014-2017	Long-term	Long-term	Units	Estimated Costs	Actual Costs	Bio Strat Tier	Social Tier	Social Raw Score	Status	Notes/ Project Development Guide
MC-1230	Water Quality	Water Quality Improvement	Assessment	Throughout Assessment Unit		Monitor fish health / toxicology	Implement corrective measures as identified through WWPU	Implement corrective measures as identified through WWPU		studies	$ 50,000		--	--	--	--	--
MC-1240	Water Quantity	Instream Flow	Irrigation Practice Improvements	Throughout Assessment Unit	Education program to determine BMPs for domestic and agri-business practices	Identify opportunities and implement as appropriate			All irrigation delivery and use systems at optimal efficiency		$ 26,000		3	1	25	--	--
MC-1250	Water Quantity	Instream Flow	Irrigation Practice Improvements	Throughout Assessment Unit	Increase Irrigation efficiency						$ 150,000		3	4	16	--	Some opportunities will be identified through storage analysis, LW-1260
MC-1260	Water Quantity	Instream Flow	Water Leased or Purchased	Peshastin and Icicle Creeks	Evaluate storage from other watersheds	Determine feasibility	Secure funding and support	Implement			$ 75,000		3	--	--	Assessment being done in 2008/09	A water storage needs and alternatives analysis is being done through the WQN/ISF Subcommittee
MC-1270	Water Quantity	Instream Flow	Water Leased or Purchased	Throughout Assessment Unit	Evaluate effects and identify areas where feasibility exists	Implement					$ 286,000		3	3	20	--	--
MC-1280	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MC-1290	Habitat Diversity and Quantity	Riparian Habitat	Weed Control	Throughout Assessment Unit	Evaluate Japanese Knotweed removal and implement as appropriate	Continue control program	Continue control program	Continue control program		acres	$ 10,000		4	3	20	--	--
MC-1300	Habitat Diversity and Quantity	Riparian Habitat	Planting	Throughout Assessment Unit	Implement as opportunities arise	Implement as opportunities arise							4	--	--	--	--
MC-1301	Habitat Diversity and Quantity	Riparian Habitat	Planting	Implement IRIS program on Mainstem between RM 4-6	Evaluate feasibility of program						$ 96,000		4	NR	--	--	Need more info on IRIS Program
MC-1302	Habitat Diversity and Quantity	Riparian Habitat	Planting	Throughout Assessment Unit	Monitor							$20,000 as of 2007	4	--	--	1,950 linear feet planted in 2007	--
MC-1310	Habitat Diversity and Quantity	Sediment Reduction	Road Reconstruction Road Relocation Road Obliteration Sediment Control	NF Roads		Road Analysis	Roads Analysis and implementation (USFS)	7-10 Miles, Implement as appropriate	Reduce road imposition on channel function to the extent practical	miles	$ 100,000		4	3	20	--	--
MC-1320	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat	Between RM 4 and RM 6			Evaluate	Implement		miles	$ 100,000		4	4	17	--	--
MC-1330	Habitat Diversity and Quantity	Sediment Reduction	Road Reconstruction Road Relocation Road Obliteration Sediment Control	County / City and (2-3 miles Brender)	Assess and reduce road interferences with channel function			Evaluate and implement as appropriate	Reduce road imposition on channel function to the extent practical	miles	$ 30,000		4	4	17	--	--

Action ID	Limiting Factor	Action Type	Specific Actions	Location	2008-2010	2011-2013	2014-2017	Long-term	Long-term	Units	Estimated Costs	Actual Costs	Bio Strat Tier	Social Tier	Social Raw Score	Status	Notes/ Project Development Guide
MC-1340	Habitat Diversity and Quantity	Instream	Channel Reconfiguration	Mission - Mouth to NF Boundary			Evaluate	Implement as appropriate		structures	$ 500,000		3	2	21	Cross Vanes completed 2007	Get info from CCD
MC-1350	Habitat Diversity and Quantity	Fish Passage	Culvert Improvements or Upgrades Culvert Removal Channel Reconfiguration Weirs (log or rock) Diversion Dam or Push-up Dam Removal	Throughout Assessment Unit	Check with barrier inventory to identify locations E. Fork, Little Camas, lower mainstem?)	Focus on Little Camas (NF) road, 1 culvert needs work		Restore passage at 2-4 per year	Restore passage to all available spawning and juvenile rearing areas	miles	$ 560,000		4	1	25	--	Consider number of projects necessary to open passage and length of passage open. Refer to barrier inventory. 2 culverts on Lower Sand and one on Little Camas replaced in 2002 by USFS
Peshastin Creek Assessment Unit Actions																	
PC-1360	Water Quantity	Instream Flow	Irrigation Practice Improvements	Tandy Ditch and PID (efficiency) incorporate existing irrigation district facility improvement plans	Assess	Implement as appropriate	Complete		All irrigation delivery and use systems at optimal efficiency.		$ 550,000		1	2	21	--	Flow improvement targets should be discussed in coordination with potential instream modifications and WQN/ISF Subcomm.
PC-1361	Water Quantity	Instream Flow	Irrigation Practice Improvements	Peshastin Irrigation District, lower part of canal	Convert 9,900 feet of open canal to pipe								1	2	21	Funding secured	--
PC-1370	Water Quantity	Instream Flow	Irrigation Practice Improvements	Throughout Assessment Unit	Assess efficiencies and identify funding sources.	Implement as appropriate	Implement as appropriate	Complete			$ 250,000		1	4	15	--	Need details on specific projects. Overall goal to increase flows is the same, but various approaches may rank differently. Work with WQN/IF Subcomm.
PC-1380	Water Quantity	Instream Flow	Water Lease or Purchased Change Point of Diversion	Throughout Assessment Unit	Evaluate options such as use of storage, changed point of diversion, water right purchase or lease.	Implement education program to conserve water use through domestic and agri-business practices					$ 102,000		1	NR	--	--	--
PC-1390	Habitat Diversity and Quantity	Instream	Channel Reconfiguration	Mouth to Ingalls (20 - 30 structures)	USBR conducting fluvial assessment to identify opportunities. Evaluate and prioritize results	Implement 2-4 per year as appropriate	Implement 2-4 per year as appropriate	Implement 2-4 per year as appropriate	Complete 20 - 30 structures	structures	$ 450,000		1	3	20	USBR assessment 2008/09	improving overall function is hard with the highway. This type of project would require more maintenance and permitting issues. Same project as PC-1450. Coordinate with instream flow improvements
PC-1400	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PC-1410	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat	Lower Peshastin (mouth to RM 1)	Alternatives Analysis	Implement action as appropriate	Implement action as appropriate		Improve side-channel habitat and provide high flow refugia	miles	$ 500,000		4	4	15	--	Complex project, so feasibility ranked low. Alternatives analysis funded for 2008 CMZ 17, same as LW-1164

Action ID	Limiting Factor	Action Type	Specific Actions	Location	2008-2010	2011-2013	2014-2017	Long-term	Long-term	Units	Estimated Costs	Actual Costs	Bio Strat Tier	Social Tier	Social Raw Score	Status	Notes/ Project Development Guide
PC-1411	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat	Ingalls Creek to RM 1	USBR conducting fluvial assessment to identify opportunities. Evaluate and prioritize results								1	3	19	USBR assessment 2008/09	Coordinate with instream flow improvements
PC-1420	Habitat Diversity and Quantity	Land Protection, Acquisition or Lease	Streambank Protection Upland Protection Wetland Protection	Downstream of Ingalls Creek	Evaluate potential site selection	Acquire easements and connect floodplain as opportunities arise.	Acquire easements and connect floodplain as opportunities arise.	Acquire easements and connect floodplain as opportunities arise.		miles	$ 800,000		1	--	--	--	--
PC-1430	Habitat Diversity and Quantity	Riparian Habitat	Forestry Practices or Stand Management Planting Recreation Management	Throughout Assessment Unit	Assessment for shade and channel structure, plantings as opportunities arise	Plantings in conjunction with side channel connection, pool formation and flow improvements	Identify and reduce practices having negative effects as appropriate.		USFS incorporates appropriate conservation strategies in review/acceptance of annual operating plans for mines and other practices on NF land..	acres	$ 50,000		4	--	--	--	--
PC-1440	Habitat Diversity and Quantity	Sediment Reduction	Road Relocation Road Obliteration Road Stream Crossing Improvements Sediment Control	Above Ingalls Creek and Upper Tributaries	Assessment for road channel structure (focus on NF - tributaries above Ingalls)	Implement action as appropriate	Implement action as appropriate	Implement action as appropriate	Minimize road affects to stream channel and riparian function as practical.	miles	$ 150,000		--	--	--	--	--
PC-1450	Obstructions	Fish Passage	Channel Reconfiguration	Structures at and below PID (10 structures)	USBR conducting fluvial assessment to identify opportunities. Evaluate and prioritize results	Implement as appropriate from assessment	Complete			structures	$ 150,000		1	3	20	USBR assessment 2008/09	Same as PC-1390
PC-1460	Obstructions	Fish Passage	Culvert Improvements or Upgrades	Mill Creek, Ruby and Scotty Creek	Check with barrier inventory. Assess and engineer	Implement	Complete			miles	$ 240,000		4	1	25	--	more info is needed on Mill Crk to determine extent of potential SH rearing and flow regime
Chumstick Creek Assessment Unit Actions																	
CC-1470	Water Quality	Water Quality Improvement	Refuse Removal	Throughout Assessment Unit	Remove metallic and other debris from stream channel.	Implement as opportunities become available.	Implement as opportunities become available.	Implement as opportunities become available.			$ 25,000		--	--	--	--	Not a limiting factor so not scored. Should be a good thing to do watershed-wide.
CC-1480	Water Quantity	Instream Flow	Assessment	Throughout Assessment Unit	Conduct a surface/ground water interaction study	Develop and implement strategies to meet instream and out-of-stream needs	Evaluate and implement as appropriate	Evaluate and implement as appropriate		studies	$ 75,000		--	--	--	Funded Jan. 2008 - June 2009	This study is being done through the WQN/ISF Subcommittee
CC-1490	Water Quantity	Instream Flow	Irrigation Practice Improvements	Throughout Assessment Unit	Education program to conserve water use through domestic and agri-business practices						$ 26,000		1	1	25	--	--

Action ID	Limiting Factor	Action Type	Specific Actions	Location	2008-2010	2011-2013	2014-2017	Long-term	Long-term	Units	Estimated Costs	Actual Costs	Bio Strat Tier	Social Tier	Social Raw Score	Status	Notes/ Project Development Guide
CC-1500	Riparian	Riparian Habitat	Fencing Lifestock Exclusion Conservation Grazing Management	Throughout Assessment Unit	Evaluate and implement as appropriate				Restore approximately 4 miles of riparian from the confluence with the Wenatchee up stream to Little Chumstick. Additionally restore approximately 1 mile of native vegetation in Eagle Creek	miles	$ 100,000		2	2	21	--	--
CC-1510	Riparian	Riparian Habitat	Weed Control	Throughout Assessment Unit	Evaluate and implement as appropriate				Restore approximately 4 miles of riparian from the confluence with the Wenatchee up stream to Little Chumstick. Additionally restore approximately 1 mile of native vegetation in Eagle Creek	miles	$ 25,000		2	3	19	--	--
CC-1520	Riparian	Riparian Habitat	Planting	Selected areas: Eagle Cr - to Little Chumstick	Evaluate and implement as appropriate	Evaluate and implement as appropriate			Restore approximately 4 miles of riparian from the confluence with the Wenatchee up stream to Little Chumstick. Additionally restore approximately 1 mile of native vegetation in Eagle Creek	acres	$ 5,000		2	2	22	--	Use FLIR and aerial photo analysis to select locations (available from CCNRD), coordinate with WQL Subcomm.
CC-1521	Riparian	Riparian Habitat	Planting	17 landowners within selected areas	Complete and monitor	Monitor						$73,250 as of 2007	2	2	22	7,140 linear feet planted in 2007	--
CC-1530	Sediment	Sediment Reduction	Road Drainage System Improvements Erosion Control Structures Road Obliteration	Tributaries and upper watershed			Evaluate and implement			miles	$ 200,000		2	4	17	--	SB score assumed this would entail obliterating USFS roads. Feasibility is affected by internal FS issues, funding limitations. Chumstick is not a priority.
CC-1540	Habitat Diversity and Quantity	Instream	Off-Channel Habitat	Watershed wide	Reconnect side-channel			Evaluate and implement as appropriate	Increase of channel and high flow refugia habitat	miles	$ 80,000		3	4	17	--	--
CC-1550	Obstructions	Fish Passage	Culvert Improvements or Upgrades	Mainstem Chumstick			funding secured		Top Priority within the Chumstick Watershed	structures	$ 180,000		2	1	24	--	Refer to barrier inventory and USFWS for locations

Action ID	Limiting Factor	Action Type	Specific Actions	Location	2008-2010	2011-2013	2014-2017	Long-term	Long-term	Units	Estimated Costs	Actual Costs	Bio Strat Tier	Social Tier	Social Raw Score	Status	Notes/ Project Development Guide
CC-1551	Obstructions	Fish Passage	Culver Improvements or Upgrades	Mainstem Chumstick	13 scheduled for 2009								--	--	--	Funding secured for 2009 construction	--
CC-1560	Obstructions	Fish Passage	Culvert Improvements or Upgrades	North Road, Lower Chumstick	scheduled for 2010					structures	$ 1,200,000		1	1	29	funding being secured by CC Public Works	Top priority in Chumstick Creek
Icicle Creek Assessment Unit Actions																	
IC-1570	All	Assessment	Icicle Watershed Evaluation	Mouth to Boulder Field	Evaluation of sediment budget, appropriate channel migration and sequence of actions	Implement	Implement			studies	$ 500,000		--	--	--	--	Tentatively scheduled by USBR after Nason and Peshastin are completed
IC-1580	Water Quality	Water Quality Improvement	TBD	Throughout Assessment Unit	Education program to determine BMPs for domestic and agri-business practices						$ 26,000		--	1	25	--	--
IC-1590	Water Quality	Water Quality Improvement	TBD	Throughout Assessment Unit	Implement recommendations from TMDL								--	2	21	--	Original action was to reduce nutrient loads; however it is unclear if that is a limiting factor
IC-1600	Water Quantity	Instream Flow	Water Lease or Purchased Irrigation Practice Improvement	Throughout Assessment Unit	Work with irrigation districts to increase irrigation delivery and use efficiency	Implement as appropriate					$ 600,000		2	4	16	--	--
IC-1610	Water Quantity	Instream Flow	Water Lease or Purchased Irrigation Practice Improvement	Cascade and hatchery pipe (USFWS)	Improve intake, providing pump back (20 cfs) and improving the delivery pipe	Implement as appropriate					$ 6,100,000		2	2	21	--	--
IC-1620	Habitat Diversity	Riparian Habitat	Planting Weed Control	Below hatchery	500-1000 feet per year	500-1000 feet per year	500-1000 feet per year			acres	$ 26,000		4	2	23	--	Highly erosive areas that contribute large amounts of sediment are a higher priority, see IC-1640.
IC-1630	Habitat Diversity	Land Protection, Acquisition or Lease	Streambank Protection Upland Protection Wetland Protection	Below hatchery	Evaluate opportunities and acquire as available	Evaluate opportunities and acquire as available					$ 1,200,000		3	1	24	--	--
IC-1640	Sediment	Sediment Reduction	Riparian Planting Sediment Control	Below hatchery	Evaluate overall need	Implement as opportunities arise	Implement as opportunities arise		Restore all stream banks where feasible	miles	$ 300,000		2	3	18	--	The priority (over IC-1620) are erosive areas contributing large amounts of sediment
IC-1641	Sediment	Sediment Reduction	Riparian Planting Sediment Control	Fromm	Implemented 2007, monitor	Monitor, evaluate and adaptively manage						$14,450	--	--	--	740 linear feet planted in 2007	--
IC-1650	Sediment	Sediment Reduction	Road Obliteration	Trout Creek (USFS)	Evaluate feasibility	Obliterate/reconstruct approx 4 miles				miles	$ 200,000		2	2	23	--	Road is failing, some preliminary assessment work is done.

Action ID	Limiting Factor	Action Type	Specific Actions	Location	2008-2010	2011-2013	2014-2017	Long-term	Long-term	Units	Estimated Costs	Actual Costs	Bio Strat Tier	Social Tier	Social Raw Score	Status	Notes/ Project Development Guide
IC-1660	Habitat Diversity and Habitat Quantity	Instream	Off-Channel Habitat	Reconnect side channel above LNFH between headgate and dam 5	Complete (USFWS)	Monitor, evaluate and adaptively manage				miles	$ 5,200,000		2	3	18	Structures between headgate and dam 5 removed in 2003	Is this action completed or is there more to do?
IC-1665	Habitat Diversity and Quantity	Land Protection, Acquisition or Lease	Streambank Protection Upland Protection Wetland Protection	From mouth to Hatchery		Implement as appropriate							3	--	--	--	--
IC-1670	Obstructions	Fish Passage	Fishways	Dam 5 and Headgate	Restore passage at dam 5 and headgate	Complete					$ 300,000		2	1	24	permitting is underway by USFWS?	--
IC-1680	Obstructions	Fish Passage	Fishways	Assess all irrigation structures in conjunction with appropriate irrigation districts	Evaluate, design and implement where appropriate	Evaluate, design and implement where appropriate	Complete				$ 300,000		2	--	--	--	Not sure what the actual action/location is.
IC-1690	Obstructions	Fish Screening	Fish Screen Replacement	Replace Icicle/ Leavenworth and LNFH-Cascade screens	Complete LNFH (USFWS)	Complete Ice-Peshastin					$ 300,000		3	2	22	--	--
Upper Wenatchee and Chiwaukum Creek Assessment Unit Actions																	
UW and ChiwC-1700	Habitat Quantity (mainstem Wenatchee)	Riparian Habitat	Planting	Associated with some residential development (above Tumwater Canyon)	100 - 500 feet per year	100 - 500 feet per year	100 - 500 feet per year	Implement as opportunities arise	Riparian vegetation intact and elevated stream bank erosion checked.	acres	$ 15,000		--	2	23	--	--
UW and ChiwC-1710	Habitat Quantity (mainstem Wenatchee)	Instream	Off-Channel Habitat	NF Road above Tumwater Canyon.	USBR fluvial assessment. Evaluate the need and feasibility of lower River Road modification/relocation	Evaluate the need and feasibility of lower River Road modification/relocation	Complete	Implement as opportunities arise	River Road imposition on river and floodplain function minimized.	miles	$ 150,000		3	--	--	--	SB scoring deferred based on USFS planning efforts
UW and ChiwC-1720	Habitat Quantity (mainstem Wenatchee)	Instream	Log Structure or Log Jam	upper Mainstem	USBR fluvial assessment to identify opportunities. Evaluate benefit and feasibility and prioritize results	Implement 2-3 structures and monitor fish use for pilot.	Implement 2-3 additional structures per year.	Implement 2-3 additional structures per year.	Approximately 15 - 20 additional LWD complexities.	structures	$ 60,000		1	3	19	--	--
UW and ChiwC-1725	Habitat Quantity (mainstem Wenatchee)	Land Protection, Acquisition or Lease	Streambank Protection Upland Protection Wetland Protection	mainstem Middle and Upper Wenatchee	Implement as appropriate								1	--	--	--	--

Action ID	Limiting Factor	Action Type	Specific Actions	Location	2008-2010	2011-2013	2014-2017	Long-term	Long-term	Units	Estimated Costs	Actual Costs	Bio Strat Tier	Social Tier	Social Raw Score	Status	Notes/ Project Development Guide
UW and ChiwC-1730	Habitat Diversity (Chiwaukum)	Riparian Habitat	Recreation Management Weed Control Planting Fencing	NF Campground		Evaluate campground relationship to river function	Implement Recommendations			studies	$ 150,000		3	--	--	--	--
UW and ChiwC-1740	Habitat Diversity (Chiwaukum)	Instream	Channel Reconfiguration Plant Removal or Control	Lower sections (of chiwaukum or Skinney?...sounds like Skinney habitat)	Evaluate and obtain permission to remove old earth dikes, canary reed grass, reestablish channel's) and native vegetation.	Design, acquire permits and approval	Implement and monitor	Monitor and maintain		miles	$ 895,000		--	--	--	--	Several project types lumped. Need to rank (SB) each type individually. Not a limiting factor.
UW and ChiwC-1741	Habitat Diversity (Chiwaukum)	Instream	Channel Reconfiguration	Skinney Creek (RM 0.0-0.5)	ID funding source to partner w/ WSDOT	Implement							--	--	--	--	Opportunity to remove section of existing HWY 2 and rehabilitate Skinney Creek to historic channel and pattern. Associated with WSDOT preferred alternative for US2 Chiw. Crk bridge replacement
UW and ChiwC-1750	Obstructions (Chiwaukum)	Fish Passage	Culvert Improvements or Upgrades	Skinny Creek	Implement	monitor				structures	$ 160,000		--	1	25	Upper Skinny Completed 2006	Lower Skinny tied to WSDOT bridge replacement. See UW-ChiwC-1741
UW and ChiwC-1760	Obstructions (Beaver Creek)	Fish Passage	Culvert Improvements or Upgrades	6 culverts starting at RM 0.3 (others within potential fish distribution?)	Determine rank among Wenatchee priorities. Implement 1-2 per year in years 2-3	Continue to implement at 1-2 per year until finished	Finalize implementation and monitor and maintain all improvements	Monitor and maintain	Monitor and maintain	structures	$ 300,000		4	1	25	--	--
UW and ChiwC-1761	Obstructions (Beaver Creek)	Fish Passage	Culvert Improvements or Upgrades	Beaver Complex #1, #2, #3	Implement	monitor							4	1	25	Beaver 1&3 completed 2007. #2 funded and scheduled for 2008	--
UW and ChiwC-1762	Obstructions (Beaver Creek)	Fish Passage	Culvert Improvements or Upgrades	Chiwawa Loop Rd.	Implement	monitor							4	1	25	Funded and scheduled for 2008	CC Public Works
Chiwawa River Assessment Unit Actions																	
CR-1770	Habitat Quantity	Instream	Channel Connectivity Off-Channel Habitat	Chikamin Flat	Evaluate	Implement				miles	$ 800,000		4	3	19	Project being developed by USFS w/landowner	Cooperative landowner already working with USFS. Not much maintenance needed.
CR-1780	Habitat Quantity	Sediment Reduction	Road Drainage System Improvements Erosion Control Structures	Lower Watershed and Tributaries	Evaluate	Implement	Implement				$ 200,000		--	--	--	Assessment completed above Chikamin Creek.	--

Action ID	Limiting Factor	Action Type	Specific Actions	Location	2008-2010	2011-2013	2014-2017	Long-term	Long-term	Units	Estimated Costs	Actual Costs	Bio Strat Tier	Social Tier	Social Raw Score	Status	Notes/ Project Development Guide
CR-1790	Habitat Quantity	Riparian Habitat	Recreation Management	NF campsites - middle/upper watershed	Implement, monitor, adaptively manage	Monitor, evaluate, adaptive mgt	On-going	On-going	Riparian vegetation intact, public access maintained, salmon and bull trout harassment reduced during spawning.	acres	$ 25,000	$115,000	4	--	--	Completed by USFS 2006-07	See comment attached to cell
CR-1800	Habitat Quantity	Land Protection, Acquisition or Lease	Streambank Protection Upland Protection Wetland Protection	Lower 4 miles of Chiwawa	Implement as appropriate	Implement as appropriate	Implement as appropriate				$ 2,300,000		1	3	19	--	SB score differs by Assessment Unit based on landowner willingness/feasibility. Each community is different
CR-1810	Obstructions	Fish Passage	Culvert Improvements or Upgrades Culvert Removal	Clear, Minnow, Alder, and Deep creeks	Evaluate future, complete those in progress	Implement future	Complete	Monitor		structures	$ 480,000		3	1	25	--	Discuss brook trout with Minnow and Deep Creeks
CR-1811	Obstructions	Fish Passage	Culvert Improvements or Upgrades Culvert Removal	Clear Creek #1, #2 & #3	Implement	monitor							--	--	--	Completed 2007	--
CR-1812	Obstructions	Fish Passage	Culvert Improvements or Upgrades Culvert Removal	Alder Creek #1 & #2	Implement	monitor							--	--	--	Completed 2007	--
CR-1820	Species interaction	Reduce or Eliminate Non-native Species	Reduce or Eliminate Brook Trout	Brook Trout in Minnow and Schaefer Lakes	Evaluate approach	Implement	On-going control	On-going control		studies	$ 50,000		3	4	5	--	Very difficult to implement. Gaining community support would take time to educate the public.
CR-1830	Depleted Nutrients	Nutrient Enrichment	Carcass Analog Carcass Placement	Within current and historic range, consistent within individual stream capacity.	Evaluate approach, identify appropriate methods and obtain permits and approval	Implement	Monitor, evaluate, adaptively manage	Monitor, evaluate, adaptively manage			$ 12,000		2	3	18	--	Nees further evaluation and discussion. It's difficult to retain carcasses. Will need to be able to "win" community support through education. Needs long-term monitoring. A potential permitting issue with increased P levels and pH/DO TMDL downstream.
Nason Creek Assessment Unit Actions																	
NC-1840	All	Assessment	Nason Watershed Evaluation	Primarily below White Pine	Evaluation of sediment budget, appropriate channel migration and sequence of actions	Implement	Implement			studies	$ 175,000		--	--	--	Completed by USBR 2007	--

Action ID	Limiting Factor	Action Type	Specific Actions	Location	2008-2010	2011-2013	2014-2017	Long-term	Long-term	Units	Estimated Costs	Actual Costs	Bio Strat Tier	Social Tier	Social Raw Score	Status	Notes/ Project Development Guide
NC-1850	Habitat Diversity	Land Protection, Acquisition or Lease	Streambank Protection Upland Protection Wetland Protection	Mouth to White Pine Creek	Ongoing, acquire as available or based on USBR Assessment						$ 2,300,000		1	2	22	--	See notes under CR-1800
NC-1860	Habitat Diversity	Riparian Habitat	Forestry Practices or Stand Management Planting	Mouth to Whitepine Creek	Evaluate specific need and develop schedule based on USBR Assessment					acres	$ 86,000		2	2	23	--	Projects need to be developed in the right place. There are some locations that may not be appropriate.
NC-1870	Habitat Diversity	Instream	Channel Reconfiguration	Mouth to Whitepine Creek	Evaluate specific need and develop schedule based on USBR Assessment					structures	$ 150,000		1	2	21	--	Under old action, "increase LWD": potential permitting issues, need to communicate safety to public. These would be active projects with shorter-term effects, so we need to understand expectations.
NC-1880	Channel Stability	Instream	Channel Connectivity Off-Channel Habitat Channel Reconfiguration	Mouth to White Pine Creek	Implement and evaluate natural and/or historic lower Nason side/off channel habitats	implement one side/off channel project per year			Increase side-channel habitat by 2 miles and 8 miles of in-stream habitat	miles	$ 700,000		1	2	21	--	--
NC-1881	Channel Stability	Instream	Channel Connectivity Off-Channel Habitat Channel Reconfiguration	Mouth to White Pine Creek	Develop process for implementing projects with BNSF	Apply process to specific projects							--	--	--	Funded, project underway	--
NC-1882	Channel Stability	Instream	Channel Connectivity Off-Channel Habitat Channel Reconfiguration	Nason Oxbow CMZ N2/3 (check #)	Completed 2007	Monitor, evaluate, adaptive mgt	Monitor, evaluate, adaptive mgt						--	--	--	Completed 2007	--
NC-??	Channel Stability	Instream	Channel Connectivity Off-Channel Habitat Channel Reconfiguration	Nason CMZ 4	Analysis scheduled for 2008								--	--	--	Funded for analysis	--
NC-1890	Obstructions	Fish Passage	Culvert Improvements or Upgrades Culvert Removal	Coulter/Roaring (Railroad Crossing)	Evaluate feasibility, look at USBR Assessment and Barrier Study	Implement if appropriate			Improve passage throughout the watershed	miles	$ 50,000		2	1	25	--	--
NC-1900	Obstructions	Fish Passage	Culvert Improvements or Upgrades Culvert Removal	Mill Creek	Evaluate feasibility, look at Barrier Study				Improve passage throughout the watershed	miles	$ 50,000		2	1	25	--	Get specific locations

Action ID	Limiting Factor	Action Type	Specific Actions	Location	2008-2010	2011-2013	2014-2017	Long-term	Long-term	Units	Estimated Costs	Actual Costs	Bio Strat Tier	Social Tier	Social Raw Score	Status	Notes/ Project Development Guide
NC-1901	Obstructions	Fish Passage	Culvert Improvements or Upgrades Culvert Removal	Mill Creek - Westbound HW2	Monitor								--	--	--	Completed in 2006	Completed by WSDOT
NC-1910	Obstructions	Fish Passage	Culvert Improvements or Upgrades Culvert Removal	Gill and Roaring Creeks (lower reaches)	Evaluate feasibility, look at USBR Assessment and Barrier Study				Improve passage throughout the watershed	miles	$ 100,000		2	1	25	--	Check status of Highway culverts
NC-1920	Depleted Nutrients	Nutrient Enrichment	Carcass Analog Carcass Placement	Within current and historic range, consistent within individual stream capacity.	Evaluate approach, identify appropriate methods and obtain permits and approval	Implement	Monitor, evaluate, adaptively manage	Monitor, evaluate, adaptively manage			$ 12,000		2	3	18	--	See notes under CR-1830
Little Wenatchee River Assessment Unit Actions																	
LitWR-1930	Sediment	Sediment Reduction	Road Relocation Road Obliteration Road Drainage System Improvements	Throughout Assessment Unit	Fund NEPA to implement USFS Roads Analysis recommendations	Implement	continue to implement			miles	$ 150,000		2	3	18	--	Road closure recommendations are contingent on USFS completing silvicultural prescriptions to accelerate late successional characteristics in harvest plantations.
LitWR-1940	Sediment	Riparian Habitat	Planting Forestry Practices or Stand Management	Throughout Assessment Unit	Evaluate need	Implement as opportunities arise				acres	$ 80,000		3	1	25	--	I don't know where this came from…it's not in Biological Strategy or Watershed Plan. I wonder if it's tied to the road closures after the plantations are thinned (project above). I recommend we delete this. Could be tied to Tier 3 Bio Strat rec.
LitWR-1950	Depleted Nutrients	Nutrient Enrichment	Carcass Analog Carcass Placement	Within current and historic range, consistent within individual stream capacity.	Evaluate approach, identify appropriate methods and obtain permits and approval	Implement	Monitor, evaluate, adaptively manage	Monitor, evaluate, adaptively manage			$ 12,000		2	3	18	--	See notes under CR-1830
LitWR-1960	Habitat Diversity	Riparian Habitat	Recreation Management Planting	Dispersed recreation sites below Little Wenatchee Falls	Assess, design, permit, implement	continue to implement, monitor, evaluate, adaptive mgt	Monitor and maintain	Vegetative recovery complete.		acres	$ 25,000		2	1	24	--	Access to two of three known trouble sites barricaded with boulders. Need to continue monitoring, access becoming an issue with kayaking groups.

Action ID	Limiting Factor	Action Type	Specific Actions	Location	2008-2010	2011-2013	2014-2017	Long-term	Long-term	Units	Estimated Costs	Actual Costs	Bio Strat Tier	Social Tier	Social Raw Score	Status	Notes/ Project Development Guide
LitWR-1970	Habitat Diversity	Land Protection, Acquisition or Lease	Streambank Protection Upland Protection Wetland Protection	lower assessment unit	Acquire conservation easements and pursue other innovative measures as opportunities arise	Acquire easements where available.							1	--	--	--	See notes under CR-1800
White River Assessment Unit Actions																	
WhR-1980	Habitat Diversity	Land Protection, Acquisition or Lease	Streambank Protection Upland Protection Wetland Protection	Lower mainstem	Acquire conservation easements and pursue other innovative measures	Acquire easements where available.	Acquire easements where available.	Acquire easements where available.	Protect and maintain existing excellent spawning and rearing habitat.		$ 2,300,000		1	1	24	Check with CDLT on status	See notes under CR-1800.
WhR-1990	Habitat Diversity	Riparian Habitat	Planting	Mouth to Sears Ck	valuate specific need and develop schedule. Implement approximately 500 feet per year as appropriate	Plantings 500 feet per year.	Plantings 500 feet per year.			acres	$ 20,000		1	2	23	--	focus plantings in flood plain areas, residential development, and impacted side-channel habitat
WhR-2000	Depleted Nutrients	Nutrient Enrichment	Carcass Analog Carcass Placement	Within current and historic range, consistent within individual stream capacity.	Evaluate approach, identify appropriate methods and obtain permits and approval	Implement	Monitor, evaluate, adaptively manage	Monitor, evaluate, adaptively manage			$ 12,000		2	3	18	--	See notes under CR-1830
WhR-2010	Habitat Diversity and Quantity	Instream	Streambank Stabilization Channel Connectivity Off-Channel Habitat	Below Sears Creek									1	--	--	--	Check with CDLT and WDFW
WhR-2011	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat	White River Oxbow above Sears Crk. NF land	Monitor, Evaluate and adaptively manage	Monitor, evaluate, adaptively manage							--	--	--	Completed 2005	1.5 mile road obliteration (0.75 miles of diked road in floodplain), removed 3 undersized culverts in floodplain and re-connected 1/2 mile of oxbow
WhR-2112	Habitat Diversity and Quantity	Instream	Channel Connectivity Off-Channel Habitat	Upper Canyon Roads above Sears Creek	Monitor, Evaluate and adaptively manage	Monitor, evaluate, adaptively manage							--	--	--	Completed 2005	3.5 miles of road obliteration and 27 culverts removed to restore hydrologic function and wetland connectivity
WhR-2113	Habitat Diversity and Quantity	Instream	Streambank Stabilization Channel Connectivity Off-Channel Habitat	White River bank stabilization on NF land above Sears Creek	Monitor, Evaluate and adaptively manage	Monitor, evaluate, adaptively manage							--	--	--	Completed 2005	Installed 120 pieces of LWD over 110 ft of stream bank to maintain pools and provide high flow refuge

Action ID	Limiting Factor	Action Type	Specific Actions	Location	2008-2010	2011-2013	2014-2017	Long-term	Long-term	Units	Estimated Costs	Actual Costs	Bio Strat Tier	Social Tier	Social Raw Score	Status	Notes/ Project Development Guide
WhR-2020	Habitat Diversity and Quantity	Off Channel Wetlands	Wetland Improvement and Enhancement Wetland Restoration	Below Sears Creek									1	--	--	--	Check with CDLT and WDFW

APPENDIX D

POTENTIAL SALMON RECOVERY FUNDING SOURCES FOR CONSIDERATION BY THE WRIA 45 WATERSHED PLANNING UNIT

This appendix includes a list of salmon recovery funding sources that could be used to implement actions in this Implementation Plan. A full database of alternative funding sources has been obtained from Boise State University and is being maintained in Chelan County data bases. Once the Habitat Work Schedule is completed, the full data base of funding sources will be available through the work schedule.

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1.0 INTRODUCTION

The following funding sources were identified as potential resources that could be utilized to support the implementation of the habitat actions in the WRIA 45 Watershed Management Plan. The sources are identified in the regional funding matrix developed by the Upper Columbia River Salmon Recovery Board (UCRSB) to support salmon recovery efforts in the Columbia River Basin (www.ucrsrb.com).

Chelan County Natural Resources Department will also maintain a database of additional funding sources listed in the Directory of Watershed Funding Resources – Environmental Finance Center at Boise State University: http://ssrc.boisestate.edu/index.asp.

1.1 Salmon Recovery Funding Board (SRFB)

The Salmon Recovery Grant Program provides grants for the protection and restoration of salmon habitat and also supports feasibility assessments for future projects and other activities. Eligible entities: state and local agencies, tribes, nonprofits, private. Eligible project types: habitat protection and restoration, and some assessments; Projects completed in 2-3 years. Applicants must provide at least 15 percent matching funds in either cash or in-kind contributions. Additional information on this program is available at: http://www.rco.wa.gov/srfb/grants/salmon_recovery.htm.

1.2 Habitat Conservation Plan Tributary Fund

The Habitat Conservation Plan Tributary Fund provides grants for protection and restoration of habitat for Plan Species will benefit other salmonids, particularly resident fish, and perhaps other riparian and aquatic dependent species. The Committees allocate funds for projects that address the highest priorities for protection and restoration for Plan Species habitat. The Committees give special consideration to projects that benefit other species in addition to the Plan Species. Anyone can apply; Projects must protect or restore salmon habitat; Demonstration of long-term stewardship (10 years); Project completed within five years (GSF) or two years (Small Projects). The Committees have two stand alone funding programs: 1) the General Salmon Habitat Program; and 2) the Small Projects Program. The Committees encourage Project Sponsors to provide a portion of the project value, known as "match." Additional information on this program is available at: http://www.midcolumbiahcp.org/.

1.3 Priest Rapids

Anyone can apply; Projects must protect or restore salmon habitat. Matching funds are not required but encouraged. Project proponent must be sponsored by a member of the Coordinating Committee.

1.4 NOAA: Community-based Restoration Program (CRP)

The NOAA CRP provides financial and technical assistance to communities for the restoration of fisheries habitat nationwide. Eligible applicants include non-profit organizations, commercial (for-profit) organizations, state, local and tribal governments, higher education institutes, and international organizations. Eligible project types include feasibility and design, construction, monitoring, as well as outreach and education activities for on-the-ground restoration projects. Matching requirements are 1:1 non-federal; cash or in-kind. Funded projects must meet all compliance requirements, including ESA and Sec. 106 as applicable, before funding is released; Starting to require baseline and post implementation monitoring; Reporting every 6 months. Additional information on this program is available at: http://www.nmfs.noaa.gov/habitat/restoration.

1.5 USFS: CCS/JV

CCS- internal (FS) requests for partner efforts; Region-wide program (not limited to priority basins). JV- FS and/or direct partner proposals accepted; fish/water specific. Heavy emphasis on priority watersheds. Both emphasize ecosystem/multi- species restoration. Matching requirements are 1:1 non-federal. Process requirements include project planning and proposals: Work through local National Forest units. Additional information on this program is available at: http://www.fs.fed.us/r6/welcome.shtml.

1.6 National Fish and Wildlife Foundation: Community Salmon Fund

The program awards smaller-scale grants for salmon habitat protection and restoration projects that are marked by community involvement and watershed health benefits, and which are consistent with local salmon recovery plans. Grants made under this program are administered by the Foundation. The NFWF provides grants for habitat restoration projects consistent with local salmon recovery plans; that engage landowners, business owners, and other community groups; and stimulate creativity and leadership. Matching requirements are 50% non-federal. Include a location, project type, or community partner that is under-represented in salmon recovery efforts. Additional information on this program is available at: http://www.nfwf.org.

1.7 USFWS: Fisheries Restoration and Irrigation Mitigation Act (FRIMA)

The purpose of this program is to match federal funds with local, state, and tribal programs to increase fish survival, reduce entrainment in existing water distribution systems, and increase access to productive fish habitat. To be eligible for consideration under this program, a proposed fish screening or passage project must be associated with a water diversion and benefit fish species native to the project area. The project proposal may include other modifications to the water diversion that are directly associated with screening or passage improvements. Project sponsors must provide cost share of at least 35% of the total project cost from funding sources other than FRIMA. Additional information on this program is available at: http://wdfw.wa.gov/recovery/frima_application-07.htm.

1.8 USFWS: Section 6

The federal Cooperative Endangered Species Conservation Fund (Section 6) is a grant funding program administered by US Fish and Wildlife with funding through WA Departments of Natural Resources and Fish and Wildlife. The funds are available for habitat purchase through the HCP Land Acquisition and Recovery Land Acquisition grant programs. Grant funds are also made available for HCP planning and development through the Habitat Conservation Planning Assistance grant program. There is a minimum 25% non-federal match/cost-share. Additional information on this program is available at: http://wdfw.wa.gov/grants/section6/ and http://www.fws.gov/endangered/grants/section6/index.html.

APPENDIX E

GROUP A WATER SUPPLIERS LETTER

and

DATABASE OF GROUP A SYSTEM CONTACTS

Chelan County Natural Resource Program
316 Washington Street Suite 401, Wenatchee, Washington 98801
Phone (509) 667-6532 Fax (509) 667-5527

Please visit our website at www.co.chelan.wa.us/nr/nr1.htm

April 4, 2005

To: Group A Water Systems within the Wenatchee Watershed

RE: Participation in Wenatchee Watershed Planning

Dear Interested Party,

Watershed Planning is underway in the Wenatchee River Watershed and we are on track to have a completed Watershed Plan in April 2006. Under RCW 90.82, the state is providing funding for the local development of this plan for managing water resources and protecting existing water rights. The Wenatchee Watershed Planning Unit is tasked with assessing water supply and use and developing strategies for meeting current and future water needs for both instream uses (e.g. instream flows for fish) and for out-of-stream uses (e.g. domestic, commercial, industrial and agriculture). This specifically includes:

- Estimating surface water and groundwater present and available
- Estimating water rights, claims and permits
- Estimating the amount of surface water and groundwater actually being used
- Estimating future water needs
- Estimating surface and groundwater available for further appropriation

In addition to the above, the Wenatchee Watershed Plan will also address salmon and wildlife Habitat, Water Quality and Instream Flow issues. The Instream Flow setting process will assess existing minimum instream flow rules and determine if they should be modified and may set flows in new locations. Minimum instream flows are used by the Department of Ecology to make decisions on issuing future water rights. A water reservation for future growth may also be established as part of the instream flow rule.

You are invited to participate in a meeting specifically for public water systems to learn more about the development of the watershed plan, it's potential implications, and how you can participate and provide valuable input. **The meeting will be held on Thursday, April 21 from 1:00 - 3:30 at the Cashmere Riverside Center (201 Riverside Drive).**

It is very important that the information used in this process is accurate and current. Your participation can ensure that it is. We are especially interested in your input on projections for future water demands, needs for additional water rights, and how water use may change.

Please call me at 667-6584 if you have any questions or would like more information.

Sincerely,

Mike Kaputa, Director
Chelan County Natural Resource Program

Chelan County Natural Resource Department
316 Washington Street, Suite 401, Wenatchee, WA 98801
Phone (509) 667-6533 Fax (509) 667-6527

January 24, 2008

To: Group A Water Systems within the Wenatchee Watershed

RE: Future Public Water Supply Needs

Dear Water Purveyor in the Wenatchee Watershed,

I am writing you on behalf of the Wenatchee Watershed Planning Unit to request information on your domestic water supply needs.

In April of 2005, many of you were invited to and participated in a meeting for public water systems to learn more about the development of the Wenatchee Watershed Plan. The Wenatchee Watershed Management Plan was completed and unanimously approved by the Planning Unit and the Board of Chelan County Commissioners in 2006. The Planning Unit is a diverse group of local and regional stakeholders who worked hard to develop a plan that balances water availability and supply issues, salmon habitat issues, instream flow issues and water quality issues. The Planning Unit continues to work together to implement the actions in the watershed plan.

One of the first actions implemented was the development of a revised instream flow rule for the Wenatchee Watershed. Instream flow rules are used by the Department of Ecology (Ecology) to make decisions on issuing new water rights. Under the previous rule established in 1983, it has been very difficult for public water systems to obtain new rights that are not subject to curtailment when river flows are low. In fact, all new water rights issued since then are 'interruptible' meaning that when the river flows reach a certain low level these water users are required to stop use. The revised instream flow rule will make water available for year round residential uses over the next 20 years, while protecting stream flows and existing water rights. The Director of the Department of Ecology adopted these revisions into rule in December 2007.

The rule changes will not affect existing water rights and will only apply to future water allocations. A reservation of water is set aside for future out-of-stream use at 4 cubic feet per second (cfs) and is estimated to meet new municipal and domestic water use needs through 2025 (current cumulative use is estimated at 7 cfs). Chelan County, the Planning Unit and Ecology will work together to track new uses and debits to the reservation and to reassess strategies to ensure a reliable water supply for the Wenatchee river. To do this, we need a better understanding of what your future water supply needs are and if you will need to access water from this reservation.

Under the implementation requirements for watershed planning, the planning unit needs to evaluate the planned future use of existing Group A water rights that are inchoate (currently unused) [RCW 90.82.048(1)]. By estimating these inchoate rights, the planning unit will be able to more accurately estimate future domestic water needs that will be debited to the reservation rather than covered by existing rights held by a Group A system. We are requesting that all Group A Water System operators provide data regarding your current water rights and water use. Your participation will ensure that this work is based on the best available data. Please provide the following:

1. Information on water right(s) and associated water right identification number(s);
2. Most recent reported annual average water use (including the year for which it is reported);
3. Number of connections (for the year reported in #2);
4. Currently installed pumping capacity;
5. What year you anticipate your current water right will be fully used to supply anticipated growth;
6. What additional water rights you will need (both instantaneous flow rate (gpm) and annual volume (ac-ft/yr) to service projected growth and what year will you need it.

Please fill out the attached questionnaire and return it as soon as possible to (pre-paid postage included):

Mary Jo Sanborn, Water Resource Manager
Chelan County Natural Resource Department
316 Washington St., Suite 401
Wenatchee, WA 98801
or
Fax to: 509-667-6527

You may also email the information to maryjo.sanborn@co.chelan.wa.us

Thank you for your time. If you have questions about this request or would like more information about the Wenatchee Watershed Plan please contact me at 509-667-6532 or at the email address above.

The Final Wenatchee Watershed Management Plan is available on the internet at http://www.co.chelan.wa.us/nr/nr_watershed_plan.htm and information on the instream flow rule amendments for the Wenatchee River (Chapter 173-545 WAC) is available online at http://www.ecy.wa.gov/programs/wr/instream-flows/wenatchee.html

Sincerely,

Mary Jo Sanborn
Water Resource Manager

Wenatchee Watershed Group A Water Systems
Future Public Water Supply Needs

QUESTIONNAIRE

Please respond to the questions below and return it as soon as possible. You may use the pre-paid postage on the back of this questionnaire (fold along the dotted lines, staple and mail) or you can email or fax your responses to:

Mary Jo Sanborn
Chelan County Natural Resource Department
maryjo.sanborn@co.chelan.wa.us
fax: 509-667-6527

If you have questions or need assistance, call 509-667-6532 or email to the above address.

1. Information on water right(s) and associated water right identification number(s):

2. Most recent reported annual average water use (including the year for which it is reported);

3. Number of connections (for the year reported in #2):

4. Currently installed pumping capacity:

5. What year you anticipate your current water right will be fully used to supply anticipated growth:

6. What additional water rights you will need (both instantaneous flow rate (gpm) and annual volume (ac-ft/yr) to service projected growth and what year will you need it.

Mary Jo Sanborn
Chelan County Natural Resource Department
316 Washington St., Suite 401
Wenatchee WA, 98801

WRIA 45 Group A Water Systems in Washington Department of Health's Database

WRIA Num	WRIA	WS ID	WS Name	WS Grp	Contact F_Name	Contact L_Name	WS Address1	WS Address2	WS City	WS State	WS Zip
45	Wenatchee	00750	ALCOA	A	DAVID	HULSE	ALCOA	6200 MALAGA-ALCOA HWY	MALAGA	WA	98828
45	Wenatchee	01737	CASCADE HIDEAWAY	A	DAVE	EVANS		14583 LAKE WENATCHEE HWY	LEAVENWORTH	WA	98826
45	Wenatchee	01822	ALPINE ACRES COMMUNITY ASSOCIATION	A	DIRK	ANDERSEN	ALPINE ACRES COMMUNITY ASSOC	12338 BRETZ RD	LEAVENWORTH	WA	98826
45	Wenatchee	01824	Stonewater Ranch	A	ALAN	SKAY	STONEWATER RANCH	19537 CHIWAWA LOOP RD	LEAVENWORTH	WA	98826
45	Wenatchee	02135	Y-EASY MART	A	ANGIE	BEEM		9689 HIGHWAY 2	PESHASTIN	WA	98847
45	Wenatchee	02140	BOBS APPLE BARREL	A	ROBERT	SPANJER		PO BOX 267	CASHMERE	WA	98815
45	Wenatchee	02413	UPPER SKI HILL WATER ASSN	A	STANLEY	ADAMS		7750 MOUNTAIN HOME RD	LEAVENWORTH	WA	98826
45	Wenatchee	02461	JUST PLAIN GROCERY & GAS	A	WILLIAM	GIBBS		18632 HWY 209	LEAVENWORTH	WA	98826
45	Wenatchee	02744	NORTHWEST WHOLESALE	A	KEN	KNAPPERT		PO BOX 1649	WENATCHEE	WA	98807-1649
45	Wenatchee	02791	CASCADE MOUNTAIN BIBLE CHURCH	A	DENNY	MCMILLIN		622 CEDAR STREET	LEAVENWORTH	WA	98826
45	Wenatchee	05589	TELMA RESORT	A	STEPHEN	DOBSON		BOX 17999 N SHORE DR	LEAVENWORTH	WA	98826
45	Wenatchee	06073	WARNER FLATS DOMESTIC WATER CO INC	A	CLARENE	EAST	WARNER FLATS DOMESTIC WATER	3982 EELS RD	CASHMERE	WA	98815
45	Wenatchee	06795	BARDIN FARMS HOME RANCH	A	JANET	COLLINS	BARDIN FARMS CORP	BOX 223	MONITOR	WA	98836
45	Wenatchee	07929	BEAVER VALLEY SCHOOL	A	LAVONNE	MALM	CASCADE SCHOOL DISTRICT	330 EVANS ST	LEAVENWORTH	WA	98826
45	Wenatchee	07963	TALL TIMBER RANCH WATER SYSTEM	A	STAN	FISHBURN		27875 WHITE RIVER RD	LEAVENWORTH	WA	98826
45	Wenatchee	08432	WEDGE MOUNTAIN INN	A	HARJINDER	SANDU		7335 STATE HIGHWAY 2	CASHMERE	WA	98815
45	Wenatchee	08825	BROWN WATER USERS	A	PRIMARY CONTACT	WS# 08825 BROWN WATER USERS		STAR ROUTE BOX 102	LEAVENWORTH	WA	98826
45	Wenatchee	08850	BROWN ROAD WATER USERS ASSN	A	DAVE	LEONARD					
45	Wenatchee	09555	BIG Y CAFE	A	JAMES & ELISABETA	BRISTOW		PO BOX 99	LEAVENWORTH	WA	98826
45	Wenatchee	10085	BUTTE RANCH	A	KYLE	PEER		PO BOX 428	CHELAN	WA	98816
45	Wenatchee	10795	CAMAS MEADOWS BIBLE CAMP	A	JERED	HEEREN		PO BOX 304	CASHMERE	WA	98815
45	Wenatchee	10879	PESHASTIN WATER ASSOC.	A	DICK	HARVEY		PO BOX 457	PESHASTIN	WA	98847
45	Wenatchee	10972	CAMP ZANIKA LACHE	A	MARY	COX		16400 CEDAR BRAE RD	LEAVENWORTH	WA	98826
45	Wenatchee	11700	CASHMERE WATER DEPARTMENT	A	MARK	BOTELLO		101 WOODRING ST	CASHMERE	WA	98815
45	Wenatchee	12286	CHELAN COUNTY FAIRGROUND	A	MARSHA	CLUTE		5700 WESTCOTT DRIVE	CASHMERE	WA	98815
45	Wenatchee	12292	BLU-SHASTIN RV PARK	A	DAVID	HAASE		3300 HWY 97	PESHASTIN	WA	98847
45	Wenatchee	12850	CHIWAWA COMMUNITIES ASSN	A	EVAN	WOODS		2210 PINE TREE RD	LEAVENWORTH	WA	98826
45	Wenatchee	18131	PINE RIVER RANCH #2	A	SCOTT	EISEN		5180 BINDER RD	CASHMERE	WA	98815
45	Wenatchee	18188	DAWN LEE COURTS	A	ANN	CHIPMAN		PO BOX 424	CASHMERE	WA	98815
45	Wenatchee	18905	BEAR S LAIR RESTAURANT	A	W.D.	BRINE		1018 131ST NW	MARYSVILLE	WA	98270
45	Wenatchee	20100	CHELAN CO PUD - DRYDEN	A	BILL	ZACHER	CHELAN COUNTY PUD	PO BOX 1231	WENATCHEE	WA	98807-1231
45	Wenatchee	20110	DRYDEN COMPLEX	A	JEFFREY C. VAN EYK &	SANDRA J. JOHNSON		1330 3RD STREET	WENATCHEE	WA	98801
45	Wenatchee	20115	DRYDEN SCHOOL	A	NORM	VEACK		SCHOOL ROAD	LEAVENWORTH	WA	98826
45	Wenatchee	21200	EAST MONITOR WATER ASSN	A	DAN	RUSSELL		2305 EASY ST	WENATCHEE	WA	98801
45	Wenatchee	23661	G-B PROPERTIES WWW 1	A	GRAHAME	WATSON		18623 HWY 209	LEAVENWORTH	WA	98826
45	Wenatchee	25315	ALPINE WATER DISTRICT	A	DON	WEEKS		22515 MEADOW CR RD	LEAVENWORTH	WA	98826
45	Wenatchee	26101	Lytle Water System	A	HARRY	COPELAND		2960 EASY ST	WENATCHEE	WA	98801
45	Wenatchee	29316	YODELIN WATER SYSTEM	A	DONALD	MARSHALL		902 43RD ST NW	MARYSVILLE	WA	98271
45	Wenatchee	32057	HEADWATERS PUB	A	GARY & TOMI	KANGAS		PO BOX 1076	LEAVENWORTH	WA	98826
45	Wenatchee	34816	CAMP CAMREC	A	STAN	RICHARDSON		18899 LITTLE CHUMSTICK CREEK RD	LEAVENWORTH	WA	98826
45	Wenatchee	37185	JUNCTION SHELL SERVICE	A	PRIMARY CONTACT	WS# 37185 JUNCTION SHELL SERVICE		P O BOX 1299	WENATCHEE	WA	98801
45	Wenatchee	39553	FOREST GLEN WATER SYSTEM	A	JUDY	PICKERING		11195 WENDING LN	LEAVENWORTH	WA	98826
45	Wenatchee	39566	SPEARS WATER SYSTEM	A	TOM	SPEARS		5800 EVERGREEN DR	CASHMERE	WA	98815
45	Wenatchee	39592	PLAIN FLATS WATER SYSTEM	A	JEB	BUTLER	PLAIN FLATS WATER SYSTEM	18582 HAZEL LANE	PLAIN	WA	98826
45	Wenatchee	41991	KAHLER GLEN GOLF & SKI RESORT	A	R CARY	ELLER		604 BRIARWOOD DRIVE	EAST WENATCHEE	WA	98802
45	Wenatchee	45060	LAKE WENATCHEE RANGER DIST	A	PRIMARY CONTACT	WS# 45060 LAKE WENATCHEE RANGER DIS		STAR RT	LEAVENWORTH	WA	98826
45	Wenatchee	45067	LAKE WENATCHEE VILLAGE	A	FRED	STREIB		21325 HWY 207	LEAVENWORTH	WA	98826
45	Wenatchee	45073	LAKE WENATCHEE WATER USERS	A	CLEVE	BORTH		16863 NORTH SHORE DR	LEAVENWORTH	WA	98826
45	Wenatchee	46500	LEAVENWORTH, CITY OF	A	STANLEY	ADAMS		PO BOX 287	LEAVENWORTH	WA	98826
45	Wenatchee	47044	BUCKBOARD CAFE	A	KAREN	AMBROSE		PO BOX 985	LEAVENWORTH	WA	98826
45	Wenatchee	47079	CAMP CAMREC 1	A	ROGER	REIMER		18899 LITTLE CHUMSTICK CREEK RD	LEAVENWORTH	WA	98826
45	Wenatchee	51786	BJ S FOOD AND FUEL 2	A	LEE	WISHON		PO BOX 40	ROCK ISLAND	WA	98850
45	Wenatchee	52050	MATTHEWS VISTA RANCHETTES WATER SY	A	PRIMARY CONTACT	WS# 52050 MATTHEWS VISTA RANCHETTES		WHEELER HILL ROAD	WENATCHEE	WA	98801
45	Wenatchee	54535	MIDWAY VILLAGE & GROCERY	A	GAYLE	EVANS		14193 CHIWAWA LP RD	LEAVENWORTH	WA	98826
45	Wenatchee	55730	OUTPOST SALOON	A	NORMA	JONES		PO BOX 273	MONITOR	WA	98836
45	Wenatchee	56812	MOUNTAIN VIEW DRIVE IN	A	BOB	SPICSS		7698 STINES HILL RD	CASHMERE	WA	98815
45	Wenatchee	5P660	Pearrgin Lk State Park	A	RICK	LEWIS	WA SATE PARKS EASTERN REGION	561 BEAR CREEK RD	WINTHROP	WA	98862
45	Wenatchee	63408	CHELAN CO PUD - OLLALA CANYON	A	BILL	ZACHER	CHELAN COUNTY PUD	PO BOX 1231	WENATCHEE	WA	98807-1231
45	Wenatchee	65071	59ER DINER	A	TOM & DODIE	OLSON		100 CASCADE PLACE	CASHMERE	WA	98815
45	Wenatchee	67050	PESHASTIN WATER DISTRICT	A	GLENN	GORTON		PO BOX 751	PESHASTIN	WA	98847-0751
45	Wenatchee	67100	PESHASTIN DOMESTIC WATER ASSN	A	MIKE	PFLUGRATH		PO BOX 672	PESHASTIN	WA	98847
45	Wenatchee	67500	PINE RIVER WATER USERS ASSN	A	MARK	JENKINS		20531 118TH STREET SE	SNOHOMISH	WA	98290
45	Wenatchee	67610	PINE VILLAGE KOA	A	DAVID	WITT		11645 EAGLE CREEK RD	LEAVENWORTH	WA	98826

WRIA 45 Group A Water Systems in Washington Department of Health's Database

WRIA Num	WRIA	WS ID	WS Name	WS Grp	Contact F_Name	Contact L_Name	WS Address1	WS Address2	WS City	WS State	WS Zip
45	Wenatchee	67757	PLANT DOMESTIC W S	A	PRIMARY CONTACT	WS# 67757 PLANT DOMESTIC W S		HYDRO ELECTRIC PLANT	WENATCHEE	WA	98801
45	Wenatchee	68417	PONDEROSA COMMUNITY CLUB INC	A	PAUL	JOHANSEN	PONDEROSA COMMUNITY CLUB INC	21100 CAYUSE ST	LEAVENWORTH	WA	98826
45	Wenatchee	72720	RIVER BEND PARK WATER SYSTEM	A	SHAWN	WILKERSON	WILKYS WATER	PO BOX 782	LEAVENWORTH	WA	98826
45	Wenatchee	72809	RIVERBEND MOBILE PARK, LLC	A	VERNON	TRITLE		7900 STINES HILL RD #4	CASHMERE	WA	98815
45	Wenatchee	72821	RIVERS EDGE LODGE	A	JAMES	WHITE		8401 US HWY 2	LEAVENWORTH	WA	98826
45	Wenatchee	77432	SELFS TRAILER COURT	A	JOHN	ROLEN		3601 SELFS RD	CASHMERE	WA	98815
45	Wenatchee	82380	SOUTH SHORE SUMMER HOMES	A		UNKNOWN OWNER - INACTIVE SYSTEM					
45	Wenatchee	82430	PESHASTIN S SIDE WATER ASSOC	A	PRIMARY CONTACT	WS# 82430 PESHASTIN S SIDE WATER AS		BOX 378	PESHASTIN	WA	98847
45	Wenatchee	85255	SUNLAND SITES	A	ELDON	RICHARDSON		18130 SUNLAND DR	LEAVENWORTH	WA	98826
45	Wenatchee	85390	SUNNY SITES ADDITION 1	A	RICHARD	GILBERT		18588 RIECHE RD	LEAVENWORTH	WA	98826
45	Wenatchee	85912	SUNRISE SHORES	A	DENNIS	EVANS		4440 HWY 97A	CHELAN	WA	98816
45	Wenatchee	87126	TALL TIMBER HOMEOWNERS ASSN	A	STEVE	MAY		9 SKAGIT KEY	BELLEVUE	WA	98006
45	Wenatchee	87127	TALL TIMBER SUBDIVISIONS	A	STAN	FISHBURN		9 SKAGIT KEY	BELLEVUE	WA	98006
45	Wenatchee	87781	THE HOLE IN THE WALL	A	PRIMARY CONTACT	WS# 87781 THE HOLE IN THE WALL		STAR RT BOX 148	LEAVENWORTH	WA	98826
45	Wenatchee	87823	Squirrel Tree Resort	A	BILL	BINCKLEY		PO BOX 2079	LEAVENWORTH	WA	98826
45	Wenatchee	88126	THOUSAND TRAILS - LEAVENWORTH	A	STEVE	FISCHER		20752 CHIWAWA LOOP RD	LEAVENWORTH	WA	98826
45	Wenatchee	88392	TIMBERLINE WATER USERS	A	GLENN	GORTON		PO BOX 751	PESHASTIN	WA	98847-0751
45	Wenatchee	88945	TOWNS MOBILE HOME PARK	A	STEVEN	TOWN	TOWNS MOBILE HOME PARK	321 TIGNER RD	CASHMERE	WA	98815
45	Wenatchee	90975	VALLEY HI COMMUNITY CLUB	A	DANNY	RIBLETT	VALLEY HI COMMUNITY CLUB	PO BOX 915	ROSLYN	WA	98941
45	Wenatchee	91610	VICE, HUEY	A	PRIMARY CONTACT	WS# 91610 VICE, HUEY		RT 1 BOX 97	MALAGA	WA	98828
45	Wenatchee	94300	CHELAN CO PUD #1	A	MANAGER	WS# 94300 CHELAN CO PUD #1		PO BOX 1231	WENATCHEE	WA	98801
45	Wenatchee	94342	WENATCHEE RIVER COUNTY PARK	A	JERRY	NIEBUHR		PO BOX 373	MONITOR	WA	98836
45	Wenatchee	94475	WEST CASHMERE WATER SYSTEM	A	ROBERT	LYND		6014 GOODWIN RD	CASHMERE	WA	98815
45	Wenatchee	96093	WHISPERING PINES WATER ASSN	A	SCOTT	EISEN		5180 BINDER RD	CASHMERE	WA	98815
45	Wenatchee	98835	YMCA CAMP	A	ERIC	NELSON		15263 NORTHSHORE DR	LEAVENWORTH	WA	98826
45	Wenatchee	AA495	MOUNTAIN RANCH ADVENTURES	A	BILL	NEWELL		19115 CHIWAWA LOOP RD	LEAVENWORTH	WA	98826
45	Wenatchee	AA967	Stevens Pass Nordic Center	A	SCOTT	EISEN		PO BOX 98	SKYKOMISH	WA	98288
45	Wenatchee	AB039	Smallwoods Harvest Water System	A	MIKE & LYNN	SMALLWOOD		PO BOX 494	PESHASTIN	WA	98847
45	Wenatchee	AB236	Macs Water System	A	LESTER	NUNN		PO BOX 555	PESHASTIN	WA	98847
45	Wenatchee	AB281	Plain Hardware	A	ROB	WHITTEN	PLAIN HARDWARE	18636 BEAVER VALLEY RD	LEAVENWORTH	WA	98826
45	Wenatchee	AB662	Preys Fruit Barn	A	RUDY	PREY		PO BOX 536	PESHASTIN	WA	98847
45	Wenatchee	FS440	JUNIOR POINT	A	PRIMARY CONTACT	WS# FS440 JUNIOR POINT		CHELAN RANGER STA	CHELAN	WA	98816
45	Wenatchee	FS516	LAKE WENATCHEE RANGER STATION	A	GREG	THAYER	LEAVENWORTH RD	600 SHERBOURNE	LEAVENWORTH	WA	98826
45	Wenatchee	FS517	LAKE WENATCHEE R.S. WELL	A	PRIMARY CONTACT	WS# FS517 LAKE WENATCHEE R.S. WELL		STAR RT BOX 109	LEAVENWORTH	WA	98826
45	Wenatchee	FS518	LEAVENWORTH NATL FISH HATCHERY	A	PAIGE	BALLING		215 MELODY LN	WENATCHEE	WA	98801-5933
45	Wenatchee	FS519	LEAVENWORTH SKI HILL/LEAVENWORTH	A	GREG	THAYER	LEAVENWORTH RD	600 SHERBOURNE	LEAVENWORTH	WA	98826
45	Wenatchee	FS671	NASON CREEK CG/LAKE WENATCHEE RD	A	GREG	THAYER	LEAVENWORTH RD	600 SHERBOURNE	LEAVENWORTH	WA	98826
45	Wenatchee	FS792	ROCK CREEK GUARD STATION	A	PRIMARY CONTACT	WS# FS792 ROCK CREEK GUARD STATION		STAR RT BOX 109	LEAVENWORTH	WA	98826
45	Wenatchee	FS952	TUMWATER CG/LEAVENWORTH RD	A	GREG	THAYER	LEAVENWORTH RD	600 SHERBOURNE	LEAVENWORTH	WA	98826
45	Wenatchee	HD444	MAZAMA SNOW CAMP	A		MAINTENANCE SUPERINTENDENT		PO BOX 648	OKANOGAN	WA	98840
45	Wenatchee	HD515	NASON CREEK REST AREA	A	RICK	WOOD		PO BOX 98	WENATCHEE	WA	98807
45	Wenatchee	HD960	WENATCHEE DIST. OFC. MAINT. SITE	A		MAINTENANCE SUPERINTENDENT		PO BOX 98	WENATCHEE	WA	98801
45	Wenatchee	SP172	CONFLUENCE STATE PARK	A	MATT	MORRISON	WA STATE PARKS EASTERN REGION	333 OLDS STATION RD	WENATCHEE	WA	98801
45	Wenatchee	SP202	DAROGA STATE PARK NORTH	A	GEORGE	EIDSON	DAROGA ST PK NORTH	1 S DAROGA PARK RD	ORONDO	WA	98843
45	Wenatchee	SP204	DAROGA STATE PARK SOUTH	A	DAVID	SCHWAB		HCR BOX 38A	ORONDO	WA	98843
45	Wenatchee	SP430	LAKE WENATCHEE STATE PARK NORTH SI	A	DAVID	JAQUISH	EASTERN REGION	2201 N DUNCAN DR	WENATCHEE	WA	98801-1007
45	Wenatchee	SP431	LAKE WENATCHEE STATE PARK SOUTH SI	A	RICK	HALSTEAD		21588A HWY 207	LEAVENWORTH	WA	98826
45	Wenatchee	SP475	LINCOLN ROCK STATE PARK	A	GEORGE	EIDSON	WA STATE PARKS EASTERN REGION	13253 SR 2	EAST WENATCHEE	WA	98802
45	Wenatchee	SP845	SQUILLCHUCK STATE PARK	A	MATT	MORRISON	WA STATE PARKS EASTERN REGION	333 OLDS STATION RD	WENATCHEE	WA	98801
45	Wenatchee	SP950	TWENTY FIVE MILE CREEK STATE PARK	A	DWIGHT	KEEGAN	WA STATE PARKS EASTERN REGION	PO BOX 651	CHELAN	WA	98816